Over the past 30 years, Mason Inlet, in New Hanover County, North Carolina, has steadily migrated southward. Since 1985, the migration has resulted in a loss of 2,200 feet of shoreline at the north end of Wrightsville Beach. The resulting beach erosion threatened not only private homes, but also the nine-story Shell Island Resort Hotel.

A monumental project was constructed to relocate the inlet 3,000 feet north of its January 2002 location to protect the properties, provide sand to nourish the beach along nearby Figure 8 Island, and improve water quality within Mason Creek and the surrounding estuary. New Hanover County contracted Applied Technology and Management, Inc., to design and manage this critical project.

After three years of responding to both state and federal agencies, the permit was issued in December 2001. Construction began January 7th, 2002.

To relocate the inlet, Mason Creek was dredged from its beginning at Banks Channel abutting Figure 8 Island to the Atlantic Intracostal Waterway. The excavated material was transported via pipeline and truck haul to Figure 8 Island’s southern oceanfront beaches and to a stockpile area, where the material was used to infill the existing Mason Inlet.

The new channel was cut through Figure 8 Island using land-based excavators, followed by a dredge. The entire channel dredging process excavated approximately 790,000 cubic yards of beach quality sand from Mason Creek, the sedimentation basin, and the new inlet channel. The existing inlet was closed by using approximately 270,000 cubic yards of the excavated sand to bridge the existing inlet and rebuild the north end of Wrightsville Beach. A temporary sheet pile was constructed at the shoreward position of the new inlet cut to prevent the new inlet from opening prematurely.

The sheet pile in front of the new inlet was removed on March 7th, 2002 to force all tidal flow through the new inlet. The temporary stockpiled sand was pushed into the old inlet to close it. Following the closure of the old inlet on March 14th, 2002, the fill section was further built up and widened.

New Hanover County used hotel and rental property tax revenues to pay the initial inlet relocation costs. The property owners along Figure 8 Island and Wrightsville Beach will reimburse this fund by paying a special assessment on their properties.
In addition to protecting properties on Wrightsville Beach, this project provided sand for beach nourishment at Figure 8 Island. Materials removed from the inlet and sediment basin during maintenance will be used for future beach renourishment as required by either Figure 8 Island or Wrightsville Beach. The Project was completed in April 2002.

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