

MSU STORMWATER WETLANDS EAST LANSING, MI



Kieser & Associates, LLC (K&A) was retained by URS Corporation to provide engineering services for a stormwater project at Michigan State University's Parking Lot #89. Lot #89 is one of the largest commuter parking lots in the nation at 36 acres in size. This project incorporated three significant and interrelated elements:

- Reconfiguration and expansion of MSU Lot# 89 and CATA bus services,
- Effective stormwater management for all paved surfaces through in-line, first-time treatment systems, and
- Enhancement, renovation and expansion of the wetlands south of Mt. Hope Road to utilize additional treated water for the creation of added wildlife biodiversity and new habitats.

Stormwater runoff from the original commuter lot and adjacent MSU facilities flowed untreated to a county drain and then directly to the Red Cedar River. As part of MSU's commitment to improve on-campus management of stormwater, the university sought more appropriate methods to address stormwater management. Pretreatment of additional stormwater generated from portions of another 25-acre parcel, including portions of the MSU Pavilion Complex, were added during the design process.

Among the services provided by K&A were soils evaluation, hydraulic and vegetation analyses,

schematic design and engineering, hydrologic modeling, water quality monitoring, wetlands delineation, wetlands mitigation design, plantings recommendations and design and preparation of all required permits. The project was constructed in 2001 and provides for treatment of storm water from the parking lot before it is re-routed to formerly scrub wetlands and a little-used turf grass demonstration area now converted to a diverse wetland assemblage. Other elements for habitat diversity and wetlands enhancement included:

- 2.38 acres of created mitigation wetlands
- Created habitat structures for increased biodiversity
- Grassed swales running above and along the upper portion of the created wetlands
- Enhancement of several existing wet depressions to establish aquatic habitat diversity
- Use of existing uplands to create an "observation island" for educational purposes

The naturalized design of this system also provided components that support the third purpose of the project: research, outreach and education. This system provides a unique living laboratory to evaluate and demonstrate diverse stormwater treatment methods and innovative wetland renovation practices applicable to many parts of Michigan.

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Project Costs:

\$77,000 (K&A)
\$4.7M (Total)

Project Duration:

2001-2003