

Floodplain Enhancement and Streambank Restoration Arcadia Creek, Kalamazoo, Michigan

Clean Michigan Initiative (CMI) Grant funding was provided for the restoration of Arcadia Creek as it passes through the Kalamazoo Christian High School complex at Howard Street and Stadium Drive. Impacts to Arcadia Creek included flashy stream flows during rain storms that often damage stream habitat and erode streambanks. Additional concerns included 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. These concerns were cited within the

approved WMP for Portage and Arcadia Creeks.



Arcadia Creek goals at the Kalamazoo Christian High School site included: a) 2,300 feet of restored and stabilized streambanks (using more natural “bioengineering” techniques); b) less runoff from parking lots; c) riparian vegetation with deeply rooted native wetland and prairie species (versus a manicured lawn); and, d) reconnection to floodplains and wetlands. This project improved overall stream habitat conditions for one-quarter of a mile of Arcadia Creek. It also provided some flood relief for downstream areas, and reduced sediment and nutrient loading into Arcadia Creek.

Lastly, these efforts provided valuable watershed educational opportunities for students and the general public. K&A provided technical support through limited geomorphology assessment, 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:

- Native riparian buffer vegetation = 2.5 acres
- Streambank stabilization/bioengineering = 2,300 ft.
- Riprap toe protection measures = 115 ft.
- Supplemental vegetation = 3,500 native plants
- Permanent educational signs (2) to describe BMP benefits
- Reduction of resident nuisance waterfowl
- Use of photodegradable erosion controls
- Temporary fencing to protect new vegetation
- Reduction of 154 lbs. total phosphorus/year
- Reduction of 150 tons sediment/year
- Reduction of 308 lbs. total nitrogen/year

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Project Costs:
\$37,550 (K&A)
\$122,246 (Const.)

Project Duration:
2007-2008