



University of Southern Mississippi

Integrated Visual Application of the Rapid Levee Condition Assessment Model:

A Tool for Water Resource Infrastructure Protection



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Prevent, Protect, Respond, Recover

Homeland Security Challenge:

One of the representative technology needs of the DHS Science & Technology Directorate's Infrastructure Protection Integrated Product Team is: *to provide early warning capabilities for early detection and notice of potential levee failures* (DHS 2009). The United States has over 100,000 miles of levees protecting cities, towns and property from damaging flood water. Many of these levees are aging and are in need of repair or replacement. Therefore, there is a need to develop a systematic approach to levee condition assessment that provides levee managers with advanced screening tools to rapidly identify levee sections that have a potential for failure; and to identify, classify, and prioritize levee vulnerabilities as well as reduce the cost relative to traditional approaches.

Research Project Solution:

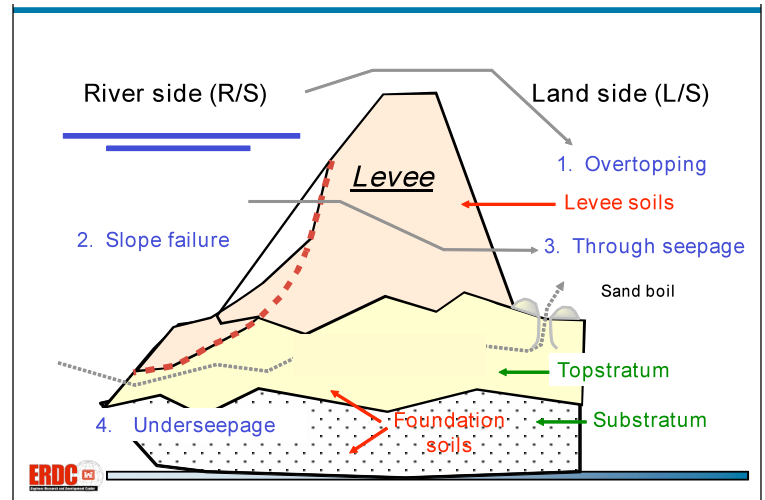
There is a national need for technically advanced levee assessment procedures and tools that can be easily and rapidly deployed in times of immediate need. Levee assessment procedures must be user-friendly and applicable to levees nationwide without restrictions to geographic location, levee geometry, or levee materials. Improved knowledge of levees conditions would significantly improve the allocation of resources to inspect, test, and repair those in most need. Rapid screening of levees is of utmost importance to locate subsurface area weaknesses before any adverse conditions arise and threaten levee stability, public safety and built infrastructures. This research and development effort will result in new methods and tools to help infrastructure managers prioritize their tasks.

National Implications:

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Levee Failure Mode Due to Site Conditions - Insufficient Set-back and/or Quick Drawdown



Levee Failure Modes and Levee Materials

www.serri.org

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SERRI is managed by the Department of Energy's Oak Ridge National Laboratory for the U.S. Department of Homeland Security