



**SPRING 2016**

The U.S. Army Corps of Engineers continues work on Herbert Hoover Dike (HHD), the 143-mile structure surrounding Lake Okeechobee. Since 2007, the Corps has made a significant investment, over \$500 million, in projects designed to reduce the risk of catastrophic failure of the aging structure.

## THE DIKE

The Corps built the dike with gravel, rock, limestone, sand and shell. These natural materials allow water to flow through at times. This is a normal process called seepage.

However, when the water level in the lake is too high, the resulting pressure causes extra seepage that can lead to internal erosion, or piping. When the water level is too low, the soil dries out which could result in the development of cracks in the foundation. Neither extreme is good, so engineers closely monitor the lake levels and the dike.

## HHD CULVERTS REMOVALS OR REPLACEMENTS

With adoption of the overall systems approach, old water control structures along the HHD, commonly known as “culverts,” became the highest priority to reduce risk. The culverts date back to the 1930s. From a structural integrity perspective, the culverts pose a risk of failure due to the loss of embankment material into and along the structures.

The Corps will replace 26 culverts within the HHD system. Eighteen structures are currently under contract. The remaining eight structures are expected to have contracts in place over the next four years. The Corps anticipates construction on culverts to continue through 2022.

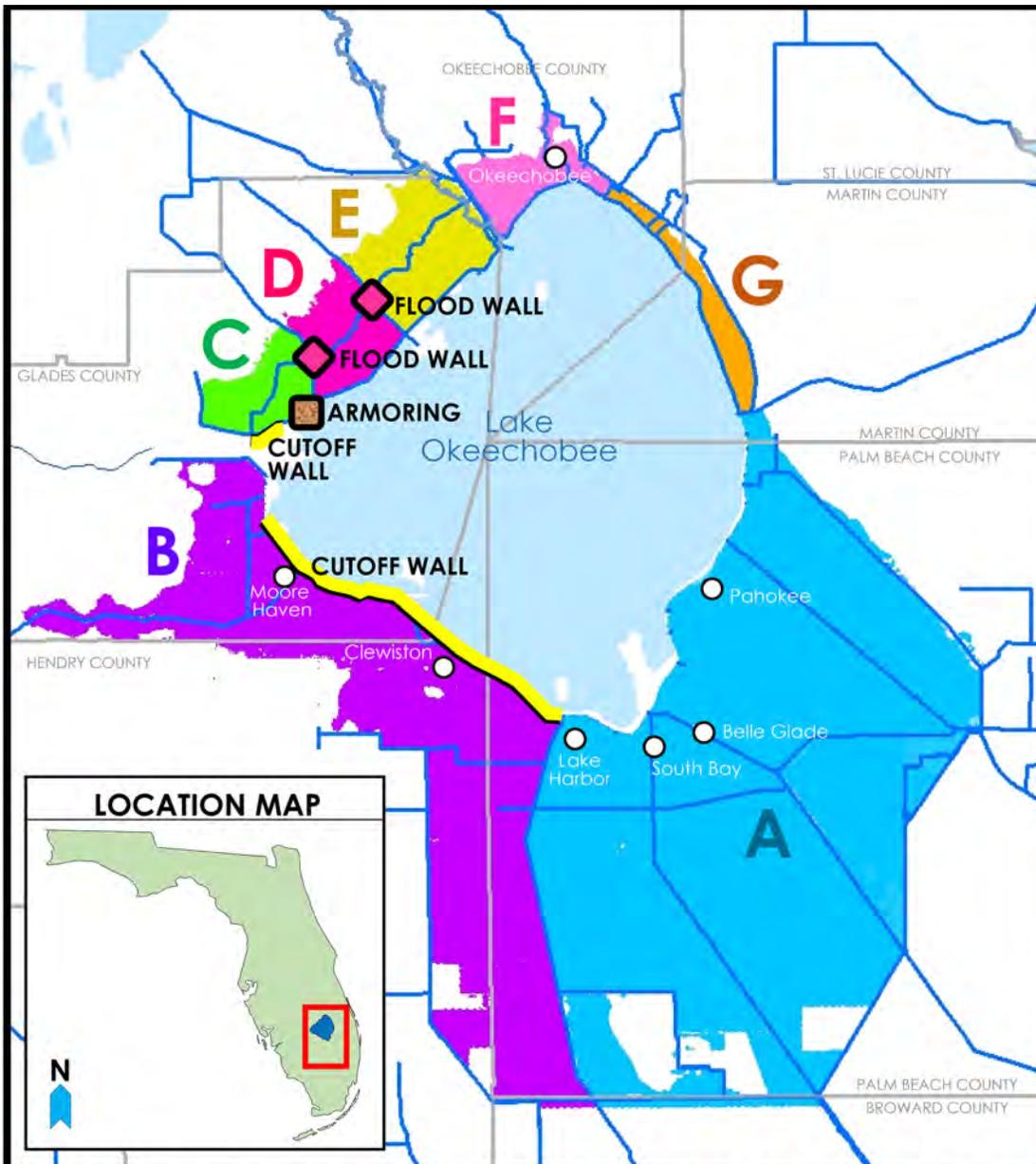
## CUTOFF WALL CONSTRUCTION

The Corps determined construction of a partial cutoff wall was the best method to repair 22 miles of embankment between Belle Glade and Port Mayaca identified as Reach 1 in a 2000 report. The partial cutoff wall helps reduce the risk of failure by eliminating existing piping and preventing additional internal erosion through the dike and foundation. The Corps completed the initial contracts associated with cutoff wall construction in Reach 1 from 2007-2013, investing an estimated \$220 million in repairs.

## DAM SAFETY MODIFICATION STUDY

While the initial cutoff wall was under construction, the Corps began looking at the entire dike as a single flood-control system, utilizing a process that prioritized actions designed to lower the risk across the entire project. Work began on a Dam Safety Modification Study (DSMS) for HHD, to support this effort.

In late 2015, the Corps released a draft summary of a Dam Safety Modification Report and draft environmental impact statement. The draft document provides an outline of a tentatively selected plan (more details on back) that includes an approach to implement features based on priority, consistent with a goal of reducing risk as quickly as possible. All features currently that have previously been constructed support the goal of this report.



**HERBERT HOOVER DIKE (HHD) TENTATIVELY SELECTED PLAN FEATURES BY COMMON INUNDATION ZONES**

## COMMON INUNDATION ZONES

As the Dam Safety Modification Study has progressed, the Corps has completed analysis on consequences that would result from a breach in the dike with a lake level at elevation 25 feet (NAVD). Based on this analysis, the Corps has identified seven common inundation zones designed to illustrate areas that could be impacted. Failure of the dike at any location along the lakeside of a common inundation zone would flood the impacted area with at least one foot of water.

## REACH 1 CUTOFF WALL EXTENSION

With development of Common Inundation Zones, engineers determined that a 6.6-mile section of embankment between Lake Harbor and Belle Glade needed repairs to realize the full benefits of cutoff wall already installed in Reach 1. In 2015, the Corps approved extension of the Reach 1 cutoff wall to cover this area. The Corps plans to award a contract for this work in 2017, with repairs to this section of dike complete in 2020.

## DRAFT DAM SAFETY MODIFICATION STUDY

The Corps considered several options and strategies as it developed a final array of alternatives to reduce the risk at the dike to tolerable levels. The tentatively selected plan includes an additional 28 miles of partial cutoff wall, primarily in an area west of Lake Harbor stretching past Moore Haven. The plan also proposes construction of floodwall at low points of the dike near water control structures to reduce the potential risk of overtopping from storm surges generated by high-wind events (such as hurricanes). The Corps also proposes armoring of a bridge abutment to reduce the risk of erosion from similar high-wind events. The estimated cost of the tentatively selected plan is \$400 million.



## FOR MORE INFORMATION

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