

WMU ARCADIA CREEK STORMWATER IMPROVEMENTS KALAMAZOO, MI



A Clean Michigan Initiative (CMI) Grant from the Michigan Department of Environmental Quality (MDEQ) provided \$379,252 in state funding to reduce nonpoint source stormwater runoff of pollutant loads previously discharging to Arcadia Creek as it initially passed through portions of Western Michigan University near Howard Street and Stadium Drive. The Forum of Greater Kalamazoo was the grant recipient, and Kieser & Associates, LLC (K&A) provided all technical design and consulting services. This project was part of a larger effort to implement priority Best Management Practices (BMPs) listed in a Watershed Management Plan developed for both Portage and Arcadia Creeks in the Greater Kalamazoo River Watershed.

This project served to improve overall stream habitat conditions for nearly one-quarter of a mile along Arcadia Creek and provided additional flood relief for downstream urban areas. These BMPs reduce sediment loading and further reduce phosphorus loading to the Kalamazoo River. They also protect WMU campus facilities from damage by flooding and bank erosion. Lastly, these efforts provide valuable watershed educational opportunities for both students and the general

public. K&A provided technical support through engineering plans and specifications, owner meetings and approvals, MDEQ engineering review submittals, MDEQ permit applications, competitive contractor bids, and construction oversight assistance.

Project benefits included:

- Stormwater treatment = 120 acre-feet/year
- Drainage area served = 102 acres
- Grassed swales = 395 ft.
- Sediment forebay = 0.35 acres
- Wet detention ponds (2) = 0.6 acres
- Reconnection of floodplains = 1.6 acres
- Increased floodplain capacity (9,500 cubic yards)
- Native seeding/vegetation = 3.5 acres
- Streambank erosion repairs = 180 ft.
- Riprap streambank protection = 268 ft.
- Permanent educational signs to describe BMPs
- Photodegradable erosion controls = 3.75 acres
- Reduction of 97 lbs. total phosphorus/year
- Reduction of 24 tons sediment/year

Construction occurred in late summer/fall 2011.

Contact:

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Project Costs:
\$91,575 (K&A)
\$379,252 (Total)

Project Duration:
2008 - 2011