



EXECUTIVE SUMMARY

Periodic Inspection Results for the Mississippi River - City of Muscatine - Muscatine Island Levee District, Iowa Local Flood Protection Project

The City of Muscatine - Muscatine Island Levee District Flood Protection Project is a federally authorized and non-federally operated and maintained urban flood protection project. The most recent improvements to City of Muscatine - Muscatine Island Levee District Flood Protection Project, constructed in the late 1990s, were a specifically authorized flood protection project by the U.S. Congress in the Water Resources Development Act of 1986, Public Law 99-662, 99th Congress. The flood protection along the right bank of the Mississippi River between River Mile 454.5 and approximately River Mile 442.0 is referred to as the main stem levee. After River Mile 442.0, a flank levee turns southwesterly up the north bank of Michael Creek and runs continuously along the bank until it ties into high ground. The latest improvements to the system of levees and floodwalls were constructed between 1996 and 2000.

The City of Muscatine - Muscatine Levee District Improvement Commission which consists of the City of Muscatine, the Muscatine Island Levee District, Louisa County Levee District No. 15, and the Muscatine-Louisa County Drainage District No.13 is responsible for operating and maintaining the flood protection system.

The five year Periodic Inspection of the City of Muscatine - Muscatine Island system occurred on May 20 and 27, 2010. The local sponsor shows an active response to operation and maintenance of the project; however, some deficiencies were noted and actions are required. The overall system rating recommended by the contractor who conducted the inspection was unacceptable based on the deficiencies identified in the report.

The Rock Island District received comments from the Sponsor in response to the draft Periodic Inspection Report. Those comments and responses were considered during the levee risk analysis used to determine the final inspection rating. Several deficiencies were determined to be temporary conditions allowing the rating of the system to be appropriately based on an engineering determination of risk.

The Rock Island District has determined that the existing departures from USACE standards identified during the Periodic Inspection result in an appropriate rating of the levee system as **Minimally Acceptable**. The Rock Island District rating supersedes the contractor's rating.

Issues that could impair the operation of the system and are in the most need of action:

- Unwanted vegetation is present within the vegetation-free zone of the levee system as defined by ETL 1110-2-571
- Insufficient sod cover with minor rutting was noted
- Encroachments by local land owners and residents that occur along the project and could impact response and may increase risk during a flood event
- Locations were present that have inconsistent slope grades than the asbuilt design.
- From Stations 651+50 to 665+50 and at Station 673+50, erosion at the riverside levee toe had steepened the lower portion of the slope and will continue to erode the levee toe if left unrepaired.
- Various locations with depressions and rutting on the levee crown and slopes.



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- Some instances of small diameter animal burrowing activity within the levee prism.
- Culverts/pipes that penetrate the system have not been video or visually inspected within the past five years.
- Relief wells have not had annual maintenance or pump testing within the past five years.
- There was vegetation and obstructions at some interior drainage features.
- An unapproved flap gate/stoplog structure installed at Station 315+00.
- The Michael Creek Pump Station has several maintenance and safety issues .

The next annual Inspection will be scheduled after October 2011, with periodic inspections currently scheduled every five years.