

GENERAL INFORMATION

Project Name: Critical Erosion Site Mitigation Project (CMI Grant Project)
Site Name: City of Kalamazoo Water Reclamation Plant (Site #10)
Grant Administrator: Kathy Buckham, Kalamazoo Conservation District, (269) 327-0696
Engineer: Brian Boyer, E.I.T., KIESER & ASSOCIATES, (269) 344-7117
Contractor: Mr. Earl Modert, Modert Excavating, (517) 369-9223

Actual Project Costs:	Engineering/Permitting (K&A)	\$ 3,500.00
	Local Match (City)	\$ 21,497.75
	<u>Construction (Modert)</u>	<u>\$ 31,172.60</u>
	Total=	\$ 56,170.35

PROJECT STATEMENT

Erosion and sedimentation to Michigan lakes and streams threaten and impair water quality and aquatic ecosystem health. Over 900 feet of the Kalamazoo Water Reclamation Plant (site #10) streambank was exposed and eroding along the western bank of the Kalamazoo River. The objective of the Critical Erosion Site Mitigation Project was to eliminate excess sedimentation and phosphorus loading to the Kalamazoo River via soil erosion. Streambank restoration techniques for this site included bank reshaping, bioengineering such as wetland seed mixes and live plugs, live willow and dogwood stakes, geotextile materials and rip rap toe protection. These items will serve as long-term erosion controls and stabilization mechanisms. A 15-foot wide upland vegetative buffer, consisting of native prairie species, will also be maintained to enhance the existing riparian corridor.

BASIS OF DESIGN

The existing streambanks of the WRP have been maintained as a traditional landscaped lawn by the City of Kalamazoo to accommodate access to outfalls and other structures. Soils along these streambanks are generally comprised of loamy sand with bulk density values ranging from 1.02 to 1.63 grams/cm³. Based on soil sampling and physical measurements conducted by K&A on the eroding streambanks, the annual soil loss and nutrient loading estimates for this site (prior to construction) were as follows:

Sediment	= 29.5 tons
Phosphorus	= 74.5 lbs
Nitrogen	= 50.2 lbs

CONSTRUCTION

All applicable permits were obtained prior to construction. Site drawings related to streambank restoration activities were prepared for the City of Kalamazoo by KIESER & ASSOCIATES (K&A). All drawings were reviewed and approved by the City Engineer and the MDEQ. Construction began on September 9, 2003 by Modert Excavating and lasted approximately 2 ½ weeks. To assist with temporary soil erosion controls during construction, a silt curtain was installed by the contractor within the water near the toe of the new streambank slopes. Additionally, photodegradable mulch netting erosion blankets were installed for temporary soil stabilization and seed protection until all vegetation becomes fully established. K&A further assisted the City of Kalamazoo with project coordination, construction oversight, and volunteer planting. Pre-construction photos and post-construction photos are provided in Attachment A. The City of Kalamazoo agreed to follow the recommended maintenance practices set forth by K&A to ensure the long-term success of these BMPs.

ATTACHMENT A

Before and After Photos

BEFORE



BEFORE



AFTER



AFTER



CMI Critical Erosion Site Mitigation Project, Site #10, Kalamazoo Water Reclamation Plant.

BEFORE



BEFORE



AFTER



AFTER



CMI Critical Erosion Site Mitigation Project, Site #10, Kalamazoo Water Reclamation Plant.

BEFORE



AFTER



CMI Critical Erosion Site Mitigation Project, Site #10, Kalamazoo Water Reclamation Plant.