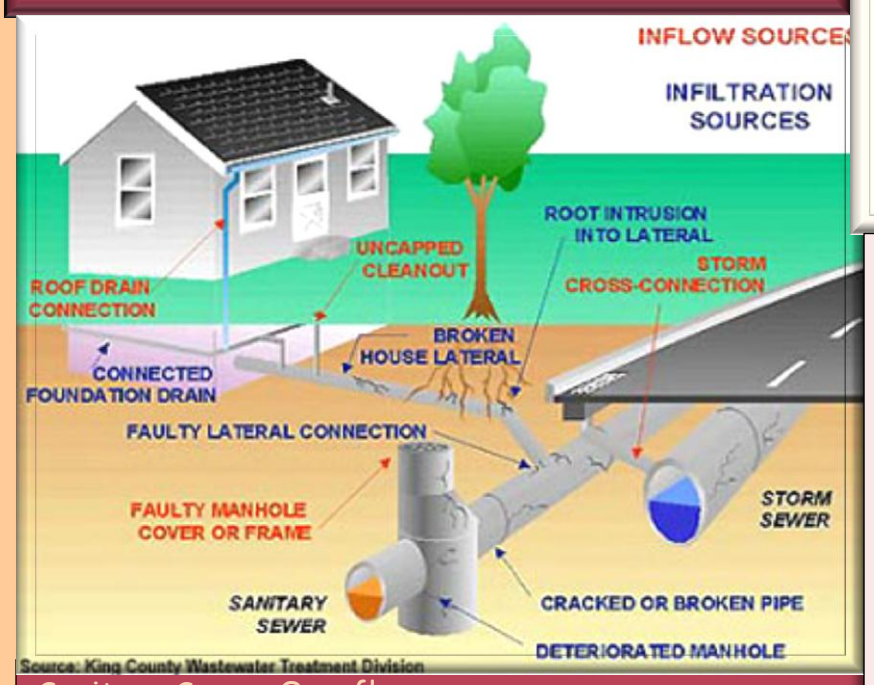
CSOs, SSOs and ILLICIT DISCHARGES

In SE Michigan, one of the most complex and persistent pollution issues being addressed is the introduction of sewage to our waters through combined sewer overflows (CSOs), Sanitary Sewer Overflow (SSOs) malfunctioning septic systems and illicit or illegal/inappropriate connections to the storm system.

What is a Combined Sewer Overflow

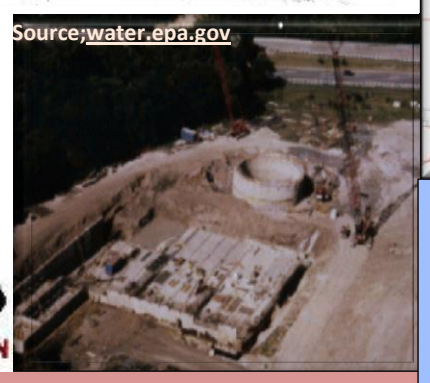
CSOs have been a source of significant frustration and expense in SE Michigan. The system was originally designed to effectively carry wet weather runoff along with waste water through a series of pipes of combined flows to the wastewater treatment plant (WWTP). When functioning within capacity, this provided a mechanism for stormwater to be treated prior to discharge along with the sewage. When precipitation is great enough that the combined flows exceed pipe capacity, the overflow exits the main pipe at interceptors, which conveys the mixture to discharge directly to waterways without treatment. The large percentage of development within the watersheds in SE Michigan stresses these systems resulting in the regular occurrence of CSOs. Although it is now illegal to utilize this method in modern construction, identifying and eliminating all such connections is complex and expensive to accomplish. For detailed information please visit
http://www.rougeriver.com/cso/projects.html



Sanitary Sewer Overflows

Sanitary Sewer Overflows (SSOs) are similar in the end of line effect for water quality issues; however the cause of these overflows is typically a result of aging infrastructure or electrical/mechanical failures. Wet weather flows find their way into sewer lines via broken lines from any number of causes, or lift station failures. This causes backflows and basement flooding as well as discharge to local waterways. This problem is equally difficult to both diagnose and treat. For more information on this issue, please visit the SEMCOG website
http://www.semcog.org/SewerInfrastructure.aspx and review this EPA document
http://www.epa.gov/safewater/sourcewater/pubs/fs_swpp_ssocso.pdf.

ROUGE RIVER RAP
REMEDIAL ACTION PLAN

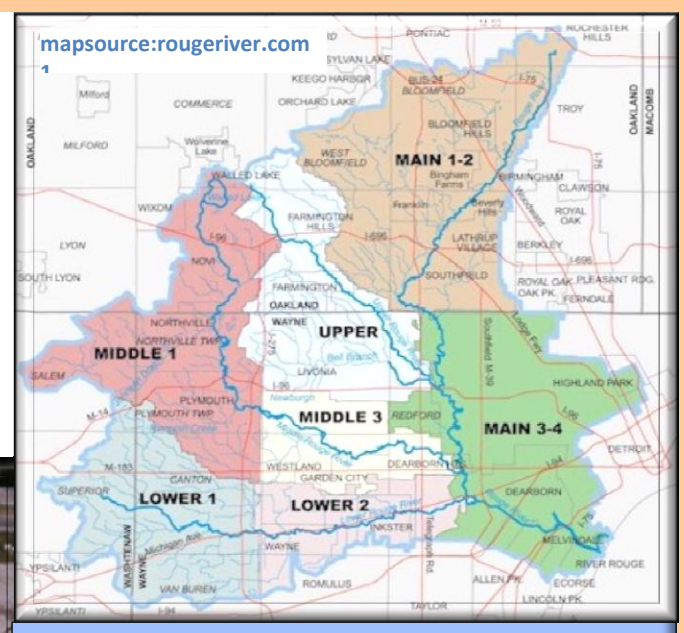

Source;water.epa.gov

The Rouge River Rap is NOT the latest Eminem Hit, although it would be a great way to increase notoriety to an important issue. An RAP is an Action Plan developed to Remediate (clean up)a section or body of water that has been identified as an AOC (Area of Concern)by the EPA and restore all beneficial uses identified for the river under study. To learn more go to

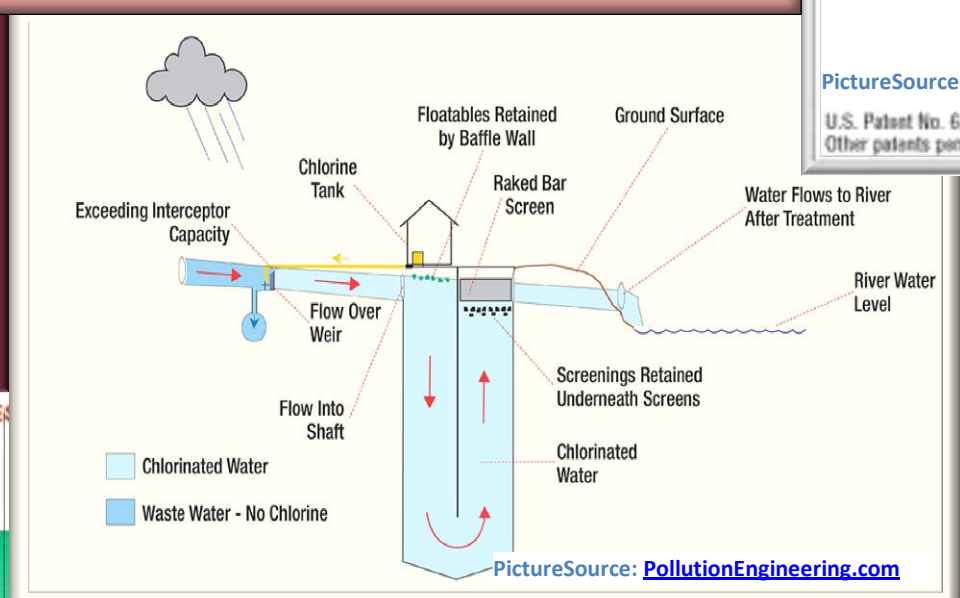
http://www.epa.gov/glnpo/aoc/rougriv.html

http://www.epa.gov/glnpo/aoc/rougriv/2004_Rouge-River-RAP-Revision.pdf
http://www.glc.org/spac/pdf/rapupdates/Final%20Rouge%20RAP%20Update.pdf

http://www.glc.org/spac/rapdocs.html



Serious issues require innovation to solve, and the Rouge Project is no stranger to new and improved designs. Under the Moniker "Rouge River Wet Weather Demonstration Project", several retention basins have been planned throughout the watershed and are in various stages of completion. Want details? Visit;
http://www.rougeriver.com/pdfs/cso/cso-18.pdf



Prior to 1990, more than 30 Billion gallons of raw sewage was collectively discharged every year into the Rouge River and neighboring Watersheds. Once the over 400 wastewater treatment facilities had reached compliance in the mid-80s with the new Clean Water Act Rules issued in 1972, focus shifted to what were identified as "wet weather discharges". As a result, A Remedial Action Plan was developed (RAP) to assess possible solutions, and in 1988 work began. Efforts focused on eliminating and/or treating the overflow, and given the quantities of flow, this would be a significant effort. Nothing like this had ever been done on this scale before and municipalities in the Rouge River watershed would serve in a pilot program to demonstrate the effectiveness of the various control efforts. Projects totaling over $1billion, of a projected $2.4 billion have been spent so far to address this, with the remaining projects differing in their stages of development and completion. When finished, it is anticipated that there will be a total reduction by 85% in combined sewer overflows. To learn more about this ambition project, please visit;
http://www.pollutionengineering.com/Articles/Feature_Article/5ca63838bffd9010VgnVCM100000f932a8c0____

An illicit discharge quite simply any discharge into a municipal separate storm sewer system that is not composed entirely of storm water, that is not from firefighting activities, or is not permitted under the NPDES (National Pollutant Discharge Elimination System) program. The EPA and DEQ require that all permitees systematically identify and eliminate all such connections to and from its storm water infrastructure. This includes, but is not limited to discharges from sanitary sewers such as CSOs and SSOs. In order to comply with this very important aspect of the school system permits and management plans, all sinks, toilets, drains, and sumps have been dye traced to verify they discharge to the sanitary sewer. Any illicit connections identified will be eliminated.

A project this large needs serious organization. According to the South East Michigan council of governments, the cost for replacing aging sewerage infrastructure often exceeds available funding. Although there is status in being a pilot project for the entire nation, the drawback is that no matter how impressive engineering designs are, experience provides insight, and insight can save big bucks. As cities across the country attempt to address the unique circumstances surrounding their CSO issues, wisdom has blossomed to incorporate "green infrastructure" as a viable means to save millions of dollars. Michigan now has the opportunity as we restructure, to increase the presence of these practices. We need to increase the awareness of our community leaders and legislators that these practices are not only beautiful, but their function is beneficial on multiple levels. And since studies have demonstrated repeatedly in varying circumstances that they are not just economically feasible but significantly more cost effective, "green industry" could expand to be a viable industry for job creation. http://www.stormh2o.com/may-2011/economical-cso-management.aspx