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# Ocean Gate's Beach Prisms

Slowing the waves and holding the sand

By Paul Kennedy  
Mayor, Ocean Gate



**F**our years ago a local resident approached me to talk about how the lagoon in front of his home had been filling up with sand, year after year. He introduced me to beach prisms.

**What are beach prisms?** Beach prisms are precast concrete barriers that measure 4 foot tall by 10 foot long. Their triangular slotted design provides the stability and durability needed to withstand major storms and floods. Water can flow through, dissipating wave action, thus allowing sand in the wave to drop out. Because they are not solid; water, plants, and marine animals can move naturally through them. In contrast, stone breakwaters and seawalls are much more disruptive.

Together we looked into this technology and decided to take action.

**Seeking consensus and approvals** Over the next few years, we met with representatives of the USACE (United States Army Corp of Engineers) and the NJDEP. I presented the idea to the

governing body at the time and received their informal approval to move forward with the idea. Next, Ocean Gate applied for a USACE permit and a NJDEP permit to use beach prisms to control sand and water movement.

During the public comment periods, 40 or 50 residents signed an independent petition in favor of the concept. About a year ago representatives from Smith Midland came to a Borough Council meeting and presented the idea of using beach prisms. Smith Midland's consulting engineer, a former USACE chief engineer from the Baltimore office, provided a great insight into their effectiveness. The engineer had also served as a consultant for New Jersey for the Sandy disaster.

The prisms were designed in the 1980s to prevent beach





This lagoon had been filling up with sand. Beach prisms have helped to keep the sand from flowing out of the river.

By mid-December 2013, the prisms were installed in the Toms River near the borough's Anglesea Avenue parking lot, at a cost of approximately \$82,505.

erosion in the Chesapeake Bay. In the past 30 years the prisms have proven to be an economical solution there and across North America. After the presentation a group of residents took a trip to the Chesapeake Bay to learn how effective the prisms have been there. They were impressed with what they saw.

The past four years has been a real struggle to get this project approved by the USACE and the NJDEP. Several studies were done by both groups. After visits by USACE representatives several times

in 2013, and also working very closely with the NJDEP, for all this time—Superstorm Sandy hit. The damage from the storm made it very clear that we needed to move forward with the beach prism project, sooner rather than later.

**A two phase approach** In the summer of 2013, both USACE and NJDEP, approved the project, with a few stipulations. The NJDEP required a two phase implementation. If phase 1 worked, phase 2 could move forward. If not, the borough would be responsible for removing the prisms. The Army Corp of Engineers required that the prisms be installed only between July 1 and December 31, to avoid disrupting the winter flounder run that takes place off the New Jersey coast.

The project went out to bid, and then re-bid. Smith Midland, of Midland, Virginia was awarded the contract in October of 2013. By mid-December 2013, the prisms were installed in the Toms River near the borough's Anglesea Avenue parking lot, at a cost of approximately \$82,505. We placed 35 prisms in the area of most serious beach erosion--where the water was beginning to erode the newly paved borough parking lot. Soon after they were installed, we noticed that the sand is collecting in front of and behind the prisms. The NDEP has said that their office will be visiting sometime in mid-summer to check on the status of the project.

Once the project is approved by the NJDEP, we will put Phase 2 out to bid

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and hopefully get the remaining prisms placed in the other eroding areas.

**Cost-effective protection** The use of beach prisms is the most cost-effective means of protecting shorelines. The prisms have been documented to reduce water turbulence, so they will also play a role in mitigating flooding in future

storms. The borough has plans to replace the 350' bulkhead on our western shoreline. We are also planning to construct a FEMA-approved sand berm all along our mile-long shoreline (other than where prisms are to be placed). In addition, a 6 foot seawall is to be placed down into the beach directly in front of the boardwalk.

I encourage other shore towns to investigate the advantages of beach prisms. By allowing the movement of water plants and animals, the barriers conserve the beach without changing the natural environment as much as other erosion projects. They are proving effective and cost effective in Ocean Gate. **\$**



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