

Chapter 5 – Prioritized Pollutants and Critical Areas

5.1 Prioritized Pollutants and Watershed Concerns

Based on input from three public meetings, and surveys distributed to the USR WAG, Table 5.1 summarizes the prioritized pollutants, natural resources and watershed concerns that will be addressed in the more immediate stages of implementation of this WMP. These priorities are likely subject to change as time goes on and various changes in water quality or land use, for example, continue to take place in the watershed.

Table 5.1 Prioritized Watershed/Natural Resource Concerns and Pollutants of Concern

Pollutant Concerns
1. Soil Erosion/Sedimentation
2. Stormwater Runoff Quantities into Lakes/Streams
3. Road Salt/Brine
4. Oil/Grease/Gasoline
5. Nutrients/Fertilizers
6. Pesticides
7. Heavy Metals
8. Toxic compounds (PCBs/Chromium VI, household hazardous waste, etc.)
9. Bacteria/Pathogens
Watershed/Natural Resource Concerns
1. Degraded Water Quality
2. Water Quality Protection
3. Uncontrolled Development (Land Use Planning)
4. Fishery
5. Degraded Aquatic Habitat
6. Loss of rural character
7. Urban Sprawl
8. Septage Facilities – Land application
9. Nuisance Algae/Excessive Vegetation Growth in Surface Waters
10. Effluent discharges from Waste Water Treatment Plants
11. Failing septic systems/tile fields
12. Flooding Problems
13. Eroding Stream Banks
14. Litter/Trash/Illegal Dumping

5.2 Critical Areas

A number of critical areas have been delineated in the watershed based in part on the prioritized pollutants and watershed concerns identified by stakeholders in the watershed and on current and historical water quality data. 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.

By defining the critical areas in the watershed, implementation activities and funding for particular projects can be focused to those particular areas that contribute the highest amount of pollutants to the

receiving water body. Identification of critical areas will save time and money because projects can be focused on particular areas, rather than a very large geographical area.

In order to prioritize where implementation and continued planning efforts need to be focused in order to target the greatest pollutant problems or other watershed-related concerns, critical areas have been identified in the watershed. Table 5.2 summarizes the critical areas that have been established for the USR watershed:

Table 5.2 Critical Areas in the Upper-2 Shiawassee River Watershed

Subwatershed	Location	Problem/Concern Cited
South Branch Shiawassee River	1. South Branch Shiawassee River from the vicinity of the City of Howell downstream to the main branch Shiawassee River	1.1 FCA for PCBs (contaminated river and floodplain sediments)
	2. South Branch Shiawassee River from Mason Road upstream to the Marion and Genoa Drain	2.1a Poor macroinvertebrate community (2007 TMDL)
		2.1b Hexavalent chromium contamination (2007 TMDL)
	3. South Branch Shiawassee River from M-59 upstream to Pinckney Road	3.1 Poor fish community (2007 TMDL)
	4. Road/Stream Crossing: SB-07	4.1 Residential lawn manicured to edge of stream
	5. Road/Stream Crossing: SB-15	5.1 "Please Feed the Ducks" graffiti on guardrail of bridge
Marion and Genoa Drain	1. Marion and Genoa Drain from the confluence with the South Branch Shiawassee River upstream to the stormwater discharge pipe just upstream of Howell WWTP Outfall 001	1.1a Hexavalent chromium contamination (2007 TMDL) of soils and groundwater at Diamond Chrome Plating Facility, also affected stream water quality through stormwater runoff discharge from property
		1.1b Poor macroinvertebrate community (2007 TMDL)
	2. Road/Stream Crossing: MG-17	2.1 Hydromodifications upstream and downstream of crossing
	3. Entire Subwatershed	3.1 Land Use Planning
3.2 Protection of Priority I High-Quality Natural Areas and riparian corridors		
Bogue Creek	1. Thompson Lake in the vicinity of the City of Howell	1.1 FCA for PCBs (2009 TMDL, contaminated lake sediments)
	2. Road/Stream Crossing: BC-09	2.1 Large woody debris blocking 1 of 2 culverts—flow restricted
	3. Road/Stream Crossing: BC-11	3.1 Residential lawn manicured to edge of stream
	4. Entire Subwatershed	4.1 Flashy Hydrology
4.2 Land Use Planning		
4.3 Protection of Priority I High-Quality Natural Areas and riparian corridors		

Table 5.2 Critical Areas in the Upper-2 Shiawassee River Watershed (continued)

Subwatershed	Location	Problem/Concern Cited
Yellow River Drain	1. Road/Stream Crossing: YR-01	1.1 Erosion and sedimentation of east bank at downstream end of road crossing
	2. Road/Stream Crossing: YR-05	2.1 Bridge scupper drains provide direct conduit for sediment to wash into stream below
	3. Entire Subwatershed	3.1 Land Use Planning 3.2 Protection of Priority I High-Quality Natural Areas and riparian corridors
Cranberry Creek	1. Cranberry Creek from the Yellow River Drain confluence upstream seven (7) miles	1.1 Poor fish community (2007 TMDL)
	2. Road/Stream Crossing: CC-02	2.1 Bridge scupper drains provide direct conduit for sediment to wash into stream below
	3. Entire Subwatershed	3.1 Land Use Planning 3.2 Protection of Priority I High-Quality Natural Areas and riparian corridors
	4. Upstream Reaches	4.1 Reported by MDEQ to be heavily impacted by agricultural runoff
North Ore Creek	1. Road/Stream Crossing: NO-07	1.1 Trash/Debris (construction barrel and grass clippings) instream at downstream end of road crossing
	2. Entire Subwatershed	2.1 Flashy Hydrology
		2.2 Land Use Planning 2.3 Protection of Priority I High-Quality Natural Areas and riparian corridors
Denton Creek	1. Road/Stream Crossing: DC-02	1.1a Impervious surfaces cover streambanks at upstream and downstream ends—no vegetation to filter stormwater runoff
		1.1b Utility line runs above stream in open air (downstream end)
	2. Entire Subwatershed	2.1 Land Use Planning 2.2 Protection of Priority I High-Quality Natural Areas and riparian corridors

Figure 5.1 (also in Appendix A) provides a visual representation of the current critical areas in the USR watershed. It should be noted that as implementation of the USR WMP continues, the critical areas will likely also change over time as protection/enhancement projects are completed, as additional challenges to the watershed may arise, and as more information on the characteristics of the watershed are identified (i.e. utilize GIS-based soil vulnerability, floodplains, and steep slopes information that can be placed as overlays on a map of the watershed) that might also help to delineate additional critical areas. These changes will be reflected in future modifications to this WMP.

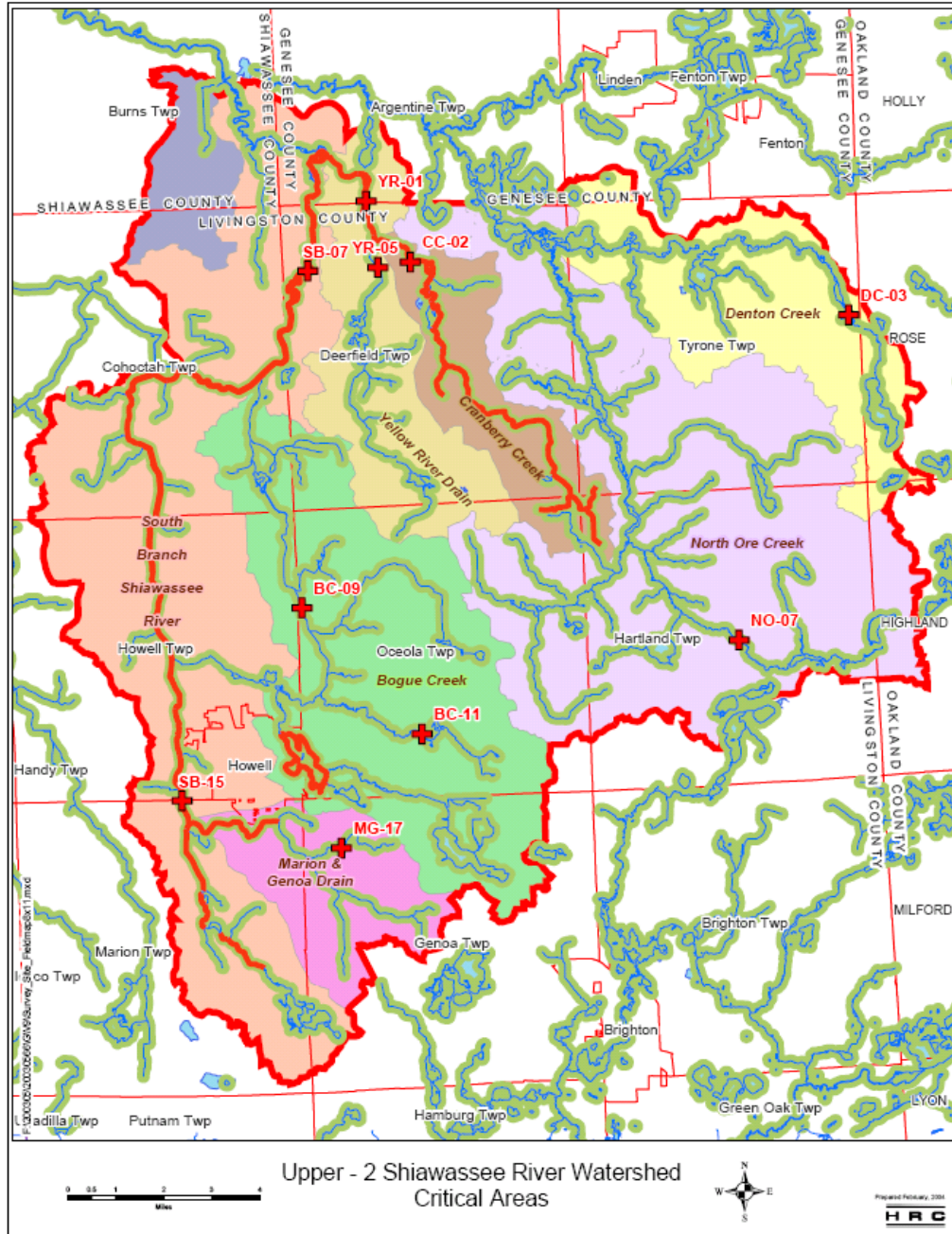


Figure 5.1 Critical Areas in the Upper-2 Shiawassee River Watershed

KEY:

- The critical areas shaded in red include the South Branch Shiawassee River, Cranberry Creek, and Thompson Lake in the vicinity of the City of Howell due to TMDLs yet to be developed.
- The road/stream crossing sites identified with red-crosses have been identified as critical areas for enhancement.
- The entire watershed boundary outlined in red indicates land use planning as a critical area that needs to be addressed throughout implementation of the WMP; and,
- The green-shaded areas flanking all watershed streams and lakes (riparian corridors) in the watershed have been identified as critical areas for protection and/or enhancement.

The schedule for implementation of the BMPs that target the prioritized pollutants and watershed/natural resource concerns, as well as the critical areas, will fall into the short-term designation, or in other words, will be scheduled to be implemented within 1-3 years of WMP approval. Table 7.2 in Section 7.4 details the timelines for implementation, the costs, and environmental benefits of each BMP that will address the pollutants and watershed/natural resource concerns for the USR watershed.