

## Red Run Subwatershed, Clinton River Watershed Storm Water Runoff and Pollution Sources

### Background Information

The **Red Run Subwatershed** is a portion of the Clinton River Watershed. A **watershed** is the area of land that drains into a common body of water, whether a stream, river or lake. The Clinton River drains to Lake St. Clair, then to Lake Erie and eventually to the Atlantic Ocean. Water doesn't recognize jurisdictional boundaries. That's why protecting the Clinton River Watershed requires the cooperation of municipalities, schools, community and civic organizations and residents.

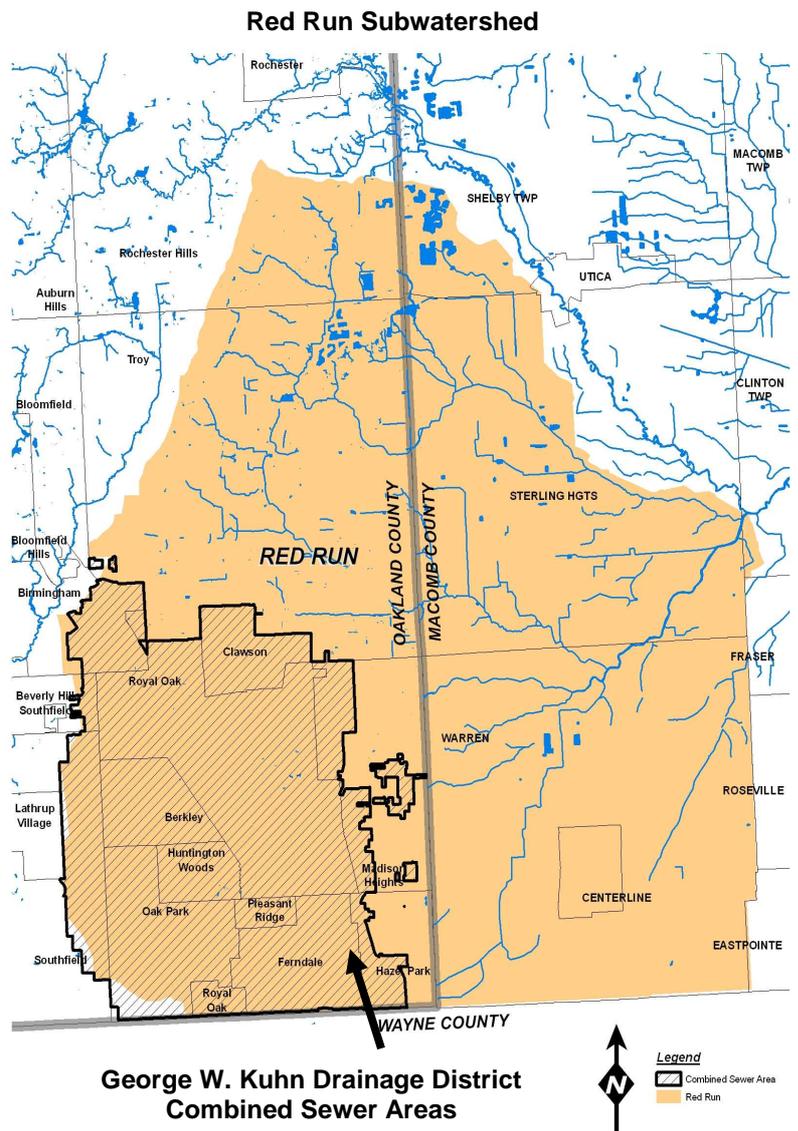
The **Clinton River Watershed** encompasses approximately 760-square miles and is home to more than 1.5 million people. The headwaters of the Clinton River are in Oakland County where the river begins its meandering 80-mile trek, passing through Macomb County and finally discharging into Lake St. Clair. The Red Run Subwatershed includes the southeast portion of Oakland County and the southwest portion of Macomb County. It includes tributaries from Troy and Rochester Hills, the combined sewer area in southeast Oakland County, waterways in Warren and Sterling Heights and drains into the Clinton River at the west edge of Clinton Township. The Red Run Subwatershed covers 142-square miles and is home to 550,000 people.

### Storm Water Runoff

There are two basic types of sewer systems: combined and separated. In a **combined sewer system**, both the storm water and sanitary sewage use the same system of pipes. In a **separated sewer system** there are two sets of pipes. One set carries sanitary sewage to the wastewater plant for treatment and the other set of pipes carries untreated storm water to our local rivers, lakes and streams. That means the rain that runs off your yard, roof, or street (stormwater) travels through the storm drain system to the Clinton River.

The Red Run subwatershed has both combined and separated sewer systems.

The majority of the subwatershed is served by a separated drainage system. Rain and runoff from yards enter storm drains and flow, without treatment, to our local rivers lakes and streams. The southeast portion of Oakland County is served by a combined sewer system. This area was formerly referred to as the **Twelve Towns Drainage District**. Today, it is known as the **George W. Kuhn Drainage District**.



During dry weather, both storm water and sanitary sewage are conveyed to the Detroit Wastewater Treatment Plant.

During large rain storms, the volume in system is greater than can be conveyed to the wastewater treatment plant and excess flow is stored in the **George W. Kuhn Combined Sewer Overflow Control Facility**. Discharges from this facility are permitted, settled, fine screened and treated with chlorine before being discharged to the Red Run Drain. The overflows meet all applicable water quality standards, including bacteria. Improvements in the facility completed in 2006 have reduced the number of permitted treated discharges from approximately ten to four per year.

## Pollution Sources

Pollution can be from either point sources or non-point sources. **Point source pollution** comes from an easily identifiable location such as an outfall pipe from a wastewater treatment plant or a factory. Major point sources are typically regulated under permits. **Non-point source pollution** comes from many diffuse sources. It is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants. The greatest source of pollution to the Clinton River Watershed is non-point source pollution. That means the pollution from around our homes and yards is impacting the quality of our local rivers, lakes and streams. The Michigan Department of Natural Resources 2005 Clinton River Assessment noted that nonpoint source pollution is the greatest factor that degrades water quality in the watershed today. This type of pollution generally consists of sediments, nutrients, bacteria, organic chemicals, and inorganic chemicals from construction sites, parking lots, urban streets, septic seepage, illicit connections, and historical dumping grounds. In order to assist the communities with their subwatershed management plan in 2005 an assessment of the Red Run subwatershed was completed. According to the assessment the most common issues within the subwatershed were trash and debris in waterbodies, impacted or inadequate riparian buffers, bank erosion, and proximity to problematic land use types. The study also found common potential sources of pollution in the subwatershed included nutrients from lawn maintenance, sediment, and lack of pollution control at some hotspots. For more detail about the assessments and the subwatershed management plan please visit <http://www.crowc.org/watershed/subwatersheds/redrun.html>

## The Solution to the Pollution

Education, maintenance of streets and catch basins, better lawn maintenance practices, and reforestation of pervious areas were all cited by the Red Run Subwatershed Management Plan as some of the potential solutions to reduce the pollution potential of the subwatershed. For more information on how you can help keep our water ways clean. Please visit [http://www.socwa.org/lawn\\_and\\_garden.htm](http://www.socwa.org/lawn_and_garden.htm)



*This document was created by the Clinton River Watershed Council in conjunction with South Oakland County Water Authority for the Healthy Lawns and Landscapes in the Red Run Subwatershed a Michigan Dept of Environmental Quality Nonpoint Source Grant.*

