



US Army Corps
of Engineers
Jacksonville District

Herbert Hoover Dike *vs* New Orleans Levees

August 2006

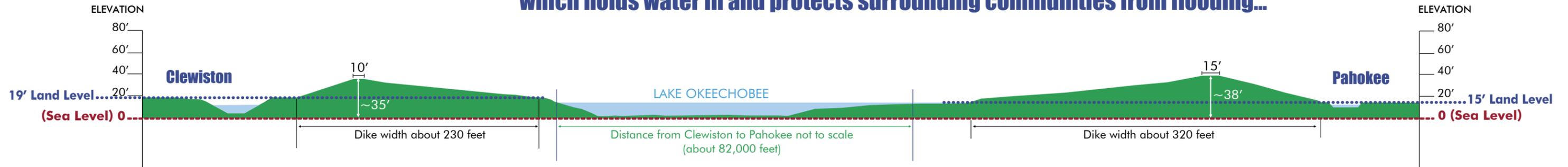
Comparison Information

People have compared the Herbert Hoover Dike to the hurricane protection levees that surround New Orleans. The structures site conditions and potential for flooding are very different.

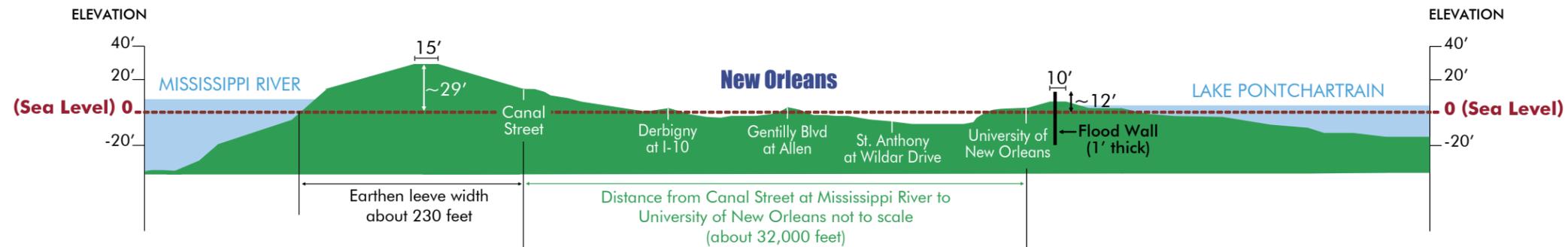
	Herbert Hoover Dike	New Orleans Levees
Structures	Earthen levees	Earthen levees and <i>floodwalls in urban areas</i>
Average Height	Highest point – 45 Lowest point – 32 feet above sea level	Highest point – 17 feet Lowest point – 12 feet above sea level
Average Width	20 feet top / 250 feet bottom	9 feet top / 105 feet bottom (earthen) <i>1-foot floodwalls top / 30 feet bottom (earthen)</i>
Average Ground Level	Low +17 feet in Pahokee +19 feet in Clewiston All areas are higher than lake average	Low -8 feet near Lake Pontchartrain. High +14 feet on ridgeline and near Mississippi River (French Quarter)
Water Influences	Lake Okeechobee, St. Lucie, Kissimmee and Caloosahatchee rivers	Lake Pontchartrain, Gulf of Mexico, Lake Bourne, Mississippi River, MR Gulf Outlet, Inner Harbor Navigation Canal, and, 17th Street, Orleans and London Avenue canals
Flooding	<p>1800s Lake flows through South Florida.</p> <p>1926 Hurricane-induced waters erode muck dike, causing tidal flooding.</p> <p>1928 Hurricane-induced waters destroy southern dike, massive flooding.</p> <p>1930 Corps begins HHD after Florida requests federal aid.</p> <p>1947 Hurricane causes massive flooding.</p> <p>1948 Hurricane causes massive flooding.</p> <p>1960 Corps encircles Lake Okeechobee. No lake floods since the completion of HHD.</p>	<p>1800s Surge floods city under several feet of water, flooding lasts weeks, periodic rain flooding.</p> <p>1905 Surge overtops levees, floods majority of city.</p> <p>1915 Surge overtops levees, draining takes weeks.</p> <p>1927 Pump stations' electrical systems fail, city floods.</p> <p>1947 Surge overtops levees, six-foot flood.</p> <p>1965 Surge causes breach, flooding East Orleans.</p> <p>1965 Corps begins hurricane protection project (adjacent Corps HP project is complete).</p> <p>1995 Rain overwhelms pumps, suburbs flood.</p> <p>2005 Hurricane surge breaches three floodwalls, and overtops numerous earthen levees, flooding 50 percent of metro New Orleans.</p>

Comparison Information

Lake Okeechobee is a water body surrounded by the Herbert Hoover Dike, which holds water in and protects surrounding communities from flooding...

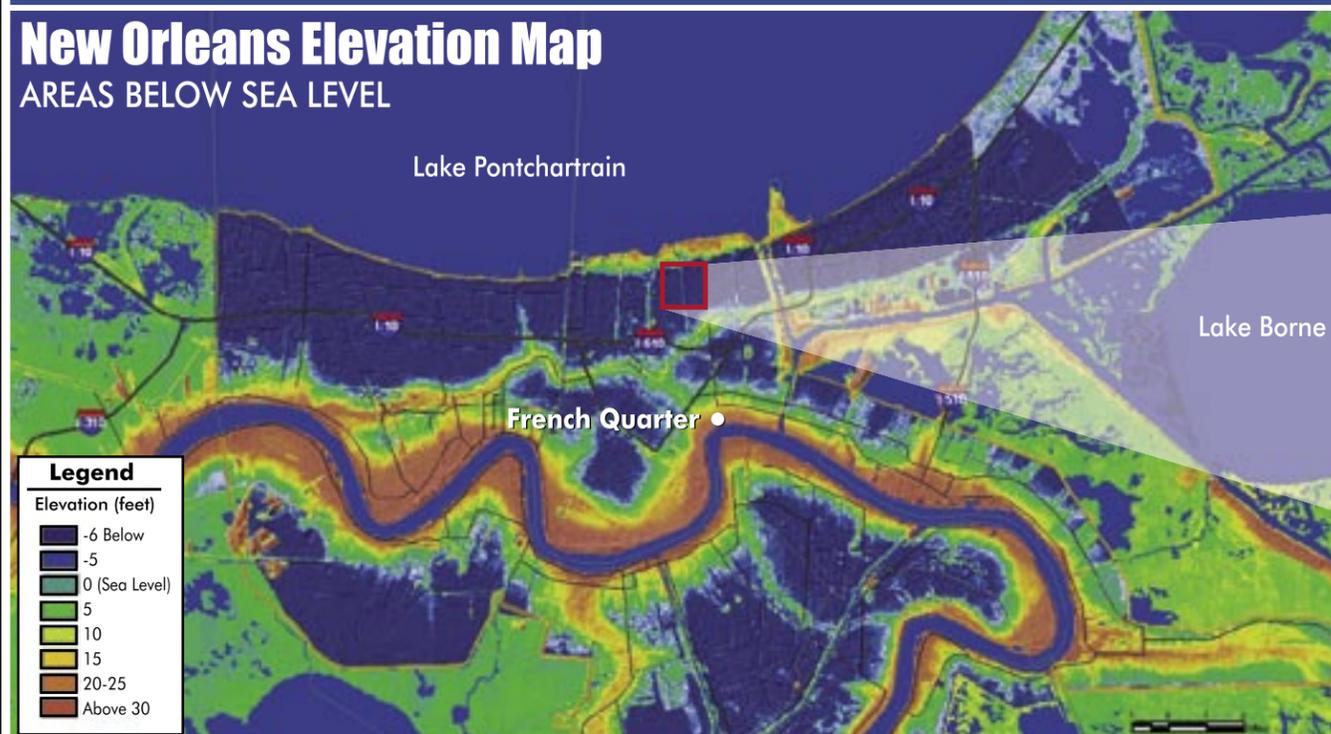


...while New Orleans is a community surrounded by levees that were built to keep an endless supply of water out.



New Orleans Elevation Map

AREAS BELOW SEA LEVEL



New Orleans

Floodwalls were used in New Orleans urban areas because there was not enough ground space to build large earthen levees. Breaches of the 17th Street and London Avenue canal floodwalls caused the greatest flooding in downtown New Orleans.

Flooding in the greater New Orleans area occurred, however, when surge waters overtopped earthen levees that averaged 13 – 15 feet above sea level.

Hurricane Katrina was a Category 5 in the Gulf of Mexico, and it raised ocean storm surge 28 feet along the Gulf Coast. The surge pushed north into Lake Bourne and then swept over wetlands north-westerly into Lake Pontchartrain. Nearly 23 miles of earthen levees to the east and south were overtopped and scoured by this surge.



HHD Facts

- The U.S. Army Corps of Engineers holds public safety as its highest priority. We have always taken, and will continue to take, actions that put protection of the public above all other considerations.
- The water level in Lake Okeechobee has never been higher than 19 feet. In its current condition, the dike is likely to fail at a water level of 21 feet. The likelihood of failure increases greatly at lake levels above 18 feet.
- It is unlikely that water will flow over the top (overtopping) of the HHD. A dike failure would be caused by water pressure eroding through the dike in what is called 'piping.' Seepage is normal when the water is clear, but when waters coming from the dike are brown and carrying sediment it's a signal that piping is occurring.
- As long as the water level is kept low, the dike is safe and can withstand a direct assault of a major hurricane. A combination of prolonged, record rainfall and a very strong hurricane may require evacuation.
- Complete control over lake waters is not always possible – extreme rainfall events in the Kissimmee Basin can cause the lake to fill six times faster than its waters can be released.
- Immediately following storm events, the Corps and South Florida Water Management District will inspect the dike for erosion and seepage. Stockpiled repair materials will be used to strengthen weak areas.
- The proposed Lake Okeechobee water regulation schedule would help water managers maintain lower lake levels. The Corps tries to manage Lake Okeechobee water levels between 12.5 – 15.5 feet.
- The Corps is currently working on a \$301 million dike project. This repair work was motivated by Corps studies done in the 1990s.
- All repairs will take 25 years to complete. The project can be done faster if money is made available. More studies and redesign will be needed if repairs are made to dam safety standards.

For More Information



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