

Future Florida: Sea level rise could flood parts of island

By John Nelander

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Green space is a prized commodity in estate-friendly Palm Beach, with up to 55 percent of some lots set aside for grass, trees, shrubbery and other landscaping.

“That’s a lot of greenery required throughout town,” said John Page, town director of Planning and Zoning. “It’s environmentally friendly and something that should discourage global warming.”

But the prevailing sentiment in the scientific community is that even the best efforts to promote eco-friendly policies won’t be enough to put the brakes on a steady sea level rise that will cause headaches for barrier islands such as Palm Beach for decades to come.

It will affect how homes are built and even where they’re built. It’s likely to demand new technologies and innovative ideas on how to keep streets, sidewalks, parks and golf courses from being flooded on a regular basis.

When most people think about global warming and sea level rise, they envision a far distant future, problems that their grandchildren and great-grandchildren will have to deal with. That may not be the case. Ocean levels have already risen 7-8 inches over the past 50 years, according to experts, and forecasts call for a 2-foot rise by 2060.

“That’s not that far away when you consider that most people have a 30-year mortgage,” said Nicole Hernandez Hammer, program manager for climate research at Florida Atlantic University’s Florida Center for Environmental Studies.

“One thing we know is that the rate of acceleration is increasing, so sea level rise is happening at a much faster pace than it was before.” A rise of up to 7 additional inches by 2030 is already baked in to current predictions – regardless of how many environmentally friendly policies are adopted or what global powers decide to do about carbon dioxide in the atmosphere.

“These are very conservative estimates,” Hammer said. “There’s research that contends it’s going to be much more, considering the recent ice melt. We’re waiting for a new report in 2013 that will include the ice melt in its projections, and right now the word is that the

projections are going to go up.”

The key question for Palm Beach and the rest of South Florida is how this higher water is going to affect the local economy and lifestyle.

“The end game is going to be a combination of redesigning structures, the way we build houses, and maybe relocation in some cases,” said Leonard Berry, an FAU professor of geosciences and director of the Florida Center for Environmental Studies. “You are going to have to retreat from the most vulnerable areas. That’s not something you do as a knee-jerk reaction, but something you do over a period of time.

“The first thing is, as some of the hospitals in New York found out, you don’t put your electrical infrastructure on the ground floor – most of the electrical and drainage stuff starts at the second floor. Rather than building a barrier, you allow storm surge to go through the building. Looking at how to live with flooding might be one of the mid-term answers.”

South Florida has about 40 percent of the vulnerable real estate in the United States, studies have shown. The Florida Keys face the highest risk from sea level rise, followed by Miami-Dade County. Forty percent of Miami-Dade is below 4 feet.

As barrier islands go, Palm Beach is a little better off. Highest elevations are on the ocean side but there are some low-lying spaces on the Intracoastal side, and that’s what concerns town officials most. The storm surge during and after Hurricane Sandy was exacerbated by higher seasonal tides, and there was some flooding on the west side of the island.

“The high tides started happening just as the storm went by,” said Public Works Director Paul Brazil. “That was the worst of it. On the Intracoastal side, we saw a few areas of flooding we hadn’t seen flood before. It’s still going on now, but it’s more typical of seasonal high tide.”

The town takes sea level rise into account as it refines building requirements, Brazil and Page said. When private property is redeveloped, owners are required to raise the height of their sea walls. Town-owned sea walls are being raised as well.

“We also have an ongoing program to upgrade and renovate all of our storm water pump stations, and any new construction is done at a higher elevation,” Brazil said. Federal regulations call for a 7-foot building elevation but the town requires 7.5.

Sea level rise “is something that needs to be planned for, but it’s not an immediate problem,” Brazil added. “It goes into long-term planning when you establish minimum floor elevations, minimum sea wall elevations, roadway grades and all of those things. But I wouldn’t propose to start building differently today.”

Page agrees, but he added: “We get a couple of massive storms and who knows what building code changes might occur.”

Meanwhile, town officials are closely watching the work of the Southeast Florida Regional Climate Change Compact, which published an 84-page “action plan” in October. It’s a joint effort by Palm Beach, Broward, Miami-Dade and Monroe counties. (The plan is posted on the web at <http://southeastfloridaclimatecompact.org/compact-documents/>)

“We follow that organization and the recommendations they’re putting out,” said Page. “We don’t have the staff here in Palm Beach who are devoted to this issue, so you have to look at where the information is available. This is one of the sources.”

Among other things, the organization is producing “inundation maps” showing the areas of South Florida most at risk from sea-level rise. FAU has done inundation maps focusing on specific areas, and the National Oceanic and Atmospheric Administration has an interactive website where visitors can literally zero in on neighborhoods to see how they might be affected. (Go to: <http://www.csc.noaa.gov/digitalcoast/tools/slviewer/>).

For Palm Beach, it shows that a 2-foot rise in combination with high tide would flood the west-central portion of the island, an area bordered on the south by the Everglades Golf Course and on the north by the Breakers Golf Course. The flooding would extend east to South County Road.

At 3 feet, both golf courses would be flooded at high tide as well as the span between them, at varying depths.

The Regional Climate Change Compact report estimates that a 1-foot sea level rise could trigger \$4 billion in property value losses in Monroe, Broward and Palm Beach Counties, jumping to more than \$31 billion under a 3-foot rise scenario. It also notes that extreme southern areas of the peninsula are at most risk, while the threat diminishes as you go north.

As a barrier island, Palm Beach “is relatively better off,” said Berry, “but in the long-run it’s still vulnerable.”