Project Name: **Herbert Hoover Dike Rehabilitation** (HHD)
Project ID: 3700
Lead Agency: USACE
Authority: Central and Southern Florida (C&SF) Project for Flood Control and Other Purposes in the Flood Control Act of 1948, 1954, 1958, 1960, 1965 and 1968; Authorization in 1970 under Section 201 of the Flood Control Act of 1965; the Water Resources Development Acts of 1986, 1988, 1990, 1992, 1996, 2007; and the Rivers and Harbors Act of 1930. WRDA 2007 *(report requirement and authorization)*
Funding Source: USACE

Strategic Plan Goal(s) Addressed: 3-B.2

Measurable Output(s): Risk reduction features implemented within the 143 mile HHD system

Project Synopsis: The Herbert Hoover Dike system consists of nearly 143 miles of levees surrounding Lake Okeechobee, with culverts, hurricane gates and other water control structures. The first embankments around Lake Okeechobee were constructed by local interests from sand and muck, circa 1915. Hurricane tides overtopped the original embankments in 1926 and 1928 causing over 3,000 deaths. The River and Harbor Act of 1930 authorized the construction of 67.8 miles of levee along the south shore of the lake and 15.7 miles of levee along the north shore. The USACE constructed the levees between 1932 and 1938 with crest heights ranging from +32 to +35 feet, NGVD.

A major hurricane in 1947 prompted the need for additional flood protection work. As a result, Congress passed the Flood Control Act of 1948 authorizing the first phase of the Central and South Florida (C&SF) Project, a comprehensive plan to provide flood protection and other water control benefits in Central and South Florida. By the late 1960's the new dike system was completed, raising the elevation of the levees to +41 feet, NGVD. This provides protection to the Standard Project Flood level, approximately an event occurring once in 935 years.

Investigations conducted in the 1980's and early 1990's of the dike system's potential seepage and stability problems resulted in the identification of two major areas of concern: the seepage and embankment stability at the culvert locations, and the problematic foundation conditions of the dike. During high water events, piping is experienced thru the levee. In 1999, the Corps developed a plan to rehabilitate HHD and the plan was approved in 2000.

The Major Rehabilitation Report (MRR) from 2000 divided the 143 mile dike into eight (8) Reaches with the initial focus on Reach 1. This Reach by Reach rehabilitation approach has been replaced with a system wide risk reduction approach as required for safety modifications to Corps dams. The supplemental MRR produced for Reaches 2 and 3 evolved into a system wide Dam Safety Modification Study (DSMS) with current scheduled completion in March 2015. (The MRR approach and approval for Reach 1 occurred prior to procedural changes implemented post-Katrina.) The DSMS addresses the entire dike as a system and includes a risk reduction approach to implementing features based on priority and reducing risk as quickly as possible. All features planned and under construction support the goal of this study.

In 2011, the Corps approved a plan to replace, abandon or remove the 32 water control structures (culverts) operated by the Corps within the HHD system. This project is being implemented as part of the risk reduction approach to the entire system.

Current Status:
Construction of cutoff wall is complete in Reach 1 for a total of 21.4 miles.

A total of 32 water control structures (culverts) are planned for replacement, removal or abandonment around the dike. The removal of one (1) culvert is complete and the replacement of twelve (12) culverts is underway. Two (2) additional culvert replacements are planned for award in 2014 while three (3) culvert replacement structures are being designed for award in 2015.

As part of the DSMS, a seepage management pilot test is under construction in 2014 to demonstrate the constructability of an alternate risk reduction feature to address the embankment and foundation piping issues. The results will demonstrate the constructability of the trench drain that can be used on a larger scale should a similar alternative be selected as a structural fix during the development of the Dam Safety Modification Study.

Potential Failure Mode Analyses (PFMA) and Risk Assessments (RA) have been completed through all Reaches supporting the DSMS and identified future risk reduction features that will be necessary to complete the project as part of the Tentatively Selected Plan.

Est. Cost: $ 2,109,837,761

Project Schedule:

2015	DSMS is complete identifying needed risk reduction features
2020	Water control structure (culvert) construction complete

Detailed Project Budget Information (rounded):

HHD	Obligations Thru FY 2013
USACE	$636,445,886
SFWMD	N/A
Total	**$636,445,886**

Hyperlink: http://www.evergladesplan.org/pm/projects/non_cerp_sf_projects.aspx

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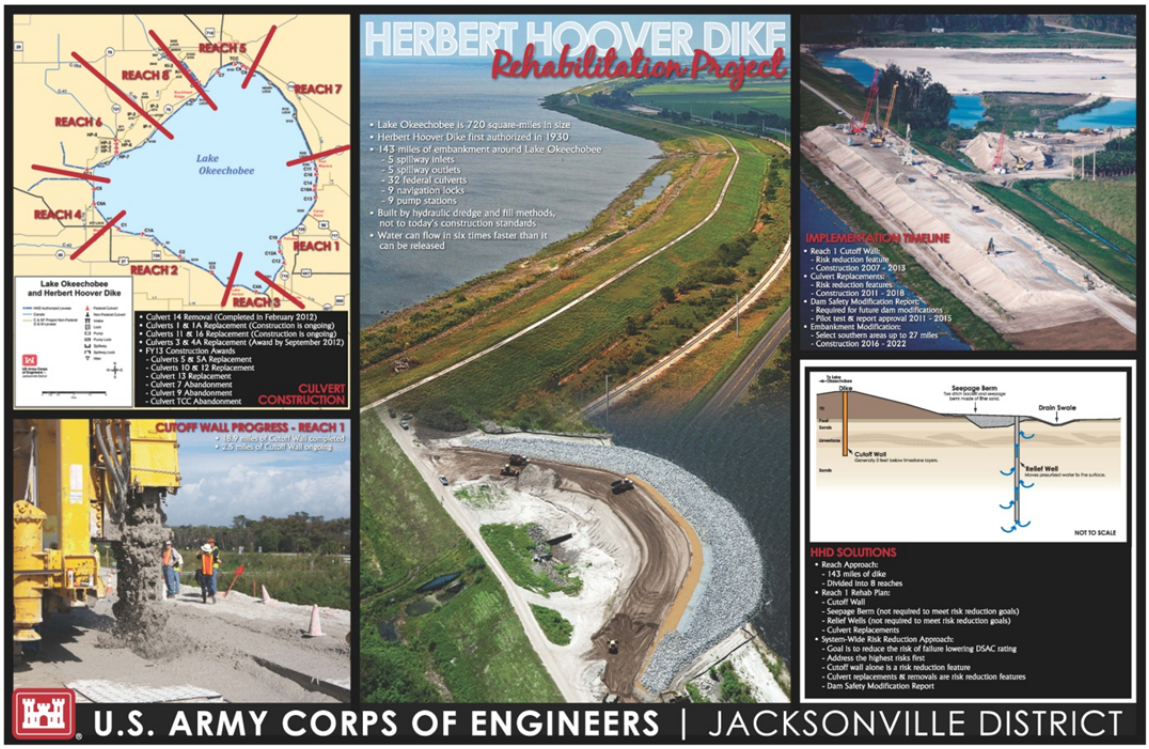
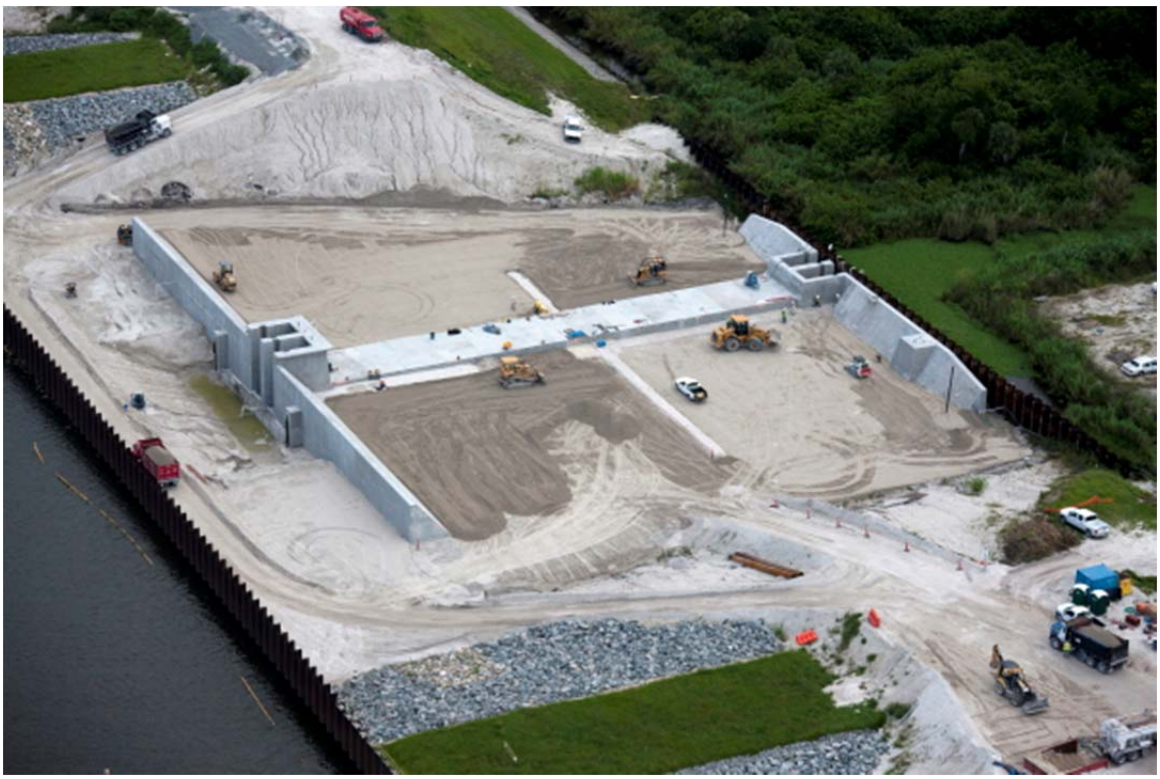
Source: Current status and schedule was provided by the project manager.

Additional Information:



Cutoff Wall Task Order #9 (July 2013)



Culvert 11 Replacement (July 2013)

Culvert 1A Replacement (October 2013)