

**Portage and Arcadia Creeks Watershed Transition/Implementation**  
**Project Tracking Code: 2003-0028**

**Table 5.1. Projects conducted in the Portage-Arcadia Watershed since Version I WMP (Task 1.1.5)**

Storm water runoff and pollutant loading in the Version I WMP was based on a Year 2002 baseline. Projects conducted since 2002 are listed below. Associated reductions (or are estimated to result in reductions) in runoff and pollutant loading are identified. Other types of improvements to the creeks, such as habitat improvement, are also noted. Additional information on these projects can be found on the website at <http://www.kalamazooriver.net/pa319new/projects.htm>.

Project	Location	Entity	Improvements	Annual Load Reduction Estimate	Additional Information	Quantification Method	Stretch Rescore
<b>Arcadia Creek</b>							
No-mow zone, 2003	WMU Power Plant downstream end, Stretch 12	WMU	Habitat, water shading, decreased streambank erosion		704' x 1.5' x 2 sides, moderate with severe areas by bridge prior to no mow zone		From 20.5 to 23.5
Goldsworth Valley Pond, No-mow zone, native plantings, carp removal, increase of pond storage, 2003	WMU, Stretch 13 and GVP area	WMU	Decreased phosphorus re-suspension, decreased shoreline erosion, new habitat, increased stormwater detention, less flooding at Waldo Stadium	Stormwater: TSS: 11.4 tons from before to shortly after (prior to weir changes) TP reductions not yet seen	September 1, 2004 observations, K&A report to WMU	Outflow monitoring	From 19 to 23
No mow zone K-College Park, 2004	Downstream end of Stretch 14	Kalamazoo College	Shading water, revegetation over eroding streambanks	Streambanks TSS: 40 tons; TP: 41.1 lb	80 tons/year of TSS loading estimated from streambank erosion in 2002, 40 tons/year from erosion estimated in 2004, reduction is difference in loading	Lateral recession rate, observations in 2002 and 2004	From 6.5 to 11

Replacement of rental homes with park, 2004	West Main and Cathrine Street, Stretch 15	Kalamazoo College	Reduction in imperviousness	Stormwater: TSS: 0.51 tons TP: 1.7 lb Runoff: 2.7 acre-feet	Assumed land was 2 acres and changed from high density residential to urban open. If fertilizers used, nutrients may increase.	EMC's, MI Trading Rules	No change
Arcadia Creek Festival Place, 2004	North of downtown pond, Stretch 16	DKI, COK	Change from asphalt to brick and plantings, some reduction in imperviousness, no longer use of land for parking lot decreases oils/metals in runoff, two aqua-swirl devices installed in storm sewer	Stormwater: Metals: 1.7 lb Pb, 0.52 lb Cu, 4.3 lb Zn, 0.03 lb Cd TSS: 0.51 tons	Assume metals runoff drop to zero, used commercial EMCs, land size of 2 acres, Assume Aqua-swirl devices reduce TSS loading by 85% of inflow, based on testing literature.	EMC's, MI Trading Rules	No change
Arcadia Pond Annual Dredging	Pond, Stretch 16	DKI	Accumulated sediments from stormwater runoff removed from system	Sediment removal: TSS: 530 tons, TP: 215 lb, values not included in total below	Based on 2002 reductions calculated by K&A, may not be representative of each dredging event	Quantification of volume removed, assumed density, TP concentrations measured	No change
<b>Total Arcadia Creek</b>				<b>TSS: 52 tons TP: 46.8 lb</b>			
<b>Axtell Creek</b>							
Maple School Rain Gardens, 2003	Stretch 2	KNC, Maple School	Diverted storm water from 23,000 square feet of roof top to rain garden	Stormwater: TSS: 0.11 tons TP: 0.5 lb (wet and dry deposition) Runoff: 1.6 acre-feet	Calculated Oct, 2003 for MDEQ reporting	EMC's, MI Trading Rules	From 16 to 19
Native riparian plantings, 2002	Beds on each side of Howard Street,	Wild Ones, Stretch 2 with Maple School	Shading water, habitat, prevention of grass clippings in				See above

	upstream end Stretch 2		water from former mowing, removal of invasives for natives				
No-mow zone in historic wetland, protective fencing, flagging of vegetation, 2004	Corner of Howard and Crosstown, Maple School ball fields, Stretch 2	Maple School, Axtell Creek Subcommittee	Regeneration of native wetland vegetation, potential storm water storage, habitat enhancement	Will see load reduction if stormwater is redirected into wetland area			See above
No-mow zone, 2002	Stretch 3, east bank and Axtell Creek Park	COK, Axtell Creek Subcommittee	Shading water, habitat, prevention of grass clippings in water from former mowing	Streambank: TSS: 4.8 tons; TP: 4.9 lb	Based on one side only 870' x 1', moderate erosion before, then only small portion by law office after	Lateral recession rate, based on 2002 and 2004 field observations	From 11 to 22
Shoreline shaping, native plantings, no-mow zone, three native plant beds, 2004	South Pond, Stretch 5	COK, Greenscapes	Shading water, habitat, prevention of grass clippings in water from former mowing, prevention of former shoreline sediment loading	Streambank: TSS: 7.6 tons; TP: 7.8 lb	assumed no load following full establishment of vegetation and waterfowl exclusion	Lateral recession rate	From 1 to 4.5, still low due to upstream areas
<b>Total Axtell Creek</b>				<b>TSS: 12.5 tons TP: 13.2 lb</b>			
<b>Portage Creek</b>							
South Westnedge Storm Water Project, 2004	Stretch 7, intersection of Portage Creek and South Westnedge	COP	Storm water treatment for 29 acres of South Westnedge Drainage, stream bank repairs	Streambank: TSS: 37 tons TP 38.2 lb. Stormwater: TSS: 11 tons TP: 41 lb	Assumed 29 acres captured from major road runoff, wet detention removes 85% TSS and 45% TP	Streambank: lateral recession rate. Stormwater: EMCs, MI Trading Rules	From 11 to 26
Consolidated Drain Water Quality and Trailways Facility, 2002	Stretch 8, Garden Lane/Romence Road area	COP	Storm water treatment, decreased flashiness, habitat, recreation	Stormwater: TSS: 40 tons TP: 69 lb		Monitoring within treatment system, 2002	From 23 to 24 (water clarity)

<b>Total Portage Creek</b>				<b>TSS: 88 tons TP: 148.2 lb</b>			
<b>WATERSHED WIDE, as of October 2004</b>		COK	Stormwater treatments devices in catch basins and in-line as part of site plan review	Have number of devices (112), but no quantification of load reductions available			

COK-City of Kalamazoo  
 COP-City of Portage  
 DKI-Downtown Kalamazoo Incorporated  
 EMC-Event Mean Concentration  
 K&A-Kieser & Associates  
 KNC-Kalamazoo Nature Center  
 MDEQ-Michigan Department of Environmental Quality  
 TP-Total Phosphorus  
 TSS-Total Suspended Solids  
 WMU-Western Michigan University