

PORTAGE ARCADIA CREEKS CLEAN MICHIGAN INITIATIVE (CMI) IMPLEMENTATION PROJECT

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Project Costs: **Grant Total: \$445,148; Local Match: \$150,422; (K&A: \$84,449)**

Project Completion: **2005-2008**

A Clean Michigan Initiative Grant from the Michigan Department of Environmental Quality is providing state funding for construction to restore portions of Arcadia Creek as it runs through the Kalamazoo Christian High School complex at Drake Road and Stadium Drive. Funding is also being provided to repair eroded streambanks and reduce stormwater runoff into Portage Creek at the City of Kalamazoo's Milham Park at Kilgore Road and Lovers Lane. This project is part of a larger effort to implement priority actions listed in a Watershed Management Plan developed for both Portage Creek and Arcadia Creeks in the Greater Kalamazoo area.

As the technical consultant for the project, KIESER & ASSOCIATES, LLC (K&A) led efforts involving all watershed partners working with the local non-profit, The Forum of Greater Kalamazoo, to develop a management plan in 2004 for the largely urbanized, 43,723-acre Portage and Arcadia Creek watershed (see www.kalamazooriver.net). Grant funding is being used to implement watershed management efforts to address an array of water quality issues related to urban impacts on these streams. Impacts include flashy stream flows during rain storms that destroy stream habitat and erode streambanks, loss of overhanging stream-side vegetation that would otherwise stabilize streambanks and shade the creek, and loss of wetlands that normally store water during storms and provide valuable water quality and habitat benefits.

The Arcadia Creek improvements at the Kalamazoo Christian High School site were completed in late summer 2007 and have resulted in: a) 2,300 feet of restored and stabilized streambanks (using more natural "bioengineering" techniques); b) less runoff for parking lots reaching the creek; c) new streamside vegetation with deeply rooted native wetland and prairie species (versus a manicured lawn); and, d) reconnection to floodplains and wetlands. This project has improved overall stream habitat conditions for one-quarter of a mile of Arcadia Creek. It has also provided some flood relief for downstream areas (net gain of 1.33 ac-ft to the 100-year floodplain), reduction of sediment erosion to downstream areas by 150 tons annually, reduction of phosphorus loading to the Kalamazoo River by 154 pounds per year and protection of high school athletic facilities from damage by flooding and bank erosion. Lastly, these efforts now serve to provide valuable watershed educational opportunities for students and the general public.

The Portage Creek Site is scheduled for construction during late summer 2008. This site involves a highly manicured riparian area subject to pedestrian and waterfowl foot-traffic suppressing vegetation and contributing to increasing erosion along the streambanks. The estimated annual contribution of streambank sediment loading to Portage Creek through this stretch is 57 tons, while the annual phosphorus load is 59 lbs (K&A, 2006). In addition, stormwater runoff from approximately 10 acres of impervious parking surfaces at the adjacent Loy Norrix High School will be redirected from a 27-inch storm sewer (otherwise directed into Portage Creek) into three on-site bioretention cells, also constructed with implementation funds. Estimated annual load reductions for these impervious parking areas amounts to approximately 0.6 tons of sediment and 7 lbs of total phosphorus.

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Project partners include numerous community group representatives, the City of Kalamazoo, Western Michigan University, Kalamazoo Christian Schools, The Forum, the Michigan Department of Environmental Quality and the design firm K&A. The Forum of Greater Kalamazoo is the grant recipient. Since 1983, the Forum's vision has focused on increasing the capacity of communities to identify their critical issues, create consensus-based community change and monitor the results of such change efforts. The mission of the Forum is to improve the quality of life for all residents of the community.



BEFORE



DURING



AFTER