

John Collins' condo is just a stone's throw from the expansive marsh between Mount Pleasant and Sullivan's Island, where kayakers and crabbers were enjoying a recent afternoon. That proximity to water affords expansive views, but it also resulted in unaffordable insurance premiums for Collins and the owners of 89 other condos at Simmons Pointe.

With flood insurance for all the homes costing \$425,000 yearly and rising fast, the Mount Pleasant residents went looking for a solution, and the one they found had stunning results.

By installing a barrier known as a trip wall to protect the development from potential hurricane-driven waves, condo owners were able to change their federal flood zone designation and cause their annual insurance to drop to \$14,000.

"It saved me," said Collins, president of the Simmons Pointe homeowners association. "It saved everyone else in the community."

"They were just staggering savings," he said. "When people got their bills this year, they were dancing in the streets."

Prior to the trip wall project, the average Simmons Pointe condo owner was paying nearly \$400 a month for flood coverage. That's in addition to regular property insurance, wind and hail coverage, condo fees and any mortgage payments.

Now, monthly flood insurance averages about \$13 per condo.

"It's just a miracle," said homeowner Bert Niemyer. "I didn't know there was anything like what we were able to pull off."

Simmons Pointe isn't the only development that has used a trip wall to win a change in its flood zone from the Federal Emergency Management Agency, but such measures are a rarity. The Tides condos, also in Mount Pleasant, installed a trip wall that was completed in 2007, and it might be the only other one in the region.

A trip wall doesn't prevent flooding, but is designed to take the velocity out of a storm surge, so that rushing waves don't slam into buildings. Projections for velocity are what drives "V" flood zone designations, and the high insurance costs that follow.

"I've been told there aren't many of these in the Southeast," said Sonny DuPre, president of Cape Romain Contractors, which installed the walls at Simmons Pointe and The Tides. "I think it's a situation where people just don't realize it's a possibility."

DuPre said trip walls like the one at the condo development should last 40 to 50 years.

The solution for Simmons Pointe - building a wall between the buildings and the water - sounds deceptively simple.

The project involved consultants, state and federal regulators, Mount Pleasant building officials, engineering firms, landscaping specialists and the national flood insurance program.

It also involved a lot of money. The project cost about \$1.2 million, which was a big undertaking for 90 homeowners to share. That works out to more than \$13,300 each, but it's now clear that the insurance savings will cover the project cost in under three years.

When the wall was completed and the flood zone was changed, Simmons Pointe received a refund for that year's flood insurance, covering more than a third of the project cost right away.

"The concept has been around for a long time," said Chris Jones, a flood plain and coastal issues

consultant in North Carolina who worked on the trip wall projects for Simmons Pointe and The Tides.

"I don't know if it is a common occurrence yet, because these walls are pretty expensive," he said. "I don't think the red tape is much more onerous than many types of permits in coastal areas, but it is time-consuming and there are procedures that need to be followed."

Due to the cost and regulatory requirements, trip walls appear to make sense primarily for multifamily or commercial developments located in velocity ("V") flood zones, with river or marsh exposure.

"I doubt that most single-family homeowners would undertake something like that," Jones said.

For a single-family home, the cost would be prohibitive and a trip wall could be ineffective on a small lot, he said. And for oceanfront buildings, different regulations would apply.

"If someone tries to do this on the beachfront, they would have to deal with OCRM (state Office of Ocean and Coastal Resource Management) and things like turtle nesting areas," Jones said.

At least one seaside property in the Charleston area, the Charleston Oceanfront Villas on Folly Beach, was able to obtain a more favorable flood zone rating because they had an existing seawall and were able to reinforce it.

Greg Anderson, who serves on the Villas condo board, said the project cost about \$900,000; paid for itself in less than three years; and is now saving each condo owner about \$5,000 a year on flood insurance.

Reinforcing a seawall is different from installing a trip wall, but also impacts wave velocity.

Jones was also involved in the Charleston Oceanfront Villas project, and the Simmons Pointe association toured the Folly Beach condos before launching their trip wall plan.

For many properties that would seem well-suited for a trip wall - such as marshfront condos in a "V" flood zone - hurdles could remain. Jones said there typically needs to be about 20 feet between such a wall and the buildings it protects, to comply with federal flood guidelines - and that's impossible for buildings too close to the critical area line.

The state-defined critical area lines mark tidelands, coastal waters and beach or sand dunes. Trip walls must be built outside the critical area.

Collins said that at Simmons Point, porch supports on one building had to be altered to meet flood zone requirements.

"The trip wall was constructed outside of the state's critical area jurisdiction and did not require a critical area permit," said Dan Burger, director of South Carolina's Coastal Services Division at OCRM. "However, NPDES ( National Pollutant Discharge Elimination System) construction permit coverage was required because of the vicinity of the project to a coastal receiving water body."

With all the municipal, state and federal regulatory requirements, Collins said it was helpful to have a consultant working on the plan. Even then, Collins said the time required for permitting increased the cost of the project, because aluminum prices increased sharply. Most of the more than 1,400-foot-long trip wall at Simmons Points was constructed with aluminum sheet pile, pounded more than 20 feet into the ground with a vibratory hammer, DuPre said. About one third of the wall was made with 8-inch concrete sections that don't go into the ground; a step taken to protect the roots of live oak trees and drainage measures.

The earlier trip wall project, at The Tides, involved nearly 1,500 feet of aluminum sheet pile trip wall, plus nearly 8,000 feet of reinforced retaining wall, according to Cape Romain Contractors. That project, completed in 2007, "was the first structure of its kind in the Coastal Carolinas," according to the company.

The trip walls are not very tall. The one at Simmons Point is less than 5 feet high, and it barely changes the vista from Collins' screen porch, which like all the marshfront condos sits on pilings about 18 feet above ground level.

Now that the "confiscatory" cost of flood insurance has been dealt with, Collins said he'll be able to stay with his wife in their retirement home and enjoy the view.

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