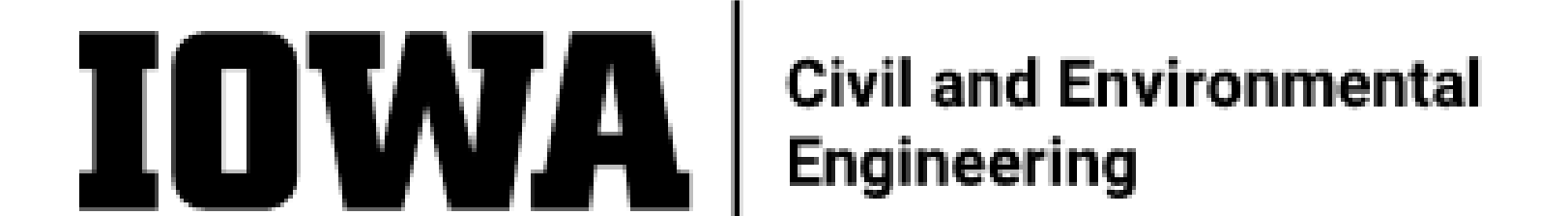




Monticello Wetland and Trail Design

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Site Layout

The City of Monticello and the Maquoketa River WMA requested improvements to existing wetlands/flood plains and trail systems for the two locations shown below in Figure 1. The sites are located northeast of Monticello's downtown area, bounded by Kitty Creek and the Maquoketa River.

Riverside Wetland Site

This site included a wetland needing redesign to improve its stormwater handling. The concrete conveyance channel will be converted to a native planting swale designed to slow and treat the outflow from the storm sewer. Figure 2 shows a planted swale similar to the design planned for this site.



Figure 2. Concrete conveyance channel to planted swale conversion plan.



Figure 1. Two sites for improvements in Monticello, IA.

12-Acre Site

This site included a floodplain and prairie redesigned to function as a meandering wetland to handle stormwater outflows from a detention pond and storm sewer. The pond needed an outlet designed to connect with the new wetland. Figure 3 illustrates a similar design after construction.



Figure 3. Example of a meandering wetland (Easter Lake, Des Moines).

Trail Improvements

Connecting improved areas to existing trails to the south and through town was a critical need. Existing trail at the riverside site will be removed to meet ADA standards. Sinkage issues around wetland areas are accounted for in design by including well-draining subbase and built-up berm trail; an example of this shown in Figure 4 below.



Figure 4. Trail showing exaggerated building-up berm structure.

Project Cost

The overall project cost is estimated at about \$450,000 as calculated using current pricing for similar products, services, and projects. The plan elements can be broken into phases at each site depending on the community's resources, timeline, and priorities. The RW site work is estimated at \$185,000 and the 12A site work is about \$260,000.

References

Iowa DOT – Section 12B-2. *Shared use path design*
Iowa Stormwater Management Manual – Chapters 3, 5, and 9
US EPA Stormwater Wet Pond and Wetland Management Guidebook
<https://www.bidx.com/ia/lettings>

Maintenance Plan

Both sites benefit from a maintenance plan that will promote efficiency of the wetland systems and integrity of the trails, as a major preliminary issue was neglect and poor management practices. This ensures the community may enjoy benefits for many years. The maintenance plan will include burn schedules, forebay dredging, and rip-rap catch cleanouts.



Figure 5. Maintenance crew discussing timber management practices.