



**Clean Michigan Initiative
Clean Water Fund Grant**
2001-0027



City of Battle Creek

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City of Battle Creek Illicit Discharge Elimination

April 2002 through September 2005

The City of Battle Creek officially began its Illicit Discharge Elimination Program in April of 2002 investigating 209 known storm water outfalls to 18 different waterbodies. Through the course of the investigation 13 storm water outfalls were found to not be outfalls, and an additional 123 outfalls were identified and investigated. Out of the 320 identified City outfalls, six illicit connections and three significant sources of sediment were deemed as illicit discharges. The sources of the illicit connections include sanitary system inflow, a commercial nursery irrigation facility and a quick oil change facility. The sources of the sediment discharges include street dirt, infiltration of soil from broken drainage pipes and animal activities.

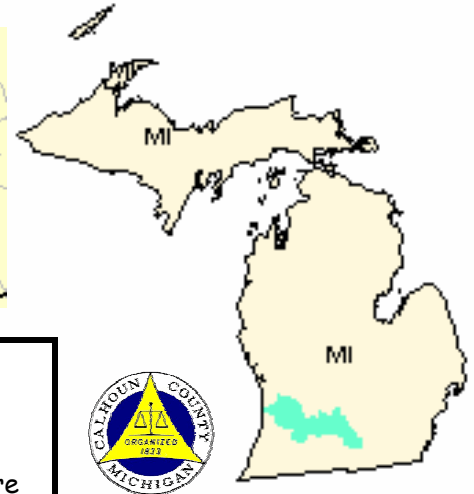
The City also partnered with the Calhoun County Drain Commission (CCDC) and the Calhoun County Community Development (CCCD) to investigate storm sewer outfalls in the county. A total of 72 outfalls were investigated throughout the county, with only one illicit discharge identified. Additionally, the City worked with the CCCD and the CCDC to review IDEP public reporting system options and developed a system to be instituted regionally.



Grant Amount: \$228,000

Match Funds: \$132,900

Total Amount: \$360,900



Project Activities:



- Developed a Quality Assurance Project Plan to ensure accurate and efficient monitoring procedures were used.
- Developed a standard Illicit Discharge Elimination Program field manual.
- Identified 6 illicit connections and 3 illicit sediment discharges; removed 5 as of the date of this fact sheet. 4 still require additional investigation.
- Created GIS Maps of all outfalls identified in the City of Battle Creek, CCDC, and CCCD drainage areas.

Annual Pollutant Load Reductions:

- Total Solids - 5,120 lbs.
- Total Organic Carbon - 1,151 lbs.
- Nitrogen - 283 lbs.
- Phosphorous - 57 lbs.
- BOD (5-Day) - 1,564 lbs.

Calhoun County Project Data:

- Investigated 22 outfalls for CCDC; 1 outfall was found with an illicit connection; efforts are being made to remove this pollutant source.
- Investigated 50 outfalls for CCCD; no outfalls were found to have illicit connections.



Partners involved:

- City of Battle Creek
- Calhoun County Drain Commission
- Calhoun County Community Development

Engineering Consultant:

- Tetra Tech





Visual observations were a useful tool in tracking illicit discharges; as seen with this sediment discharge (left) and the milky white sheen film (right) on the surface of the water. Additionally, the pictures below illustrate trash/debris (left) and algae (right) problems which led the field team to track this outfall upstream and confirm the presence of an illicit connection.



Storm and sanitary systems in the same manhole; can lead to a mixing problem with an overload in either drainage system.



Dye testing was used as a method to confirm illicit connections.