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Full Flood Safety in New Orleans Could Take Billions and Decades

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By [JOHN SCHWARTZ](#)

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NEW ORLEANS, Nov. 22 - Amid all the arguments over how to rebuild this pummeled city, there is one universally held article of faith here: New Orleans must have a flood protection system strong enough to withstand Category 5 storms, the worst that nature can spawn.

It is a rallying cry heard on radio broadcasts and in a front-page editorial in The Times-Picayune, in ruined neighborhoods and in corporate boardrooms.

Strong protection is the linchpin that everything else depends on, said Joe Veninata, the owner of a shopping center and rental homes in the Gentilly neighborhood, "for people to come to the city and invest, for the people to

feel secure."

"Without that," Mr. Veninata said, "we can't build New Orleans anymore."

Building Category 5 protection, however, is proving to be an astronomically expensive and technically complex proposition. It would involve far more than just higher levees: there would have to be extensive changes to the city's system of drainage canals and pumps, environmental restoration on a vast scale to replenish buffering wetlands and barrier islands, and even sea gates far out of town near the Gulf of Mexico.

The cost estimates are still fuzzy, but the work would easily cost more than \$32 billion, state officials say, and could take decades to complete.

The current levee system around the city was designed to withstand the equivalent of a Category 3 storm, and the Army Corps of Engineers is spending \$1 billion to bring the damaged sections to their original design strength. They plan to complete that effort before next year's hurricane season, which begins on June 1.

But a sense of how much more extensive Category 5 protection would be can be found 23 miles east of downtown New Orleans at a strait called the Rigolets, which connects the gulf and Lake Pontchartrain. For nearly 200 years, the brick bastion of Fort Pike has looked down on the two-thirds-mile gap, which the fort was built to protect against military threats from land or sea.

These days, however, the threat is from the sea itself. A surge from storms like Hurricane Katrina can push water through the gap and send floods deep into the city. So engineers and other experts say that the Corps of Engineers should build a gate across the Rigolets (pronounced RIG-uh-lees) that could be shut in the face of a storm.

From a viewpoint by the remains of Fort Pike looking across the sparkling water, the project seems enormously daunting, on a scale of the flood systems that protect cities like London and Amsterdam. And it is only one step toward the goal of fortifying New Orleans to the highest level. Congress only recently agreed to give \$8 million to the corps for a study about providing increased protection for South Louisiana, with a preliminary report due in six months. The final plan is two years away.

While every expert has a list of things that would upgrade the city's flood controls, Category 5 protection is not easy to define, experts say. Dan Hitchings, director of Task Force Hope, the corps's Hurricane Katrina relief effort, noted that Category 3 hurricanes were specifically defined while Category 5 includes any hurricanes with winds greater than 155 miles an hour and a storm surge greater than 18 feet.

"What's the top end for a Cat 5 hurricane?" Mr. Hitchings said. "There isn't one."

Herbert Saffir, a co-creator of the Saffir-Simpson hurricane scale, said he would not recommend designing a Category 5 protection system because such a storm would be unlikely to hit any particular spot more than once in 500 years. Only three Category 5 storms in recorded history have made landfall in the United States, Mr. Saffir said; Hurricane Katrina had been a Category 5 in the gulf but was at Category 4 at most when it landed east of New Orleans near Buras, La.

Others disagree. Maarten van der Vlist, an engineer with Rijkswaterstaat, the Dutch equivalent of the Corps of Engineers, said that after a disastrous flood in 1953, the Netherlands chose to protect against flooding that occurs once every 10,000 years.

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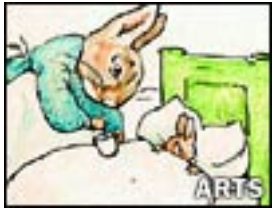


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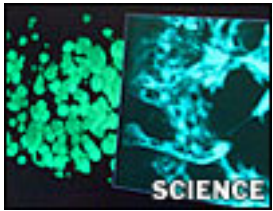
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