
CHAPTER 1

EXECUTIVE SUMMARY

The Upper Clinton Subwatershed Management Plan was developed to meet the Federal Phase II stormwater permit requirements. Since 1972, the Clean Water Act has been operating to reduce and control point-source water pollution. The next phase of this law (or “Phase II”) is requiring communities that have “urbanized areas” within their boundaries to help control non-point source pollutants entering surface waters through stormwater. Urbanized areas are determined by criteria using data from the 2000 U.S. Census. This plan represents a “Watershed-based” approach to the Phase II permit process.

The Upper Clinton Subwatershed is part of the larger Clinton River watershed. It is called the “Upper Clinton” because it encompasses most of the headwaters, or sources, for the Clinton River system. The subwatershed is 86.24 square miles (55,194 acres), is located in the northwest portion of Oakland County, and covers ten communities: Springfield Township, White Lake Township, Brandon Township, Independence Township, City of the Village of Clarkston, Waterford Township, City of Lake Angelus, Orion Township, City of Auburn Hills, and the City of Pontiac.

This plan was developed using several levels of participation. A “Core Group” was established, which includes community representatives from each participating community. A “Steering Committee” was also organized, including a wider range of state, regional, and county agencies, and other organizations. Also, “Stakeholders” in the subwatershed were identified, representing specialized groups, public officials, and the public at large. The Core Group developed drafts of the Plan’s chapters, and sought input from the Steering Committee and Stakeholders. Their comments and feedback were then analyzed by the Core Group and incorporated into the Plan.

To begin the planning process, a watershed analysis was conducted that looks at the current conditions within the subwatershed, and identifies trends and potential future water quality issues. As part of this analysis, regional growth trends and land use trends were assessed. On a regional basis, the subwatershed continues to develop, with fewer people living together per household, and with the average amount of land consumed by a typical home increasing. Southeast Michigan Council of Governments (SEMCOG) predicts that this trend will prevail over the next 30 years. The main land use trends within the subwatershed include single-family residential, recreation/conservation, and vacant. An analysis of the current sanitary treatment facilities show that slightly more than half of the subwatershed has a sanitary sewer system, where the remaining population is served by septic systems.

Existing water quality data from various federal, state, and local sources were also collected and analyzed. The analysis of available water quality and environmental data for the Upper Clinton subwatershed indicates that the Upper Clinton River, its tributaries and associated lakes, make up a generally high quality waterway that has begun to show some signs of impairment. The noted impairments have been prioritized based on how widespread and consistent they have been, the degree of impact they are currently having or may have in the future, and how they interrelate. These impairments (in priority order) include bacteria, changes in hydrology, nutrients, and sediments. Sources and causes for each of these impairments were determined and shown in

table 3.11. Critical areas in which to concentrate future actions were identified, including lakes with past beach-closure histories, stream sites with increased peak flows, and areas within 250 feet of lakes and streams. The existing land uses in these critical areas were also determined, and include single-family residential, recreation/conservation, and vacant land uses. These point to putting priorities on educating the public, working with land managers of large parklands, and implementing protective land planning tools (such as ordinance or engineering standards) to ensure the vacant lands are developed to protect water quality.

Through a series of public meetings, goals and objectives were worked out for the Plan. Each input group was provided with a summary of the existing conditions within the watershed, and was then asked to base their goals on this data, as well as their own knowledge of the watershed. These sessions also resulted in a list of “desired” uses that watershed residents envisioned for their communities. The resulting final goals deal with the main issues of water quality, water quantity (flow), preservation of natural features within the subwatershed, public understanding and education about water quality, aquatic and riparian habitats, and recreational uses.

Because so much of the subwatershed is yet to be developed, or developed in a way that could allow more intense re-development, an impervious surface analysis was conducted, along with an analysis of all the participating communities’ planning documents. The impervious surface analysis was conducted by the Oakland County Planning and Economic Development Services. They used a model that predicts the quality and character of a stream based on the percentage of impervious cover in the watershed. Conclusions from this analysis indicate that the subwatershed is already 17% impervious, which significantly impacts streams so that they show signs of stream bed degradation, degraded physical habitat within the stream, and water quality problems. However, this level of impervious cover is not consistent throughout all areas of the subwatershed, but is an “average imperviousness.” In addition, some areas can be improved through the use of better site design measures. Also, further research in this field has shown that in this subwatershed (given its level of imperviousness), that maintaining riparian cover along streams and lakes may be as, or more, important than minimizing impervious surfaces in future developments.

The analysis of each community’s planning documents also provided some guidance regarding ways water can be better protected in the future. An extensive checklist was used to evaluate the Master Plans, Zoning Ordinances, Engineering Standards, and other planning documents of each community within the subwatershed. A narrative describing the checklist results was written for the Plan that describes where each community is strong in protecting water resources, and the challenges it faces in light of future development. The analysis uncovered several topics that were, in general, challenges for the subwatershed as a whole. These topics could be added to or expanded upon in planning documents, and include stormwater management, impervious surface mitigation, natural feature preservation, riparian buffers, native plants in landscaping, and in-fill or redevelopment.

Given the watershed analysis, impervious surface analysis, and planning analysis, the Core Group developed a set of 35 actions that could be used to meet the goals and objectives of the Watershed Plan. These actions, or Best Management Practices (BMPs), encompass both structural practices, and vegetative or managerial practices. These actions are described in Chapter 6 of the Plan, and then laid out in a matrix in Chapter 7, showing how these actions

relate to the pollutants, sources and causes, and other issues found throughout the planning process. Each community has carefully considered each action, and identified the ones that can be implemented within their boundaries based on the current conditions of their water resources, and political and economic parameters. Commitments within the Watershed Plan will be translated into an individual Stormwater Pollution Prevention Initiative, which is the next document to be forwarded to Michigan Department of Environmental Quality within the permit process. Once these documents have been approved, the Upper Clinton Subwatershed communities will begin implementing actions to improve and protect water resources for the future.