

# Lake O dike repair project may have holes in its logic

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Sunday, May 07, 2006

Chart: How the dike could collapse  
Report: Experts discuss the dike  
Gov. Bush's letter: Evacuation urged  
Photos: Aerial view of the Herbert Hoover Dike

For half a year, workers have labored to fix the dike that protects 44,000 Glades residents from the sloshing and surging of Lake Okeechobee.

But a report by state consultants raises some vexing questions: What if the repairs don't work?

What if they make the dike's problems worse?

What good is a remedy that could take decades to finish, while every approaching hurricane or freakish downpour puts people at risk?

Those were some of the puzzles the report posed last week as it labeled the Herbert Hoover Dike a "grave and imminent danger" to human life, in need of serious cash from Congress and quick action from the Army Corps of Engineers.

The report prompted Gov. Jeb Bush to order plans for mass evacuations from the Glades before the next threatening hurricane. Meanwhile, the corps reassured residents that it has begun working on a \$230 million repair project for one of the earthen dike's biggest failings: Its tendency to spring dozens of leaks during high water.

But the state's consultants say the repairs will create only a partial barrier against leaks, leaving the dike vulnerable to catastrophic failure — either during a hurricane or from years of slow, steady water pressure.

Even if the repairs work as promised, the consultants estimate that the stretch of dike from Port Mayaca to Belle Glade would have a 62 percent chance of failing in the next three decades. That's an improvement from the 95 percent odds of failure if the corps does nothing, they said, but it's far less than people deserve.

The state's experts said the repair also is hobbled by congressional stinginess, especially in the amount of flood protection the corps is allowed to provide. They added that preventing erosion of the dike "has become almost a secondary priority" compared with other demands, such as providing space for electric lines and making sure not to cut off farms' water supplies.

The three consultants include two engineers who also serve on panels examining the failure of New Orleans' levees after Hurricane Katrina. They warned that flaws similar to those that doomed Louisiana's flood barriers also could threaten the Glades, even if the 143-mile-long, 300-foot-thick Hoover dike is far more massive than the walls that failed on the Gulf Coast.

"You're not seeing anything in Florida that didn't happen in New Orleans," said Colorado engineer Steven Vick, one of the state's dike consultants.

At Bush's request, corps leaders have agreed to study the consultants' objections during the next several weeks. Meanwhile, the repairs continue.

"We want to understand exactly what those concerns are," said Richard Bonner, the top civilian engineer at the corps' Florida headquarters in Jacksonville. Bonner said it would be expensive to stop work midstream, and the corps has faith in the eight years of study and planning that went into the project's design.

While the corps respects the consultants' expertise, Bonner noted that they based their report largely on the corps' own documents. In some issues — such as how deep to embed a leak-proof wall the corps is installing inside the dike — the panel is revisiting questions Bonner's agency has already considered.

"Those guys had no more information than we did," Bonner said. "In fact, they had less."

Even so, the experts' findings won a swift endorsement from the South Florida Water Management District, which manages the lake along with the corps and commissioned the report.

"The repairs need to be far more extensive and accelerated dramatically," district Deputy Executive Director George Horne said Friday after an aerial tour of the dike. But that speed depends on how quickly the money can come from Congress.

The corps began work in December on shoring up 4.6 miles of the dike just south of Port Mayaca. By 2010, it expects to finish reinforcing all 22 miles from Port Mayaca to Belle Glade, plus an additional 27 miles west to Moore Haven by 2013 — with the rest of the dike still to go.

Even at that rate, repairing the entire dike could take decades that residents cannot afford to wait for, Horne said. "Twenty-five years is not an acceptable length of time."

South Bay Mayor Clarence Anthony, who joined Horne on the tour, said people in the Glades deserve the same protection as anybody near the ocean. "If this was beach erosion and we had \$5 million to \$10 million homes at risk, we'd have the response that we should have," he said.

Vick said the big problem is that Congress tells the corps how much flood protection to offer, and the corps is forbidden from providing more.

As a result, the consultants said, the dike isn't designed to protect residents from the most severe possible combination of water levels, storm surge, waves, erosion and hurricane winds. Instead, they wrote, the corps set a lesser goal decades ago: guarding against the harshest conditions that could be "expected."

Similar limitations hamper the repair, they wrote.

Among their objections:

- The wall the corps is embedding in the dike will block water from seeping through, but the wall will rise no higher than 26 feet above sea level.

That's 6 to 20 feet below the dike's peak, leaving a gap where the consultants say abnormally high water or storm surge could push seepage through the dike. The water could spill out on the dike's opposite slope, causing mudslides and eventual collapse, Vick said.

Corps leaders say they work hard to keep the lake from ever rising that high — in fact, it's never gotten to 19 feet since the 1930s. Without the repairs, they say, the dike is likely to fail when water reaches 21 feet above sea level.

- Similarly, the wall's bottom will be 10 feet below sea level, allowing water to continue seeping underneath. The corps originally considered pushing the wall down an additional 24 feet but said

it would likely cut off the groundwater flow to farms near the lake. The shorter wall will slow the leaks, limiting the damage they cause, corps engineers have said.

But Vick said the leaking water still could enter large cavities in the limestone or shell under the dike, possibly accelerating the leaks instead of stopping them. Instead, he said, the wall should go down as far as it needs to go to avoid any such gaps.

In his initial response to Bush on Wednesday, Assistant Army Secretary John Paul Woodley Jr. seemed to acknowledge that limits exist in what the corps can offer. When the governor urged the corps to seek ways to reexamine the repair plans, Woodley said it would — "under congressionally authorized levels of protection."

Last week, U.S. Reps. Mark Foley, R-Fort Pierce, and Alcee Hastings, D-Miramar, said they would press for Congress to authorize the corps to treat the dike as a dam, allowing a greater level of protection. Even then, corps leaders said they haven't calculated how much it would cost to upgrade the dike to dam safety standards.

Despite the hits the corps is taking on the issue, Bonner said he appreciates why the report has caused such a stir. "We're dealing with people's lives," he said.