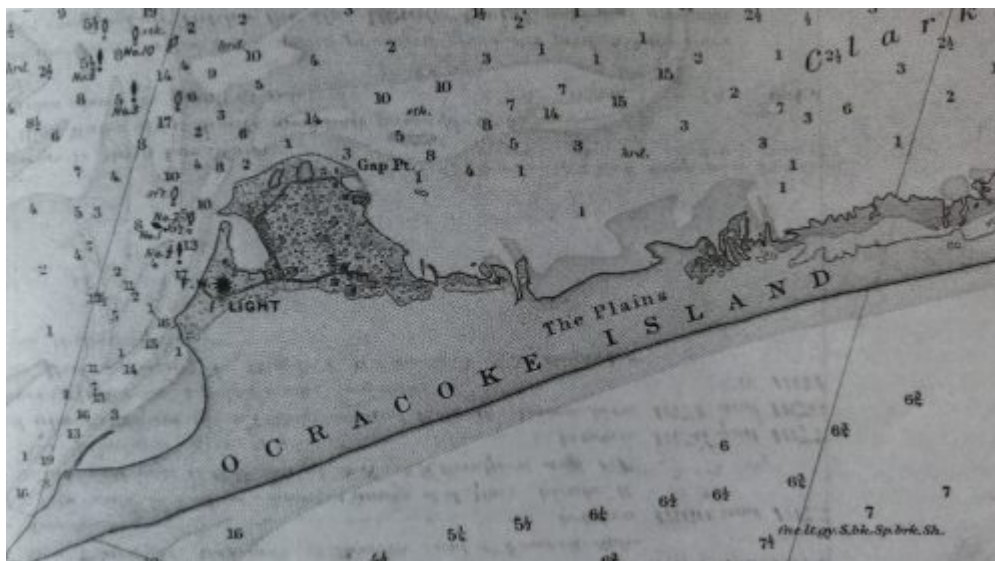


On one of Amy Howard's Ocracoke Ghost & History Walks a number of years ago she was explaining to her group that the highway from Hatteras Inlet to Ocracoke village was completed in 1957, and that that erosion and ocean overwash immediately threatened the new road. To combat the assault from the ocean, the National Park Service and the State of North Carolina constructed a continuous row of dunes between NC Highway 12 and the ocean. Amy explained that two areas in particular were quite vulnerable, the Great Swash, a two-mile-wide swampy area about 10.5 miles NE of the village (in 1958 Hurricane Helene temporarily breached the island there), and the Plains (a two-and one-half-mile-long sandy area from the southern end of the village (about where the Variety Store is today) to the present NPS campground).

Until the early 1960s the Plains was virtually devoid of vegetation, extremely flat, with no dunes or plants. The sand was white, littered with broken shells, and often inundated with standing water. The 1883 Coast Chart below illustrates that the barren Plains at that time reached nearly to the lighthouse.



1883 Chart

When Amy was finished with her explanation, one participant turned to her and asked, “So historically, there weren’t any dunes between the highway and the ocean?”

“Oh, there were isolated dunes on the island,” Amy explained, “more in some places than others, but virtually none at the Great Swash or the Plains. And there certainly was no continuous row of dunes between the where the highway is now and the ocean. Those were man-made.”

With that Amy continued her tour.

At the conclusion of the tour, the young man approached Amy once more. “Really,” he said, “those dunes are artificial?” Amy assured him they are. “Oh man,” he lamented, “I’ve been coming to Ocracoke for years, and I wrote my Master of Architecture dissertation about the ‘natural’ dunes on the island and how they have protected Ocracoke from catastrophic erosion for centuries.” With that, he walked away shaking his head, distraught that he had been so mistaken.

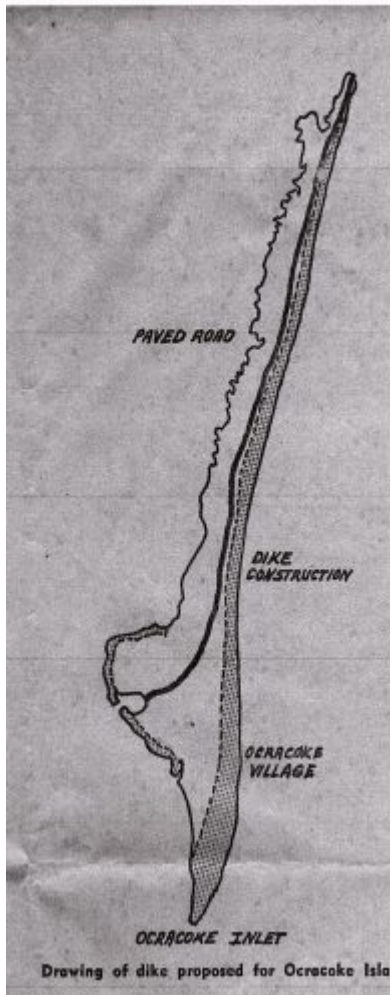
I recently came across a 1963 article in the *Raleigh News and Observer* titled “2-Level Dike Proposed To Save Ocracoke Area.” It begins, “A two-level man-made dune along the ocean front has been proposed by a federal agency as the best way to preserve and save historic Ocracoke Island from the ravages of wind and sea.”

The federal agency mentioned was the U.S. Army Corps of Engineers, with “strong endorsement” of the NC State Department of Water Resources. Hyde County and the National Park Service were “studying the Ocracoke plan with interest.”

The proposal specifically called for a seven-foot-high, fifty-foot-wide “sand barrier” to be constructed 500 feet from the ocean running the entire length of the island. “Directly behind and abutting the first barrier” would be a larger dune (both barriers were referred to as dikes), eleven feet high and fifty feet wide. On top of the second dune would be a four-foot-high sand fence.

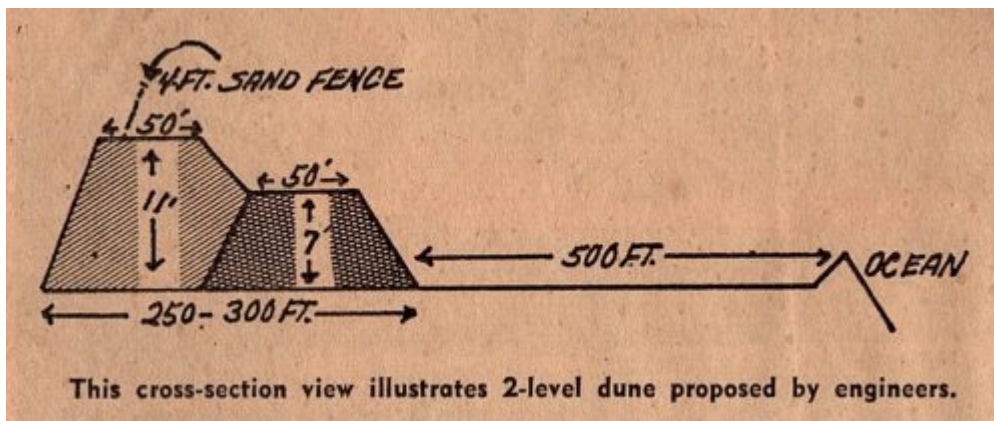
The recommendation also included construction of a sand barrier on the sound side of the island to protect the village.

The drawing of Ocracoke Island below shows the newly constructed NC Highway 12 (bold line) running from Hatteras Inlet to Silver Lake. The dotted lines indicate the proposed dunes to be situated “just seaward of the State highway” and around the north and northwest sound-side shoreline of the village area.



Ocracoke Island

This cross-section view illustrates the 2-level dune proposed by the engineers:



Proposed Dunes

In addition to the “dikes” the Corps of Engineers “recommended that 810,000 cubic yards of sand be dumped in the ocean just offshore at the northern end of the island.” The idea was that the sand would be carried southward by ocean currents to provide “periodic nourishment” in eroded areas. \$1,913,000 of the \$2,180,000 estimated for the complete ocean-side project was to be paid for by the federal government (to protect the National Park) and \$155,000 was to be paid by the State of North Carolina (to protect Highway 12). The federal government was to pay all annual maintenance costs.

The recommended barrier to protect the village was to “run between Springer’s Point and Gap Point.” The cost of \$112,800 was to be divided among the federal government, which owned 22% of the land to be protected, the State of North Carolina, and local sources. All entities acknowledged that “it is doubtful that the small population” of Ocracoke could pay for their share. Hyde County commissioners were studying the report to determine whether the county government could assume the burden.

The barrier around the north and northwest sound-side shoreline was never constructed, but the two parallel man-made dunes between NC12 and the ocean have been (mostly, and with constant re-building) protecting the highway for almost sixty years. The following 1957 photo of the northern banks shows the typical dune construction with use of sand fences.



Dune Construction, 1957 Photo courtesy Cape Hatteras National Seashore

The following photo was taken in 2021 from the NPS campground looking toward the village. This area, once a wide tidal flat, is now covered with vegetation, including grasses, yaupon, myrtle, cedar, and even pines and live oaks.



Dunes NPS to Village

Much of the dune structure on the north end of Ocracoke has been rebuilt numerous times after damage from storms and hurricanes. No one knows how long the dunes can continue to do their job. This photo of NC12 looking south shows ocean overwash in 2009.



Overwash 2009

Coastal geologists have been quick to point out that the man-made dunes have provided a measure of protection, but at a price. Not only is it costly to rebuild the dunes, but as the ocean continually carves away at the dunes the shoreline erodes while the remaining dunes prevent wind-driven sand from being carried across the island to replenish and fortify the sound shore.

Of course, barrier islands are dynamic geological features. Historically, new inlets were periodically being created while older inlets were being filled in. (The six tidal creeks between the NPS campground and the Pony Pasture are almost certainly the remnants of old inlets.)

As our knowledge of coastal geology advances we can only hope that practical and environmentally sensitive solutions can be found to help protect the beautiful island we call home and that so many others love and cherish.