State Notes
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Macomb County Water Quality Monitoring Project
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Lake St. Clair is the final destination of the watersheds of the St. Clair River and the Clinton River. Storm water carrying urban, agricultural, and industrial run-off flows through drains and water courses and into the lake. Many industrial facilities dump their wastewater directly into the lake. The St. Clair and Clinton Rivers and their tributaries flow to Lake St. Clair, bringing pollution related directly or indirectly to human activity on inland lakes and in suburban areas. Illegal dumping, illicit connections, and sanitary and combined sewer overflows also have contributed to the diminished water quality of Lake St. Clair.

The frequency, volume, and severity of these conditions, the fast growth of the urban areas near the lake, and the potential economic impact on the area from both a commercial and recreational perspective have contributed to increasing alarm regarding the long-term condition of Lake St. Clair. In addition, the international border and the location of Lake St. Clair as a connecting body between two Great Lakes mean that its pollutants have the added potential of threatening a much greater area than just the lake.

As a result of the growing concern, in 1997, the Macomb County Board of Commissioners established the Blue Ribbon Commission on Lake St. Clair. The final Report and Recommendations of the Blue Ribbon Commission called for action in four areas: monitoring, education, volunteer efforts, and regulation and enforcement. Since the St. Clair and Clinton Rivers flow through multiple counties before reaching Lake St. Clair, the Commission recommended a watershed approach to addressing the environmental concerns, rather than taking action on a county-by-county basis. The report identified the watersheds of the Clinton and St. Clair Rivers as having a direct impact on Lake St. Clair. The four counties primarily affected are Macomb, Oakland, St. Clair, and Wayne.

To support the monitoring recommendations made by the Blue Ribbon Commission, the State appropriated $2,500,000 for a water quality monitoring grant in the Department of Environmental Quality (DEQ) fiscal year 2002-03 budget. The appropriation was designated for the establishment and operation of a comprehensive monitoring program to protect and manage the environmental quality of the St. Clair River, Lake St. Clair, and the Clinton River watershed. Funding was provided from the Cleanup and Redevelopment Fund, which is established in statute for cleanup activities pursuant to Part 201 (Environmental Remediation) of the Natural Resources and Environmental Protection Act, MCL 324.20101 to 324.20142. Use of this Fund is generally limited to State cleanup sites and other sites identified by the DEQ on a project priority list and listed in the annual appropriation act for the DEQ.

Awarding the Grant

In August 2003, the State Administrative Board approved a three year grant to the Macomb County Health Department (MCHD) for the entire appropriated amount of $2,500,000 for the comprehensive water quality monitoring program. Since the grant was approved, the appropriation will not lapse and expenditures will occur on a reimbursement basis with quarterly reports, according to the provisions of the grant agreement. The budget for the project

dedicates 75% of the funding to contractual services for sampling, testing, and data analysis. The balance of the funds will support MCHD staff, supplies, equipment, and travel expenses. The watershed approach recommended by the Blue Ribbon Commission is reflected in the contract in two ways. First, the work plan was developed and supported by local units of government in Macomb, Oakland, St. Clair, and Wayne Counties and, second, the sampling sites are located in all four counties.

To continue the involvement of many partners, the MCHD plans to establish Advisory and Executive Committees with appointees from local units of government and other interested parties in the watershed area. The Advisory Committee will assist and advise on technical aspects of the project, including the placement of sampling sites and the development of sampling and testing protocol. In addition to representatives from local public works and drain offices, the Advisory Committee will have individuals from State universities and the environmental community. The Executive Committee will be responsible for policy issues and will review all proposals and bids from potential contractors. Since the grant was awarded to the MCHD, it will serve as the fiduciary agent and will be the entity filing with the State for reimbursement of expenses.

All water quality monitoring for this project will be conducted during the three years of the grant and supported with the State funds. Using local funds, the county governments involved in this project currently conduct water testing at local beaches. The results of the locally supported beach testing will be incorporated with the data generated from the activities under this grant.

Monitoring and Sampling

The report of the Blue Ribbon Commission identified a number of features for the monitoring program, and the approved grant agreement includes many of them. The goal is to determine the biological, chemical, hydrological, and physical conditions of Lake St. Clair. The technical monitoring activities supported by the State funds include continuous, automatic, and grab sampling in dry and wet weather, sediment and vegetation sampling in depositional zones and inland lakes, flow and rainfall monitoring, bacterial source tracking, long-term toxic monitoring, and analysis of the results. Monitoring and sampling activities are planned from March through October for two years. Sampling will not occur during the winter months because the inland lakes, rivers, and much of Lake St. Clair are frozen during that time. The MCHD will contract for collection of the samples according to protocol established by the Advisory Committee and the contracted parties will be responsible for sending the samples for laboratory testing.

The sampling and monitoring sites are identified in Macomb, Oakland, St. Clair, and Wayne Counties. Grab sampling sites will be located along the St. Clair River near intersections with Mill Creek, the Black River, and the Belle River, and in Riley and Berlin Townships. Clinton River sampling sites will be located at connections to the Pine River, Stony Creek, and Paint Creek, and along the main, middle, and north branches of the Clinton River in Oakland and Clinton Townships. Sediment and biological testing will be conducted at inland lakes and Lake St. Clair. The inland lakes of Lake Angelus, Lake Orion, Sylvan Lake, and Lakeville Lake are identified in the project plan. Test sites are planned in Lake St. Clair at the Clinton River and its spillway, Milk Creek, Crapeau Creek, Hetchler Relief Drain, and Irwin Branch Relief Drain.

The sites identified on the lake border its northwest shore and the other sites are positioned on water courses that flow directly to that shoreline due to watershed drainage patterns.

In addition to technical monitoring activities, the funding will allow for the merger of data with other projects, posting of the data on a website, and intermittent presentation of data and analysis to the environmental community, governmental entities, and the public. The results of the monitoring will be incorporated into Geographic Information Systems. The availability and presentation of the data and analysis will be determined by the Advisory and Executive Committees. The approved work plan requires the creation of a website for posting data and the results must be accessible to the general public, as well as scientific and technical parties.

Conclusion

The comprehensive water quality monitoring project described in this article is a beginning step toward addressing the environmental concerns of Lake St. Clair and its feeder watersheds. The grant supports only monitoring activities. Analysis of the data is expected to reveal the steps necessary to improve the water quality of the studied area and prevent future deterioration. Once the analysis and results are completed, the local units of government and interested parties will begin the search for funding to implement the recommended remediation strategies.