

Beach Prisms reduce shore erosion near Chesapeake Bay home

On September 1, 2006, Hurricane Ernesto roared up Chesapeake Bay and nearly cut Bob and Chris White's bay-front property in Virginia in half.

"I can't believe how powerful the water was," Bob White says. "Our home office was knocked off its foundation, the pool was full of mud and debris, and the water had risen over our tennis court and was threatening the house." Subsequent storms have continued to do additional damage.

The Whites tried several methods to solve their problems: bulkheads, stone revetments, and five wooden groins. More than four years ago, the Whites discovered Beach Prisms, made by Smith-Midland Corp. (SMC).

Beach Prisms are an open precast concrete product that works by reducing the amount of energy in incom-

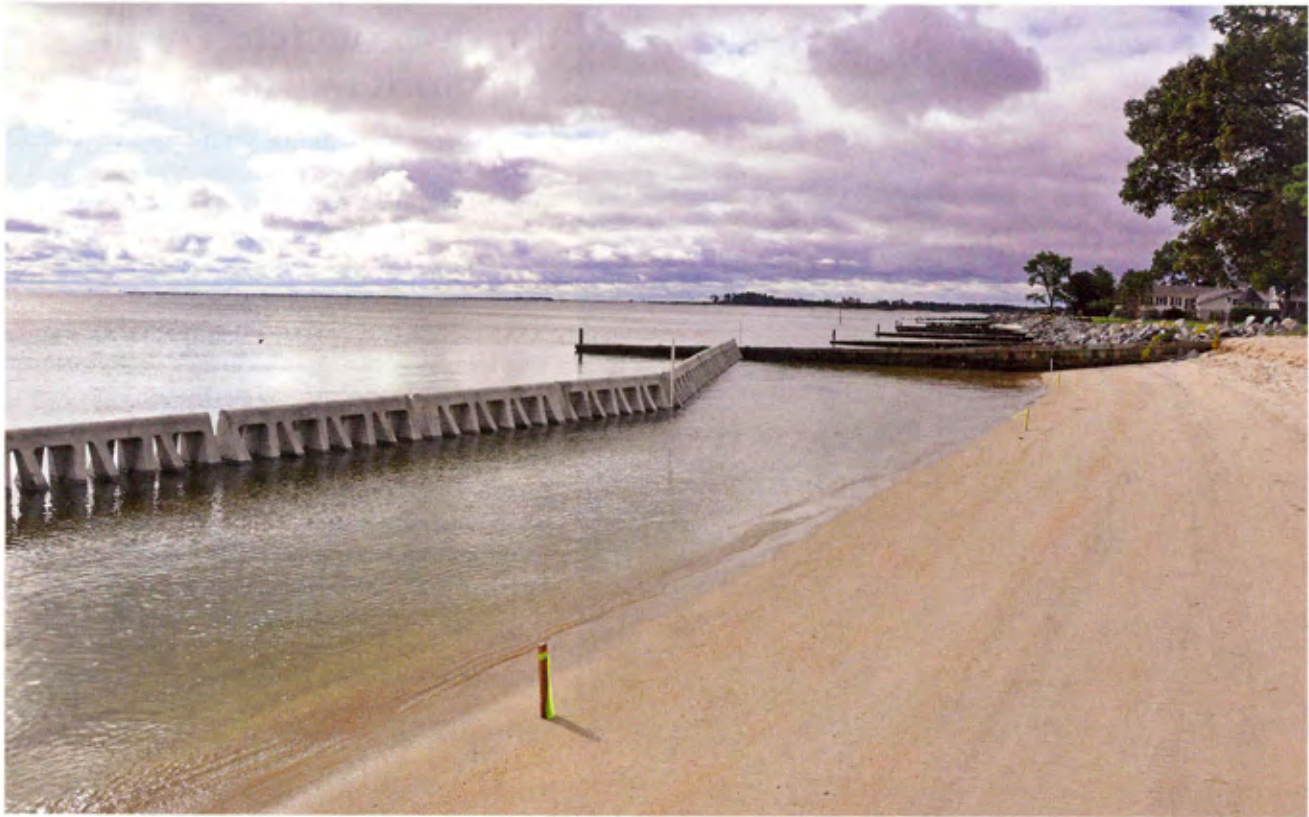
ing waves before they reach the shoreline. Waves pass through the slots in the triangular $4\text{ ft} \times 4\text{ ft} \times 10\text{ ft}$ ($1.2\text{ m} \times 1.2\text{ m} \times 3\text{ m}$) structures.

Several years of working through the permitting process led to a final approval meeting in front of the Virginia Marine Resources Commission (VMRC). John Klein, a consulting coastal engineer working with SMC, presented statistical data to the VMRC representing 20 years of Beach Prism installation and testing. The board voted 11 to 0 in favor of the permit.

Tractor trailers traveling from the SMC plant transferred the Beach Prisms in five loads to a barge. The full installation consisted of 22 pieces of Beach Prism with 6 in. (150 mm) spacing for a total of about 230 ft (70 m) of protection. Each piece was placed parallel to the beach in about 1 ft (0.3 m) of water at low tide. Installation was completed the next day. The Whites hope that this will provide some protection from storm damage and slow or stop the erosion.



A Virginia couple has Beach Prisms installed in their home on Chesapeake Bay to reduce beach erosion. Courtesy of Smith-Midland Corp.



These Beach Prisms in Chesapeake Bay are designed to mitigate beach erosion while allowing marine life to migrate freely. *Courtesy of Smith-Midland Corp.*

The slotted design of the Beach Prism allows water to flow through while dissipating the energy of the waves, thus reducing their impact on the shoreline. The open design also allows for marine life such as fish and turtles to migrate freely. Beach Prisms have been proven in some cases to allow sand to accumulate in front of and behind them.

Beach Prisms are for river- and bay-front property owners who want an alternative to traditional armor stone, or groins and jetties. They are jointly permitted by state and federal agencies, including the Army Corps of Engineers.

—Source: Smith-Midland Corp.