

The Shoreline

Vol. 10, No. 25

A Shoreline Community, Pine Knoll Shores, N.C.

October 2015



Election Day
is November 3

See PKS Candidates
on page 8

Beach Renourishment 101

By Brian Kramer

When will we renourish the beach again? This question is one of the most commonly asked of us at town hall, and rightly so. Beach renourishment projects are probably the most important public infrastructure projects in Pine Knoll Shores. They are also the costliest and most complex. Paving streets, replacing bridges and replacing water mains are essential, but an issue with any one of these is not going to alter the landscape of the town. But if our beach eroded to the point where we had 100 feet of land between Salter Path Road and the surf, Pine Knoll Shores would be changed, and not for the better.

Last month the Carteret County Shore Protection Office (SPO) published the annual State of the Beach report. We thought this would be a good opportunity to use this year's report to explain how we plan (which is a relative term when it comes to beach renourishment, mainly due to storms) to keep our beaches healthy. If you hang around town hall for beach-related meetings, you will hear terms like "triggers," "reaches," "delta projects" and "cubic yards of sand." There is nothing magical about any of these, but knowing a bit more about them is key to understanding how they all fit into planning for our next project.

History and background

It is important to know what transpired here in Carteret County following the storms of the late '90s and early 2000s, as this set the framework for how we plan for projects today, and just as importantly, how we plan on *paying* for these projects.

Following hurricanes Fran and Bertha in 1996, Bonnie in 1998, and Floyd in 1999, the beaches of Bogue Banks were severely eroded. Actually, this is an understatement. Our beach strand was devastated, and hundreds of millions of dollars' worth of property in Emerald Isle, Indian Beach, Salter Path and Pine Knoll Shores was in imminent danger. The tourism industry, which is the prime economic driver in Carteret County, was being threatened. As a result, in 2001 leaders of the county formed the Carteret County Beach Commission (CCBC). The mission of the CCBC is to identify and develop plans, strategies and programs to restore and maintain wide sandy beaches and dunes through environmentally sensitive beach nourishment, dune management, vegetation management and sand management principles. The CCBC's working arm is the SPO, which is led by Greg "Rudi" Rudolph. With the SPO and the CCBC, Carteret County has the best beach management structure in North Carolina.

The SPO and the CCBC began to plan the first major beach renourishment project in the county's history. Getting a beach project designed, permitted by the state and federal governments, funded and finally constructed is a considerable task. The county and the island's municipalities were doing this for the first time.

Funding this initial project was an issue. Federal and state funding were not an option, and a bond referendum was voted down within Carteret County. So in Pine Knoll Shores, as in other towns on Bogue Banks, a municipal bond was approved. Pine Knoll Shores borrowed \$8 million from the USDA, and in 2003, 1,276,586 cubic yards (CY) of sand were placed in Pine Knoll Shores (so here is the first mention of a cubic yard). As Rudi

Pine Knoll Shores and Kayak for the Warriors Present Check



The town of Pine Knoll Shores and Kayak for the Warriors (K4TW) recently presented \$75,000 in proceeds from the 2015 fundraiser to Hope For The Warriors. Pictured from left: Pine Knoll Shores Mayor Ken Jones; Melanie Piedra, Kristy Schwartz and Ed Raimo (from Hope For The Warriors); and the Kayak for the Warriors team coordinators, Bud Pitzer, Celeste Lindley and John Dowler. Missing was team coordinator Sam Scudder. Thanks to all who contributed to the success of the 2015 K4TW events and made this donation possible to support our combat-wounded service men and women.—Photo by Dan Law

describes it, a CY can be envisioned as a 3-foot by 3-foot by 3-foot block of sand. (A standard dump truck holds roughly 15 cubic yards of dry sand).

How did we decide how much sand we needed in 2003? Pine Knoll Shores, Emerald Isle and Indian Beach were in very bad shape. Atlantic Beach, the benefactor of sand from dredging at the port in Morehead City, was in much better condition. So we looked at Atlantic Beach, determined how much sand they had, and decided that we at least needed to be at that level. The level of sand in Atlantic Beach was 225 CYs of sand per linear foot (CY/ft.). An explanation: when you are standing approximately at our sand fencing facing the ocean, imagine a one-foot wide path that goes directly toward

(Continued on page 4)

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