

# Appendix C: Historic-related Conceptual Design Modifications

**Road North/Bridge South and All Bridge Alternatives.** The Rodanthe bridge portion of these alternatives was revised to locate the intersection with NC 12 approximately 530 feet (161.5 meters) north of the Rodanthe Historic District. The southern terminus is a curved intersection, similar to that designed for the Pamlico Sound Bridge Corridor with Curved Rodanthe Terminus considered in the FEIS. NC 12 traffic would be at-grade as it enters the Rodanthe Historic District. The section of NC 12 roadway between the southern terminus of the bridge portion north to the Refuge border would be maintained as a service road to provide property access to homes and businesses north of the bridge. The original alignment terminated within the district and had been developed for the 2005 SDEIS prior to a revision to the district boundaries with SHPO concurrence in 2006. Moving the alternative from the historic district places the southern terminus of the alternative between the 2050 and 2060 high erosion shoreline. This location does not achieve the project objective of an at-grade NC 12 being no closer than 230 feet west of the 2060 high erosion shoreline. However, NC 12 could be relocated again if the 2060 high erosion shoreline were to occur. The 2060 high erosion shoreline places almost all of the Chicamacomico Life Saving Station and approximately one-half of the Rodanthe Historic District in the Atlantic Ocean. Therefore, should a further relocation of NC 12 be needed under those conditions, the historic resource issue also is no longer expected to exist at that time. The northern terminus of the Rodanthe area bridge with the Road North/Bridge South and the All Bridge alternatives would remain the same, with bridging beginning approximately 2 miles (3.2 kilometers) north of the Refuge's southern boundary and extending into Pamlico Sound before rejoining NC 12 in Rodanthe.

**Phased Approach/Rodanthe Bridge Alternative.** The original design of the Phased Approach/Rodanthe Bridge Alternative included a bridge in Rodanthe that was contained within the existing 100-foot (30.5-meter) easement, with one-way service roads on either side of the bridge being used to provide local access. The alternative terminated approximately 1,560 feet (475.5 meters) south of the Rodanthe Historic District. The bridge was within the district boundaries and adjacent to the boundary of the Chicamacomico Life Saving Station. Because of the visual impacts of the bridge, as well as concerns over the impact of the associated change in access both to the Chicamacomico Lifesaving Station and across the Rodanthe Historic District, the Rodanthe area bridge was shortened to stop at a point approximately 420 feet (128.0 meters) north of the district. The southern end of this bridge would not be brought down to grade; instead, traffic would access the bridge via a two-lane ramp on the west side of the bridge. NC 12 traffic would be at-grade through the Rodanthe Historic District.

The main bridge would not be brought down to grade because of the risk of shoreline erosion. It is the goal of the project to move NC 12 or place it on a bridge such that the at-grade portions of NC 12 would be unaffected under high erosion conditions in 2060. In order to keep the bridge outside the Rodanthe Historic District, it must drop below the elevation of the storm surge in the general area of the 2020 high erosion shoreline and reach existing grade between the 2040 and 2050 high erosion shorelines. Thus, placing this ramp back to grade on one side and continuing the bridge at full height above the storm surge to a point between the 2040 and 2050 high erosion shorelines would reduce the risk to NC 12 of high erosion or an island breach. If high erosion rates manifest themselves or a breach occurs that puts the ramp-to-grade at risk, then a new ramp could be built off the full height bridge and/or the full height bridge could be extended as originally proposed. Again, the 2060 high erosion shoreline places almost all of the Chicamacomico Life Saving Station and approximately half of the Rodanthe Historic District in the Atlantic Ocean. Therefore, should further extensions of an NC 12 bridge be needed under those conditions, the historic resource issue also is no longer expected to exist at that time. The northern terminus of the Rodanthe bridge with the Phased Approach/Rodanthe Bridge Alternative would remain the same; bridging would begin at a point north of the Rodanthe 'S' Curves Hot Spot within the Refuge and extend south into Rodanthe while remaining within the existing 100-foot (30.5-meter) easement.