HERBERT HOOVER DIKE REHABILITATION PROGRAM

GEER Conference
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Jacksonville District
Ingrid Bon, P.E.

US Army Corps of Engineers
BUILDING STRONG®
Presentation Agenda

• Herbert Hoover Dike Project Background
• Adaptive Project Management
• Parallel Activities
• Funding Challenges
• Lake Okeechobee is 720 square-miles - twice the size of NYC
• Average water depth is 9 feet
• Water volume equal to 2.2 million Olympic-size pools
• Basin is 5,600 square-miles
• One foot of rain in the basin equates to a three to four-foot rise of the lake
• Lake can fill six times faster than water can be released
Purpose of the HHD Project

• Bring the Dike up to Dam Safety Requirements
Previously Observed Problems

- Sinkholes
- Heaves
- Piping
- Saturated Toe
Complex System

5 gated outlets
5 gated inlets
33 primary & secondary culverts
9 navigation locks
9 pump stations

No overflow capacity
Findings and Solutions

- 1990s Corps studies initiated by evidence of damage to the HHD
- 2000 Congress approves Corps proposal for fix; analysis and design begins
- 2005 Corps starts construction
More Recent Developments

- Hurricane Katrina strikes in 2005
- Corps overhauls procedures for managing dams and levees (ongoing)
- Corps sponsors HHD repair evaluation with state and independent experts
- Consensus reached on a modified fix concept
Adaptive Project Management

- New Guidelines and Policies
- Risk Assessment DX Process
- Dam Safety Guidance, an Ongoing Evolution
- Aging Dike Structure
- Recent Weather Extremes
- Varying Local Interests Coordination: CERP, Lake Level Regulation, Flood Protection, Water Supply, etc.
- New Team Members
- New Projects by Others (lock, quarry, equestrian park, River of Grass)

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Parallel Phases and Activities

- Major Rehabilitation Report and Supplemental Environmental Impact Statement
- Cut-off Wall Design & Construction
- Community Outreach and Involvement
- Interim Risk Reduction Measures
- Landslide Rehabilitation Design
- Real Estate Acquisition Coordination
- Existing Culvert Analysis and Rehabilitation
- Multiple On-going Construction Contracts
- Internal Communications and Reporting
- BUILDING STRONG® Contracts
Landside Design Criteria

- Geotechnical engineering design is the initial criterion for analysis
- Each design is ranked based on reliability, resiliency and redundancy
- Other factors in the determining design solution:
  - Initial cost
  - Operations and maintenance
  - Community resources
  - Visual and human interest
  - Flora and fauna
  - Social factors – impacts to local communities
  - Land use

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Environmental and Public Involvement Processes

- Public meeting during review of Environmental Impact Statement (EIS)
  - Design process description
  - Design alternatives
  - Recommended alternative
- Public comment is encouraged
- Final EIS and Record of Decision
Interim Risk Reduction Measures

- New lower lake regulation schedule
- Increased inspection frequency
- Emergency management
- Immediate actions

Tree removal and filling the landside ditch
Interaction with local communities and drainage districts

- Interaction with communities and Counties around Lake Okeechobee
  - Local initiatives that may conflict with HHD rehabilitation
  - Local concerns (noise, employment, economic benefits)
  - Building and maintaining trust

- Local drainage districts
  - Historic usage
  - Data gathering/collection
  - Obtaining data
  - Incorporating current conditions (permitted usage) into design solutions
Funding Challenges

- Double Annual Funding 2007 thru 2010
- Resources Stretched Thin as Funding Increases (Labor, AE, Suppliers, Construction)
- Multiple Phases (Planning, Design & Construction) Competing for the Same Resources
- Competition for Dam Safety Funding With other Dams Throughout the USA

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Lessons Learned

- **What works**
  - Competent staff and strong PM support
  - Accountability
  - Early identification of resource needs
  - Culture of identifying problems AND solutions
  - Continuous and organized communication
  - A healthy budget

- **What we need to improve**
  - Communication
  - Garnering support from Corps-wide programs
  - Ability to resolve scarcity of resources
Questions?

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