

WMU GOLDSWORTH VALLEY ENHANCEMENTS PROJECT KALAMAZOO, MI



Western Michigan University has expanded the Goldsworth Valley Stormwater Detention Pond to provide increased stormwater treatment for 153 acres of campus in addition to making modifications to improve the aesthetics of this stormwater pond with assistance from O'Boyle Cowell Blalock & Associates and Kieser & Associates, LLC (K&A). The pond was originally constructed in the early 1960's and no maintenance removal of accumulated sediments had occurred since. Existing soft sediment thickness measurements were conducted by K&A at a total of 45 discreet locations throughout the pond. Based on the sediment mapping and measured soft sediment thickness data, a calculated volume of 5,309 yd³ was estimated for removal from the stormwater pond. Six representative sediment samples were collected for laboratory analyses. Metals concentrations above statewide default background levels were reported in all six samples preventing these samples from being placed elsewhere without restrictions. However, the synthetic precipitation leaching procedure (SPLP) results revealed that these metals would not leach at elevated concentrations into the groundwater. WMU has placed a deed restriction upon the on-site

sediment disposal location for land use restrictions preventing the future relocation of these materials.

Specific technical assistance provided by K&A included the following:

- Designed modifications to existing outfall structures
- Developed bioretention planting areas (locations, sizes and plant species)
- Provided conceptual designs for water quality improvements
- Conducted sediment thickness survey
- Collected bottom sediment samples
- Characterized and mapped thickness of bottom sediments to define dredging limits
- Coordinated chemical and physical analyses of sediments
- Prioritized proposed dredging work limits
- Identified recommended dredging volume
- Identified disposal/fill placement locations

Outcomes include:

- Removal of historic sediments (5,300 yd³)
- New diffused aeration system
- Additional bioretention (0.5 acres)
- New rain gardens (2)
- Outfall pre-treatment (7 outfalls)
- Outfall removal (3 outfalls)
- Invasive vegetation removal
- New Michigan native vegetation (1.7 acres)
- Increased treatment capacity (4.75 ac-ft)

Contact:

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Project Costs:
\$45,525 (K&A)

Project Duration:
Mar 2015 - Sep 2016