



Herbert Hoover Dike Rehabilitation Reach 1 Construction Reaches 2 and 3 Major Rehabilitation Report



**US Army Corps
of Engineers
Jacksonville District**

Briefing Purpose

- Provide a status update of the HHD rehabilitation project and a description of the upcoming Major Rehabilitation Report for Reaches 2 and 3

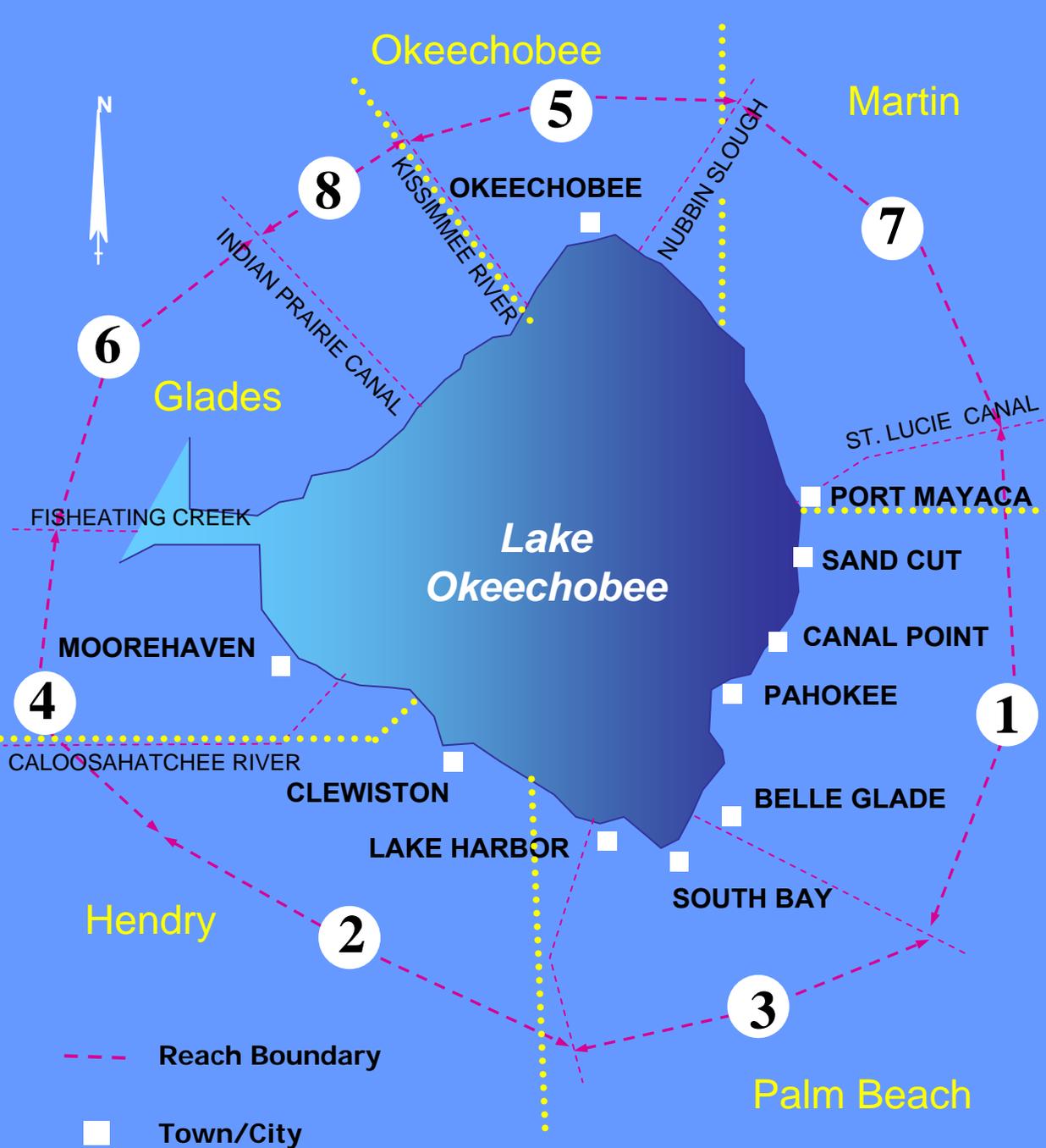
HHD Rehabilitation

- Project purpose: Rehabilitate HHD to authorized levels of flood protection
- Public safety is Corps' highest priority



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HHD Rehabilitation



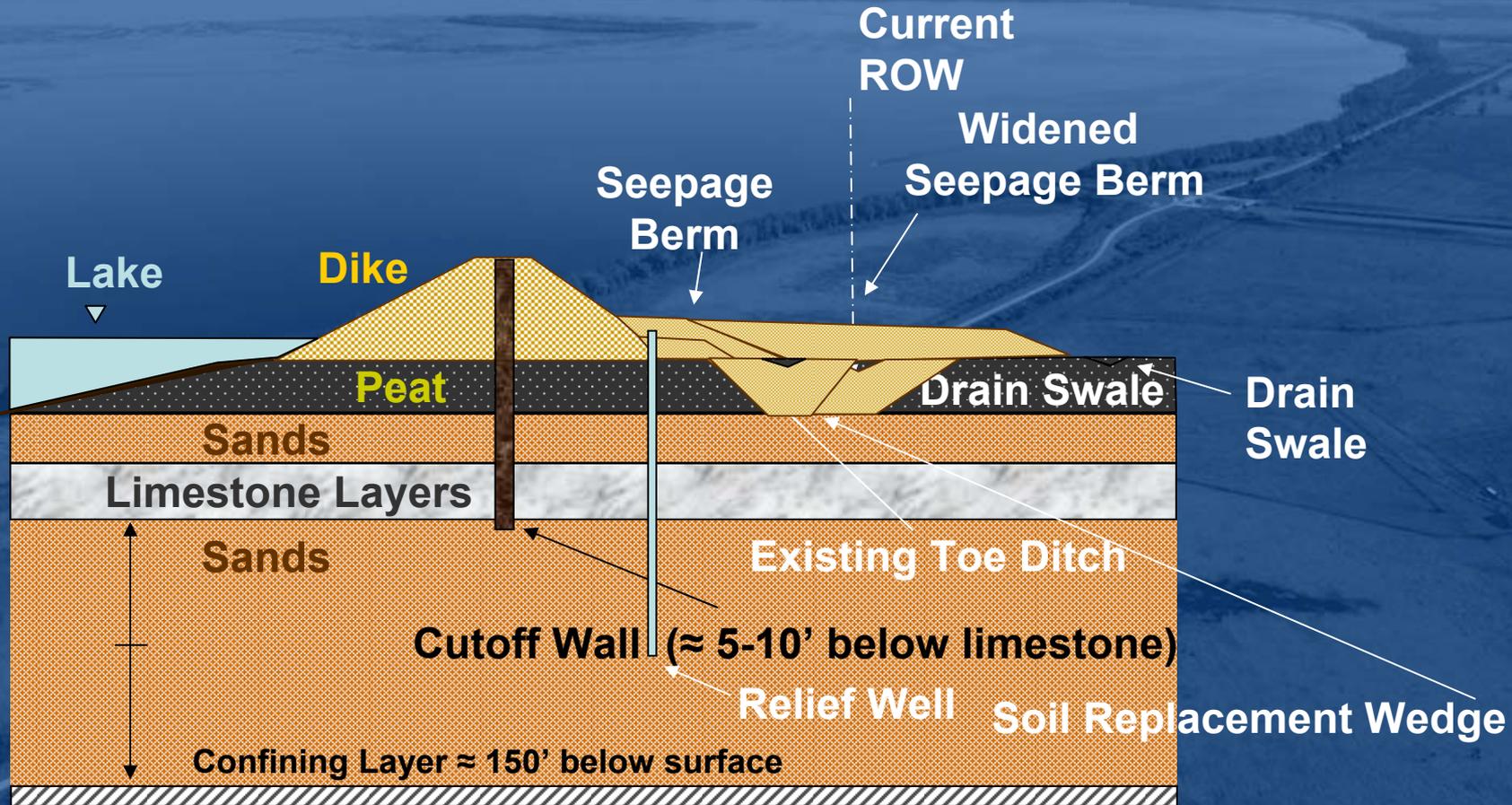
Reaches in miles

1. 22.4	2. 20.4
3. 6.7	4. 15.7
5. 14.5	6. 28.0
7. 17.6	8. 12.5

Project Priorities

Reach 1, 2, 3 High

Reach 1 Rehabilitation Conceptual Design



Reach 1 Status Update

- **Cut-off wall construction**
 - Dike sections near Port Mayaca, Pahokee and Belle Glade
 - 11 of 22 miles under contract
 - Over $\frac{3}{4}$ mile completed
- **Design of landside features**
 - Under consideration: seepage berm, relief wells, sand drains, soil replacement wedges
 - Construction start 2011
- **Toe ditch fill**
 - Completion scheduled for 2009

Reaches 2 and 3

- **Major Rehab Report (MRR) currently being prepared**
- **Components**
 - Systems analysis
 - Risk assessment
 - Geotechnical modeling
 - Conceptual designs



Reaches 2 and 3 MRR

- **Systems analysis**

- 2000 MRR approved the rehabilitation of HHD
- Reaches 2 and 3 MRR - In addition to rehabilitation, other alternatives must be considered at USACE HQ request
- Alternatives
 - Containment - Cut-off wall & landside features (similar to Reach 1)
 - Removal
 - Release
 - Flood proofing
 - No action



Reaches 2 and 3 MRR

- **Systems analysis (cont.)**
 - Alternatives evaluated based on impacts to
 - Health and safety (including authorized level of flood protection)
 - Environment
 - Economics
 - Real estate
 - Costs



Reaches 2 and 3 MRR

- **Risk assessment**

- Purpose is to build model to determine which fixes are needed to reduce risk levels
- Performed by nationwide team of experts
 - Corps offices with significant dam safety experience
 - Pittsburgh, Huntington, Sacramento, Chicago
 - Engineering Research and Development Center (ERDC)
 - Academic experts in safety/risk assessment
 - Dr. Bowles, Utah State University
- Under evaluation
 - Event tree
 - Analysis of failure modes of HHD: structural, geotechnical
 - Risk to life and property
 - Hydrology & hydraulics analysis: in-flows to Lake Okeechobee modeling, wave run-up



Reaches 2 and 3 MRR

- **Geotechnical models**
 - Lessons from Katrina
 - Designs with resilience, redundancy, reliability
 - Consider geotechnical conditions of dike and adjacent land, land use
 - Combination of cut-off wall and landside features such as seepage berm, relief wells, sand drains, soil replacement wedges



Reaches 2 and 3 MRR

- **Conceptual design**
 - Features: cut-off wall, seepage berm, relief wells, sand drains, soil replacement wedges
 - Evaluation of features based on geology and land use



HHD Rehabilitation

- **Questions?**

