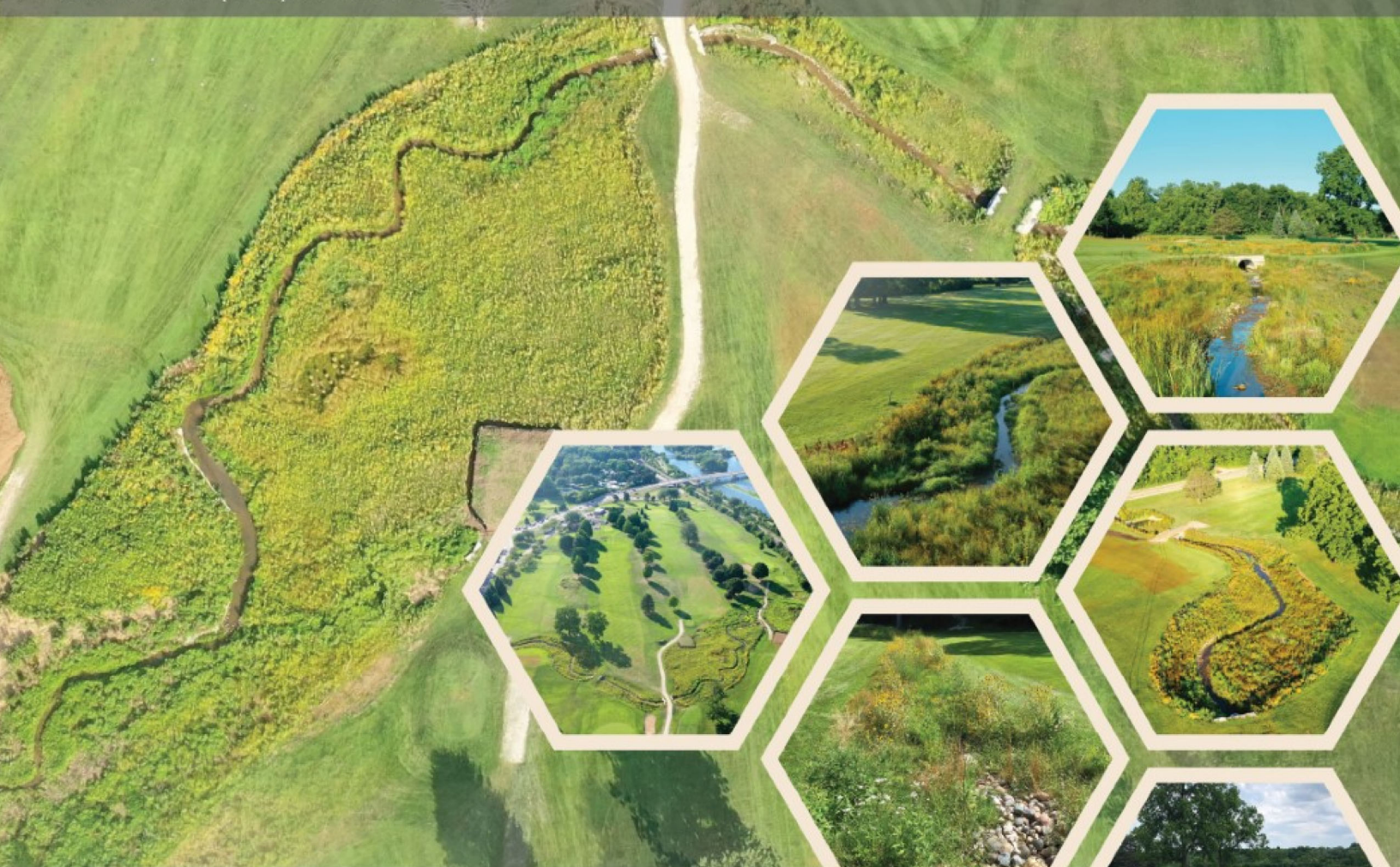


HURON HILLS GOLF COURSE STORMWATER IMPROVEMENTS

Ann Arbor, Michigan

The Washtenaw County Water Resources Commissioner's Office engaged a highly qualified team to assist in restoring stream sections and wetlands of Benz Creek on the City of Ann Arbor's Huron Hills Golf Course. The unique design addresses flooding problems on the course while increasing water quality, wetland habitat, and flood control. These improvements significantly reduce nutrient loading to the Huron River, where Benz Creek outlets. The project included bioretention cells, vegetative conveyance routes, 970 feet of meandering stream and wet meadows restoration, and native riparian vegetation. The stream was relocated and lengthened to mimic a natural, self-sustaining stream with pools and riffles and better connectivity to its floodplain areas over five holes. Bankfull benches were implemented to improve water quality while increasing wetland habitat. Floodplain wetlands with offline vernal pools were established to provide stormwater treatment. Bioretention wetlands were established on four holes to improve water quality. Failing and undersized culverts were replaced to address erosion and pinch point concerns.



THE PROJECT OUTCOMES INCLUDE:

- ≡ Creation of 280 feet of additional stream and:
 - » 335 feet of stone toe bank stabilization.
 - » 26 in-stream pools and riffles.
 - » Planting of native trees, shrubs, plugs and seeds.
- ≡ Improvement of water quality through:
 - » TSS reduction by over 33,000 lbs/yr.
 - » TP reduction by over 70 lbs/yr.
 - » Reduction of E. coli colonies by 52,000 trillion/yr.
- ≡ Creating an ecologically diverse and resilient natural habitat corridor.



ENTERING FIRM:
HUBBELL, ROTH & CLARK, INC.
BLOOMFIELD HILLS, MI



CLIENT:
WASHTENAW COUNTY WATER RESOURCES COMMISSIONER
EVAN N. PRATT, PE