Originally built in 1973, the City of Dubuque’s 5.6 mile levee system protects 1,100 acres of industrial, commercial and residential assets.


The project, located along the Mississippi River, includes 7,100 feet of floodwall, over 20,000 feet of earthen levee, a miter-gate closure into Dubuque Harbor, four pumping stations, and three primary flood detention ponds. The evaluation consisted of seepage and stability analysis of the earth embankment and floodwalls. Work included reviewing existing documents, record drawings, operation and maintenance manuals, and performing confirmatory test borings and completing engineering evaluations to support the City’s certification report submission to FEMA.

GEI’s team of geotechnical and structural engineers evaluated the stability of the water-retaining embankments and floodwalls for the entire levee system. Demonstration of adequate stability and seepage control for all project elements under the design flood is required by FEMA for levee accreditation under the National Flood Insurance Program (NFIP) regulations.

The City of Dubuque signed a two-year Provisional Accredited Levee agreement with FEMA, which was set to expire in May of 2011. Per this agreement, the City was required to submit documentation that the levee meets design criteria outlined in 44 CFR 65.10. The City submitted documentation to FEMA in May 2011, in advance of the deadline.

Key Elements
- Structural analysis of levee and floodwalls
- Seepage and stability analysis
- Engineering analysis to support certification report for FEMA Accreditation