

Most Eastham bay beaches steadily eroding

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EASTHAM —

Most Cape Codders view beach erosion as a problem for waterfront homeowners, but increasingly, towns are taking it up as a public cause.

There are several reasons for that, according to representatives from a Falmouth consulting group that specializes in beach nourishment projects. As part of its annual meeting held at Eastham Town Hall Wednesday evening, the Eastham Forum invited representatives from the Woods Hole Group to talk about the state of the town's beaches.

Robert Hamilton, coastal engineer and vice president of the Woods Hole Group, said the firm – which he described as “a commercial spin-off” of the venerable Woods Hole Oceanographic Institution – is working with a number of Cape towns on beach replenishment projects.

Explaining the impetus behind such projects, Hamilton began with the “three E’s” of beaches: Enjoyment, Economy and Environment. The first “E” is obvious – beaches provide quality of life for most people on the Cape, whether they fish, surf, swim, sunbathe or walk on the beach.

In economic terms, he said surveys found beach erosion is a top concern among tourists, and tourism accounts for 23 percent of jobs on Cape Cod (as opposed to 10 percent nationwide). Tourism on the Cape, he noted, was strong in 2008, with occupancy rates up over last year in both July and September, and level in August. As far as the local economy is concerned, he said, the stakeholders in beaches include towns (which count on beach revenue), property owners, hotels, restaurants and other businesses.

“It’s not just a rich man’s problem,” he said of beach erosion. “It’s a community-wide problem.”

Environmentally, he said, shoreline represents some of the most diverse habitats, for shellfish, shorebirds and many other living things. Beaches, dunes and saltmarsh are affected by erosion, which impacts habitat.

Next, Hamilton presented some figures specific to Eastham regarding long-term erosion rates: 2 feet a year at Cook’s Brook, Thumpertown, Kingsbury and Herring Brook beaches and 1 foot a year at Campground and First Encounter beaches.

Boat Meadow Beach is stable, he said, and Dyer Prince Beach, Eastham’s southernmost beach, is actually gaining 1 to 2 feet per year.

“Unfortunately, it’s moving out of the areas that most people go,” he observed.

Aerial photographs from 1975 and 2005 showed a dramatic difference in the Campground Beach area, with the early photos showing broad beaches and relatively little development and the more recent takes showing many more houses much closer to the shore and a much narrower beach.

As a contrast, he showed some before and after photos of beach nourishment projects designed by the Woods Hole Group, including Barnstable’s Long Beach, adjacent to Craigville Beach, which showed a dramatic improvement with a broadened beach and restored wildlife habitat.

While the beaches on Cape Cod Bay appear protected compared with the Outer Beach, Hamilton said the wave action on the bay is intense, with waves curving around Billingsgate Shoal and pushing sand both north and south of it. “Despite the protection of this coast, there’s a lot of pressure on it,” he said.

Looking at existing efforts to combat erosion, he said structural solutions such as revetments and their softer counterparts like sandbagging are designed to protect the upland area and are often quite effective in doing that, “but they don’t do a whole lot for the beach.” In fact, revetments often contribute to erosion of adjacent beaches, he said.

He said Eastham is to be commended for being one of two towns on the Cape that mandate beach nourishment – or adding sand – as part of the permitting process for structures designed to protect waterfront properties from erosion. But adding sand at individual locations isn’t enough, he said.

The best approach is a well-designed beach replenishment project strategically sited to provide the most benefit over the longest period of time. And since sand is constantly being shifted by the forces of nature, it has to be a long-term project. “Beach nourishment is a commitment,” he conceded.

Who makes that commitment is the first question to be answered in any community considering shoring up its beaches. “Somebody needs to own this problem; there has to be leadership,” he said, whether its from a community group such as the Eastham Forum or elected town officials like the board of selectmen.

(Selectwoman Carol Martin was an attendee at the meeting, which filled the large meeting room at town hall.)

In addition, there must be grass-roots interest and involvement of officials at several levels of government.

Noting the state is now working on an Ocean Plan, he urged Eastham to make sure it has representation on it.

The next step, he said, would be to identify the areas of need, identify impacts beach nourishment would have on resources such as shellfish areas, and do an economic assessment to see whether there would be a cost benefit to nourishing beaches.

If a town does decide to do beach nourishment, he said, the most economic way to do it is to pump sand to the beach from offshore, rather than truck it in.

The community would have to figure out how to fund the project, which, though Hamilton could give no specifics, “can be expensive,” he said. Many communities, he said, develop what amounts to a special tax dedicated to beach nourishment; it is often a combination of a general tax with an assessment on coastal properties.

Questions following the presentation ranged from environmental impacts (“That depends on who you ask,” Hamilton quipped) to specific ideas like a groin to gather sand offshore, which Hamilton said might be a good idea. Several people were specifically interested in the work the Woods Hole Group is doing with the town of Orleans on maintaining Skaket Beach, which is also on Cape Cod Bay. “Is that Eastham’s sand you’re scraping?” one man asked, to laughter. Hamilton replied that while it’s hard to tell, most sand movement in that area is west to east, “so it’s more likely from Sandy Neck.”

Accompanying Hamilton were colleagues Lee Wieshar, Ph.D, an oceanographer and coastal engineer, and Peter Markunas, a coastal engineer. The Woods Hole Group, headquartered in East Falmouth, also has offices in Delaware, Texas and Saudi Arabia, and performs work all over the world.