

Administrative Action
**Revised Environmental Assessment and Section 4(f)
Evaluation**

US Department of Transportation, Federal Highway Administration
North Carolina Department of Transportation

**NC 12 – Rodanthe Breach Long-Term Improvements
Bonner Bridge Replacement Project Phase IIb**

Federal-Aid No. BRNHF-0012(56)
NCDOT Project Definition: 32635
STIP Project No. B-2500B
Dare County, North Carolina

Submitted Pursuant to the National Environmental Policy Act 42 U.S.C. § 4332(2)(c)
and 49 U.S.C. § 303

Cooperating Agencies

US Coast Guard/US Army Corps of Engineers
US Fish and Wildlife Service/National Park Service

5/13/16
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The proposed project is the construction of a bridge to replace the Herbert C. Bonner Bridge in Dare County, the demolition and removal of Bonner Bridge, and improvements to NC 12 between the community of Rodanthe and Oregon Inlet. This revised EA focuses on the improvement of NC 12 in the Rodanthe 'S' Curves Hot Spot. It updates the EA released in 2013 for that project. It includes updates in the project setting, project alternatives, and impact findings. It also identifies a new Preferred Alternative, the Bridge on New Location Alternative with a new alignment.

Comments on this revised Phase IIb EA are due by July 15, 2016 and should be sent to Rodger Rochelle, P.E. at the above address.

NC 12 – Rodanthe Breach Long-Term Improvements Bonner Bridge Replacement Project Phase IIb

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Administrative Action Revised Environmental Assessment

Documentation prepared by:
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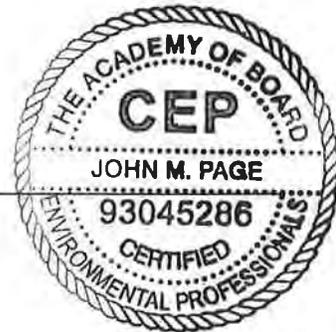
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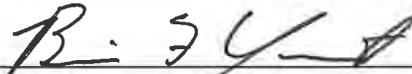


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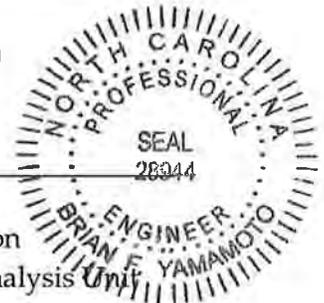
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NC 12 Replacement of the Herbert C. Bonner Bridge

(Bridge No. 11) over Oregon Inlet

Federal-Aid Nos. BRS-2358(15), BRNHF-0012(55), BRNHF-0012(56)
NCDOT Project Definition: 32635
TIP Project Nos. B-2500, B-2500A, B-2500AB, and B-2500B
Dare County, North Carolina

PROJECT COMMITMENTS

The following text lists the Project Commitments for the Bonner Bridge Replacement Project for all phases. This list was last updated in the Construction Consultation for the Phase IIa interim bridge (project phase B-2500AB). New items and revisions are shown in **bold** in the text.

Technical Services Division

1. Navigation **Span Location**. One navigation zone would be built to serve boats passing through Oregon Inlet. The location of the zone would be determined in coordination with the US Army Corps of Engineers (USACE). [Relevant to Phase I only]
2. Bicycle Accommodations. The Cape Hatteras National Seashore (Seashore) management plan supports the use of bicycles along NC 12. All permanent bridges associated with the detailed study alternatives (including the Selected Alternative[s]) would have 8-foot (2.4-meter) wide shoulders that would be safer for bicycle and pedestrian traffic than Bonner Bridge's 2-foot (0.6-meter) wide shoulders. In addition, a bicycle-safe bridge rail on the bridges also would provide increased safety for bicyclists. New permanent roadway would have 4-foot (1.2-meter) paved shoulders, which would be safer for use by bicycle and pedestrian traffic than the existing NC 12's unpaved shoulders.

Technical Services Division and Division 1

3. Use of Work Bridges. During construction of the project, steps taken to minimize turbidity (when possible and practicable) would include the use of work bridges (rather than barges, which would require dredging) for movement of construction equipment in shallow areas where submerged aquatic vegetation (SAV) is present. If SAV is in waters deep enough to float a barge without dredging, the use of a work bridge would not be necessary. Work bridges also would be used to carry construction equipment over intertidal marsh areas (black needlerush and smooth

cordgrass). Dredging generally would only be used in depths less than 6 feet (1.8 meters) where SAV is not present. Work bridges will be used to cross SAV. Neither dredging nor haul roads would be used in SAV.

4. Sedimentation and Erosion Control. All waters in the project area are classified as SA waters (Class A salt waters) with a supplemental classification of High Quality Waters (HQW). The most stringent application of the Best Management Practices (BMPs) is expected where highway projects affect receiving waters of special designation, such as HQW. Also, impacts to adjacent areas of SAV and/or wetlands should be minimized. Therefore, sedimentation and erosion control measures shall adhere to the Design Standards in Sensitive Watersheds [15A NCAC 04B.0124 (b)-(e)]. Prior to construction, **contractors** will submit the proposed sediment and erosion control plans for each stage of construction to the North Carolina Department of Transportation (NCDOT) and permitting agencies for review.
5. Pile Placement. Bridge piles in open water would be jettied to the tip elevation (depth of the tip of the pile). Bridge piles over land would be jettied or driven. Potential damage to wetlands, SAV, Pamlico Sound, and Oregon Inlet from jettied spoils will be minimized to the extent practicable.
6. Use of Bridge Demolition Debris for an Artificial Reef. NCDOT would work with the North Carolina Department of Environmental Quality, Division of Coastal Management (NCDEQ-DCM) to accommodate this desire during demolition planning. Coordination also would be conducted with the National Marine Fisheries Service (NMFS) in association with their regulation of several protected species. [Relevant to Phase I only]
7. Oregon Inlet Fishing Access. NCDOT will install “no fishing” signs to not allow fishing on the catwalks during construction to satisfy NMFS concerns, and for safety reasons. If and when a decision is made to allow fishing on the remnant of the existing Bonner Bridge, Federal Highway Administration (FHWA) will initiate Section 7 consultation with NMFS prior to the “no fishing” signs being removed. [Relevant to Phase I only]

Technical Services Division, Project Development and Environmental Analysis Unit, and Division 1

8. Design Coordination. NCDOT would invite the National Park Service (NPS) and the US Fish and Wildlife Service (USFWS), as well as the other agencies represented on the project’s National Environmental Policy Act/Section 404 of the Clean Water Act (NEPA/Section 404) Merger Team [a full list of agencies on the Merger Team is shown on page 8-6 of the 2008 Final Environmental Impact Statement (FEIS)],

to participate in the development of project design and mitigation strategies as a part of the permit application process for each phase of the project.

9. Dredging. To avoid construction impacts to protected turtles, NCDOT's contractor would use pipeline or clamshell dredging. A hopper dredge would not be used for bridge construction or Bonner Bridge demolition.
10. Disposal of Dredged Material. Prior to construction, during the permit preparation process, FHWA and NCDOT would work with appropriate environmental resource and regulatory agencies to identify the characteristics of dredged material from bridge construction in open water and develop a disposal plan that would minimize harm to natural resources. The appropriate location for dredged material disposal would be determined based on the character of the materials dredged, the availability of disposal sites, and coastal conditions near the time of construction. In addition, as noted in Commitment 25c, the terms and conditions outlined in the *Biological and Conference Opinions* (USFWS, 2008) related to piping plovers specify that "all dredge spoil excavated for construction barge access must be used to augment either existing dredge-material islands or to create new dredge-material islands for use by foraging plovers. This must be accomplished as per the specifications of the North Carolina Wildlife Resources Commission [NCWRC]."
11. Night-time Construction. Because construction activities could occur 24-hours-a-day, construction areas could be lit to daylight conditions at night. NCDOT would work with NCDEQ-DMF, NCWRC, NMFS, NPS, and USFWS to determine other areas near project construction where night lighting would need to be avoided or limited. Night lighting also would not be used close to areas where people sleep, including the campground at the northern end of the project area and the Rodanthe area at the southern end. Night lighting also will meet the requirements specified to protect sea turtles contained within Commitment 26c.
12. Manatee Protection. Construction contracts would require compliance with USFWS's Guidelines for Avoiding Impacts to the West Indian Manatee: Precautionary Measures for Construction Activities in North Carolina Waters (June 2003).
13. Sea Turtle and Smalltooth Sawfish Protection. NCDOT will comply with NMFS's March 23, 2006, *Sea Turtle and Smalltooth Sawfish Construction Conditions* (NMFS, 2006) that restrict in-water construction-related activities when these protected species are observed in the project area. However, NMFS and NCDOT agree that bridge construction or demolition activities do not need to stop when a protected species is sighted in the proximity of construction if the construction activities are not in the water. The in-water moratorium prohibits pile installation and removal and activities associated with bridge construction and demolition when listed species are present in the water, but does not restrict terrestrial activity.

14. Terminal Groin Retention. NCDOT would apply for a permit to retain the groin to protect the south end of the Oregon Inlet bridge. Construction will not be authorized by FHWA prior to issuance of the terminal groin permit.

The permit to retain the terminal groin was received from USFWS on August 9, 2012.

15. Archaeological Resources. **Underwater archaeological studies will be conducted in open water and reviewed with the Office of State Archaeology. If National Register-eligible archaeological remains (e.g., historic watercraft) are found and cannot be avoided, impacts would be mitigated by either recovering the National Register-eligible archaeological remains, bridging the National Register-eligible archaeological remains (i.e. no bridge piles or other parts of the bridge substructure constructed on top of or through the site itself), or a combination of these methods.** If any archaeological resources are encountered during construction, construction work affecting the resource will cease immediately until the resource can be identified and assessed for National Register of Historic Places eligibility.
16. Construction of Future Phases. In phasing the construction of the Parallel Bridge Corridor alternatives (including the Selected Alternative[s]), it is NCDOT's intent to place a high priority on the monitoring and need for implementation of improvements in the three potential hot spot areas. This intent recognizes the need to build in the Rodanthe 'S' Curves [**Phase IIb project area**], Sandbag Area, and Canal Zone hot spots. Final phasing decisions will be developed through interagency collaboration and under the requirements of NEPA as project area conditions warrant.
17. Monitoring Program. NCDOT considers the 2060 high erosion shoreline a reasonable assumption for current planning purposes, but also recognizes that decisions related to implementation of future phases and the specific location of future phases would likely need to evolve with actual geomorphological change relative to the NC 12 easement. With this in mind, NCDOT implemented in 2011 a monitoring and vulnerability forecasting program on Hatteras Island in the project area, as described in Section 3.3.2 of the 2010 Record of Decision (ROD). Monitoring reports that describe current project area conditions and forecast locations of potential roadway vulnerability have been developed annually since 2011.
18. Breach Response-Related Data Gathering Program. Recognizing the possibility that a breach could occur at the southern part of the Refuge prior to completion of Phase II and that four other locations exist in the project area that are geologically susceptible to a breach, NCDOT conducts a breach response-related data gathering program within the Refuge as a part of the monitoring program described under commitment 17.

19. Reduce the Potential Impacts from NC 12 Maintenance Prior to the Completion of Each Phase. Recognizing that storm-related NC 12 maintenance will occur before completion of future phases, particularly before the implementation of improvements in the three hot spot areas, NCDOT would continue to work with the Refuge to reduce potential impacts to the Refuge and NC 12 resulting from NC 12 storm-related maintenance.
20. Atlantic and Shortnose Sturgeon. Conservation measures to protect shortnose sturgeon would include no hopper dredging and measures to minimize habitat degradation. Such measures would include BMPs involving use, storage, and disposal of construction/demolition materials to minimize short-term turbidity or water quality degradation during over-water construction in Oregon Inlet and during periodic maintenance. Construction and demolition activities associated with Phase I of the project would be completed as quickly as possible in order to minimize deterring spawning sturgeon from entering Oregon Inlet. In addition, the project would incorporate BMPs to reduce habitat degradation from stormwater runoff pollution. The same conservation measures will be applied to the Atlantic sturgeon.

Technical Services Division, Project Development and Environmental Analysis Unit, Division 1, Right-of-Way Branch

21. Utilities. Project development and construction activities would be coordinated with utility providers in the project area in order to prevent interruption of local utility services. The following utility providers currently serve the project area: Dare County (water service); Sprint Communications (telephone service); Charter Communications (cable television service); and Cape Hatteras Electric Membership Association (electric power service).

Technical Services Division, Project Development and Environmental Analysis Unit, Division 1, and Geotechnical Unit

22. Use of Explosives During Construction. The use of explosives during construction is not anticipated. If explosives were needed to remove Bonner Bridge's piles, NCDOT would coordinate with the appropriate environmental resource and regulatory agencies to develop a blasting program that would minimize adverse effects to the natural environment.

Project Development and Environmental Analysis Unit

23. Programmatic Agreement. As per the requirements of Section 106 of the National Historic Preservation Act of 1966, FHWA, the North Carolina State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation (ACHP), and NCDOT, along with the consulting parties (Dare County, the North

Carolina Aquarium Society, USFWS, NPS, and the Chicamacomico Historical Association), developed a Programmatic Agreement (PA) stipulating measures that FHWA will ensure are carried out during the design and construction of the Selected Alternative to mitigate adverse impacts to the historic cultural resources. The final PA (see Appendix D of the 2010 ROD) was signed by the signatory agencies on November 15, 2010 and amended in August 2013 (see Appendix E of the Phase IIa ROD). NCDOT would carry out the stipulations in this agreement.

24. Seabeach Amaranth. Since the favored habitat of the seabeach amaranth is highly ephemeral, a survey of the project area would be conducted for the habitat of this species at least one year prior to initiating bridge construction activities. It would occur as needed for each construction phase. **Surveys took place in 2015 for Phase I, IIa, and IIb and will next occur in 2016.**

**Technical Services Division, Project Development and Environmental Analysis Unit,
Division 1, and Bridge Management Unit**

25. Piping Plover. NCDOT will implement the following nondiscretionary measures that include the terms and conditions outlined in the *Biological and Conference Opinions* (USFWS, 2008):

- a. All construction equipment and personnel must avoid all bird closure areas within the Seashore and Refuge.

All future routine maintenance activities of bridge structures that would occur within or adjacent to current or future plover nesting areas must occur outside the nesting season (April 1 to July 15).

All future repair work on bridge structures that would occur within or adjacent to current or future plover nesting areas must occur outside the nesting season (April 1 to July 15) unless emergency or human safety considerations require otherwise. In this event, the area must be surveyed for nesting plovers and avoided to the extent possible.

- b. During the construction of Phases II, III and IV of the Phased Approach/Rodanthe Bridge Alternative (if it is implemented under the NC 12 Transportation Management Plan [Selected Alternative]), keep all construction equipment and activity within the existing right-of-way unless granted approval by the USFWS through a revised protected species Biological Opinion.

For Phase I, do not moor any construction barges within 300 feet (91.4 meters) of the following islands: Green Island, Wells Island, Parnell Island, Island MN, Island C, the small unnamed island immediately east of Island C, Island D, and

Island G (see Figure 1 in the *Biological and Conference Opinions* in Appendix E of the 2008 FEIS).

- c. All dredge spoil excavated for construction barge access must be used to augment either existing dredge-material islands or to create new dredge-material islands for use by foraging plovers. This must be accomplished as per the specifications of the North Carolina Wildlife Resources Commission. If the dredge material is used outside the current defined action area, the action area is assumed to be expanded to cover the beneficial placement of the material.
- d. To the maximum extent practical, while ensuring the safety of the traveling public, limit or avoid the use of road signs or other potential predator perches adjacent to plover nesting or foraging areas. Where signs or other structures are necessary, determine if alternative designs would be less conducive for perching on by avian predators (gulls, crows, grackles, hawks, etc.). For example, minimize or avoid the use of large cantilever signs in favor of smaller and shorter designs.

26. Sea Turtles (green sea turtle, leatherback sea turtle, and loggerhead sea turtle).

NCDOT will implement the following nondiscretionary measures that include the terms and conditions outlined in the *Biological and Conference Opinions* (USFWS, 2008):

- a. All construction equipment and personnel must avoid all marked sea turtle nests.

Construction material and equipment staging areas must not be located seaward of the artificial dune.

All future routine maintenance activities of bridge structures that would occur within or adjacent to current or future sea turtle nesting habitat, and which would require vehicles or equipment on the beach or the use of night lighting (excluding navigation lights required by the US Coast Guard), must occur outside the nesting season (May 1 to November 15).

All future repair work of bridge structures that would occur within or adjacent to current or future sea turtle nesting habitat, and which would require vehicles or equipment on the beach or the use of night lighting (excluding navigation lights required by the US Coast Guard) must occur outside the nesting season (May 1 to November 15) unless emergency or human safety considerations require otherwise. In this event, the area must be surveyed for sea turtle nests and avoided to the extent possible.

- b. Provide an opportunity for USFWS or a USFWS designee to educate construction contractor managers, supervisors, foremen and other key personnel and resident

NCDOT personnel with oversight duties (division engineer, resident engineer, division environmental officer, etc.) as to adverse effects of artificial lighting on nesting sea turtles and hatchlings, and to the importance of minimizing those effects.

- c. During turtle nesting season (May 1 to November 15), use the minimum number and the lowest wattage lights that are necessary for construction.

During turtle nesting season, portable construction lighting must be white or amber-colored LED lights with a predominant wavelength of approximately 650 nanometers (preferred) or low pressure sodium-vapor type (with USFWS approval).

During turtle nesting season, utilize directional shields on all portable construction lights, and avoid directly illuminating the turtle nesting beach at night.

During turtle nesting season, all portable construction lights must be mounted as low to the ground as possible.

During turtle nesting season, turn off all lights when not needed.

- d. For Phases II, III, and IV, as needed to shield the beach on the east from direct light emanating from passenger vehicle headlights, a bridge rail with a 36-inch parapet topped with a bicycle-safe railing will be used.
- e. Avoid retrofitting the bridges and approach roads with permanent light fixtures in the future (excluding navigation lights required by the US Coast Guard).

In addition, NCDOT does not anticipate the use of explosives during construction or demolition of **Bonner** Bridge. NCDOT's contractor will use pipeline or clamshell dredging, rather than a hopper dredge to minimize effects to sea turtles. No permanent light fixtures will be installed on the bridge or the approaches (with the exception of navigation lights as required by the US Coast Guard).

27. Rufa Red Knot. NCDOT will implement the following nondiscretionary measures that include the terms and conditions outlined in the amended *Biological and Conference Opinions* (USFWS, 2015):

- a. To the extent possible, keep all construction equipment and activity within the existing right-of-way. Avoid staging equipment or materials on the beach or adjacent to inlets.
- b. To the maximum extent practical, while ensuring the safety of the traveling public, limit or avoid the use of road signs or other potential predator perches adjacent to red knot roosting or foraging areas. Where signs or other structures, are necessary, determine if alternative designs would be less conducive for

perching on by avian predators (gulls, crows, hawks, etc.). For example, minimize or avoid the use of large cantilever signs in favor of smaller and shorter designs.

Photogrammetry Unit and Project Development and Environmental Analysis Unit

28. Submerged Aquatic Vegetation (SAV) Survey. The dynamic nature of the area around Oregon Inlet and the new Pea Island breach (closed as of May 2013) results in ephemeral habitats, particularly in shallow water and shoreline areas. Consequently, NCDOT has obtained new SAV information annually for use by the contractor in Phase I construction access planning. SAV surveys have been conducted in the Phase IIb project area since 2010. SAV surveys will continue to the extent practicable (safely feasible) during the construction of Phase I and IIb. All surveys for SAV followed and will continue to follow protocols endorsed by the National Oceanic and Atmospheric Administration (NOAA) Fisheries.

Project Development and Environmental Analysis Unit

29. Section 4(f). If a later phase of the Parallel Bridge Corridor with NC 12 Transportation Management Plan Alternative (Selected) requires the use of a Section 4(f) property, then FHWA would complete an additional Section 4(f) analysis prior to FHWA's approval of the later phase. The 2009 Revised Final Section 4(f) Evaluation would be reviewed to verify the status of Section 4(f) resources, the effect(s) from the proposed response strategies on the Section 4(f) resource, "use" determinations, and, if necessary, a revised least overall harm analysis. This was done in the environmental documentation for both Phase IIa and IIb.

Project Development and Environmental Analysis Unit and Division 1

30. Storage Shed Use During Construction. As agreed at Concurrence Point 4A, NCDOT commits to maintaining the ability of Refuge staff to access and use all Refuge facilities during construction of the interim bridge and Phase IIa, including the small storage shed located near the planned intake for the third jetting water source. [Relevant to Phase IIa and the associated interim bridge over Pea Island breach only]
31. Replacement of Public Parking Lot Near Pea Island Breach. Upon completion of construction of the interim bridge, the parking lot on the east side of NC 12 will be removed by NCDOT, along with all construction materials, including concrete, asphalt, contaminated soils, and any other material not naturally belonging on the site. NCDOT will construct, during the construction of Phase IIb, a replacement parking lot at a new site approximately 900 feet north of the northern terminus of the Phase IIb project. The site was selected in February 2016 by the Refuge manager with input from NCDOT. Upon project completion, the maintenance of the parking

lot would be the responsibility of the Refuge. [Relevant to interim bridge over Pea Island breach and Phase IIb only]

32. **Boat Ramp, Associated Parking, and Access to Them.** The existing parking lot (New Inlet Parking Lot) and primitive boat access point on the west side of NC 12 would be fully restored upon completion of construction of the interim bridge. In the case of the Bridge within Existing NC 12 Easement Alternative, the parking lot and primitive boat ramp also would be fully restored upon completion of construction and an access road similar to the one for the parking lot at the Bonner Bridge would be constructed from the southern terminus of the Bridge within Existing NC 12 Easement Alternative bridge to the New Inlet Parking Lot within the existing easement to the greatest extent possible. In order to minimize wetland impacts while providing safe ingress and egress from the boat access drive, NCDOT would construct a turnaround on the east side of the existing easement, as well as a small area outside the easement on the west side of the existing easement. Upon project completion, the maintenance of the driveway and turnaround would be the responsibility of USFWS. [Relevant to Phase IIa and the associated interim bridge over Pea Island breach only]
33. **Sunken Barge Remains.** **The remains of a barge are in Pamlico Sound immediately west of Rodanthe. The new bridge will be designed such that, while the bridge deck will pass over the site, no piles or other parts of the bridge substructure will be located within the site itself, per discussions with the Underwater Archaeology Branch of the Office of State Archaeology. Prior to construction, the construction contractor will buoy the bow and stern of the site to ensure the site's visibility and will not disturb the site during construction.** [Relevant to Phase IIb only]

Project Development and Environmental Analysis Unit and Technical Services Division

34. **Identification of Graves in Rodanthe Cemetery South of Pappy Lane.** NCDOT will conduct research and field surveys to determine precisely where graves are located in this cemetery to ensure no unmarked graves are unintentionally disturbed. [Relevant to Phase IIb only]
35. **Stormwater Management Plan.** To minimize the potential impact of project pollutants, post-construction stormwater control measures would be implemented according to the Post-Construction Stormwater Program (PCSP), including a stormwater management plan developed in association with NCDEQ-DWR and other state and federal environmental resource and regulatory agencies during final bridge design and in the process of obtaining related permits.

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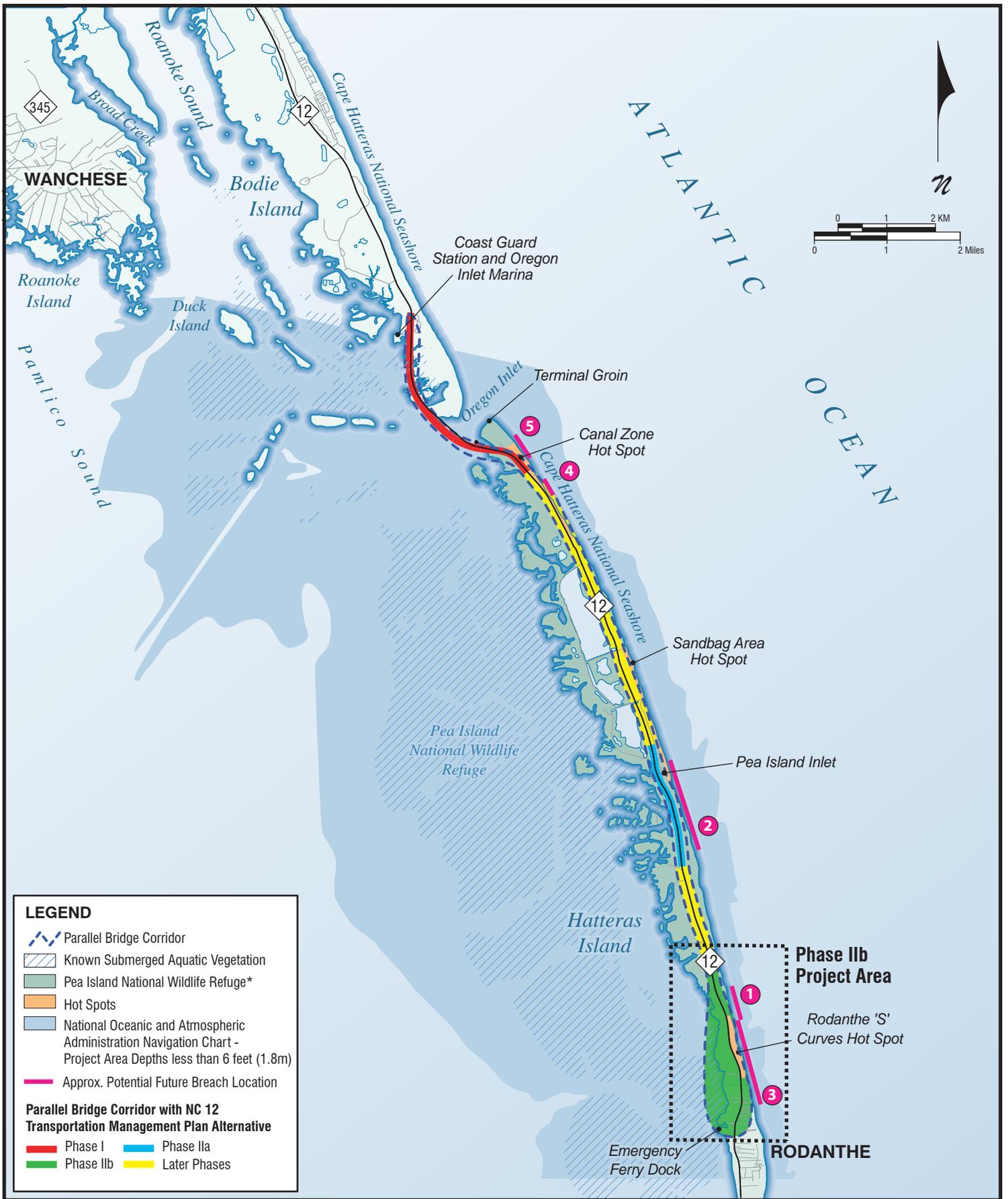
1.0 Introduction

The Parallel Bridge Corridor with NC 12 Transportation Management Plan Alternative (PBC/TMP Alternative) is the Selected Alternative for the NC 12 Replacement of the Herbert C. Bonner Bridge over Oregon Inlet (Bonner Bridge Replacement Project), which is included in the State Transportation Improvement Program (STIP) as STIP Project No. B-2500. The components of the PBC/TMP Alternative are detailed in the December 2010 Record of Decision (ROD). It consists of Phase I, which is the replacement of the Bonner Bridge over Oregon Inlet, and future phases that provide for the long-term maintenance of NC 12 from Oregon Inlet to Rodanthe. Construction on Phase I of the PBC/TMP Alternative, the replacement of Bonner Bridge began in March 2016. A new assessment of potential alternatives for long-term Phase IIa options is being prepared.

The project area for the Bonner Bridge Replacement Project (B-2500) is shown in Figure 1, along with the locations of Phases I and II (both IIa and IIb) of the PBC/TMP Alternative. The Phase IIb (B-2500B) project area also is shown in Figure 1. Figure 1 also shows the PBC/TMP Alternative, as defined in the 2010 ROD.

As discussed in Section 3.3.2 of the 2010 ROD, the PBC/TMP Alternative did not specify a particular action at that time on Hatteras Island beyond the limits of Phase I because of the inherent uncertainty in predicting future conditions within the dynamic coastal barrier island environment. Instead, the PBC/TMP Alternative addresses the study and selection of future actions on Hatteras Island beyond the limits of Phase I through a comprehensive NC 12 Transportation Management Plan (TMP). The TMP is guiding the implementation of future phases of the project through 2060. By actively monitoring the conditions in the Bonner Bridge Replacement Project (B-2500) project area and delaying final decision-making as set forth in the TMP, the environmental impacts beyond Phase I can be better quantified, minimized, and mitigated. This process is analogous to a tiered National Environmental Policy Act (NEPA) study, in that the entire end-to-end impacts have been studied, but the detailed selection of a portion of the action is being delayed. The measures incorporated into the TMP to assist in the study and selection of future actions on Hatteras Island beyond the limits of Phase I are described in detail in Section 1.3.

The project phase under consideration in this document is Phase IIb of the PBC/TMP Alternative. A beach nourishment project was completed by the North Carolina Department of Transportation (NCDOT) in 2014 in the Phase IIb project area as an interim measure to help maintain NC 12 until a permanent project could be selected and built. In addition to the measures incorporated into the TMP related to guiding the implementation of future phases of the PBC/TMP Alternative, Project Commitment #16 (as updated in this revised Phase IIb EA) indicated that final decisions on future phases of the PBC/TMP Alternative would be developed through interagency collaboration and under the requirements of NEPA as project area conditions warrant.



**PARALLEL BRIDGE CORRIDOR WITH NC 12
TRANSPORTATION MANAGEMENT PLAN ALTERNATIVE**

Figure
1

Hurricane Irene hit the North Carolina coast on August 27, 2011, and breached NC 12 in two locations: in northern Rodanthe at the Rodanthe ‘S’ Curves Hot Spot (the “Rodanthe breach”) and within the Refuge approximately 6 miles south of Oregon Inlet (the “Pea Island breach”). Hurricane Irene was a powerful and destructive tropical cyclone that affected a significant portion of the east coast of the United States, as well as the Caribbean.

As a result of the damage caused by the storm within the Bonner Bridge Replacement Project (B-2500) project area and the temporary nature of the current repairs, the NCDOT initiated Phase II (B-2500A and B-2500B) of the Bonner Bridge Replacement Project (B-2500) to implement long-term improvements to NC 12 in the two breach areas pursuant to the 2010 ROD. An Environmental Assessment (EA) was released in February 2013 and a ROD was released in October 2013 for the Pea Island breach area (B-2500A or “Phase IIa”). A separate EA was released in 2013 to fulfill the requirements of NEPA for the Rodanthe breach area (B-2500B or “Phase IIb”). The purpose of this revised Phase IIb EA is to update the 2013 EA to reflect decisions made since 2013, including two new alignments for the Bridge on New Location Alternative. The proposed Phase IIb is consistent with the objectives for later phases of the PBC/TMP Alternative as described in Section 3.3.2 of the 2010 ROD.

The Bonner Bridge Replacement Project (B-2500) project area shown in Figure 1 starts at the southern tip of Bodie Island and extends south to the community of Rodanthe. The boundaries of the project area were chosen to include the Bonner Bridge over Oregon Inlet, as well as NC 12 between Oregon Inlet and the community of Rodanthe, an area that is at risk because of shoreline erosion. The Phase IIb project area includes the area between Myrna Peters Road (SR 1492) in Rodanthe to approximately 1.8 miles north of the Pea Island National Wildlife Refuge border. This area includes the Rodanthe breach that was created by Hurricane Irene in August 2011, as well as the Rodanthe ‘S’ Curves Hot Spot and two areas identified in the 2008 Final Environmental Impact Statement (FEIS) as geologically susceptible to breaches (see Figure 1).

1.1 Purpose of the Revised Environmental Assessment

The purpose of this revised Phase IIb EA is to present updates in the project setting, project alternatives, and impact findings that have occurred since the original EA was released in December 2013. It also presents a new Preferred Alternative, the Bridge on New Location Alternative. Updates since the 2010 ROD for the PBC/TMP Alternative was issued on December 20, 2010 that were presented in the 2013 EA also are presented in this revised Phase IIb EA. This revised Phase IIb EA is established on the previous NEPA documentation for the Bonner Bridge Replacement Project (B-2500) as its basis.

The previous NEPA documentation includes:

- Final Environmental Impact Statement (FEIS) and Section 4(f) Evaluation signed in September 2008 (2008 FEIS).
- Revised Final Section 4(f) Evaluation signed in October 2009.
- Environmental Assessment signed in May 2010 (2010 EA).
- Record of Decision that selected the PBC/TMP Alternative issued in December 2010 (2010 ROD).
- Environmental Assessment for Phase IIa signed in February 2013 (Phase IIa EA).
- Record of Decision for Phase IIa issued in October 2013 (Phase IIa ROD).
- Environmental Assessment for Phase IIb signed in December 2013 (Phase IIb EA).

The purpose of this revised Phase IIb EA also is to provide documentation of compliance with NEPA in accordance with the PBC/TMP Alternative. The limits of the Phase IIb project area in the context of the PBC/TMP Alternative, as defined in the 2010 ROD, are shown in Figure 1. This revised Phase IIb EA includes the following:

- A description of the Phase IIb alternative screening process, including the steps followed (including scoping), alternatives considered (including alternative alignments with the Bridge on New Location Alternative developed in response to environmental resource and regulatory agency comments), screening findings, and several additional studies conducted in the project area (including submerged aquatic vegetation [SAV] surveys conducted since the release of the 2013 Phase IIb EA).
- A description of the detailed study alternatives for Phase IIb (Bridge within Existing NC 12 Easement Alternative and Bridge on New Location Alternative) that were selected by the project's NEPA/Section 404 Merger Team for detailed study. (See Section 6.2 for a description of the Merger Team process and Section 6.2.6 of the Phase IIa EA for a description of the November 14, 2012 Merger Team meeting at which these two alternatives were selected.) The decisions at the November 14, 2012 meeting relevant to Phase IIb are described in Section 6.2 of this revised Phase IIb EA. The Merger Team concurrence forms for Phase IIb are included in Appendix A of this revised Phase IIb EA. Two new Bridge on New Location Alternative alignments developed after the release of the 2013 Phase IIb EA in association with resource agencies to reduce impacts to SAV in Pamlico Sound also are described.

- Identifies the 2014B Bridge on New Location Alternative as the Preferred Alternative. The 2013 EA identified the Bridge within Existing NC 12 Easement as the Preferred Alternative.
- An update of the assessment of the Phase IIb detailed study alternatives, including a description of changes in the environmental setting since the release of the 2010 ROD and 2013 Phase IIb EA; a description of the impacts of the detailed study alternatives; a discussion of costs and financing; and a discussion of the effects that the changes in setting, Phase IIb impacts, and costs and financing findings have on the Bonner Bridge Replacement Project (B-2500) as a whole. Changes in the environmental setting since the release of the 2010 ROD are primarily associated with on-going beach erosion and storm activity, including the formation of the Rodanthe breach during Hurricane Irene in August 2011 (which was closed by NCDOT during repairs to NC 12) and on-going challenges of keeping NC 12 open at the Rodanthe 'S' Curves Hot Spot during storm events. No notable changes in the project setting have occurred since the release of the 2013 Phase IIb EA. However, additional wildlife species have been listed as threatened and endangered and additional information on bird and SAV presence has been gathered.
- A revised evaluation of the October 2009 Revised Final Section 4(f) Evaluation (Revised 4(f) Evaluation) that includes: a summary of the findings from the October 2009 Revised 4(f) Evaluation, a brief description of the proposed detailed study alternatives for Phase IIb, a description of the four Section 4(f) properties in the Phase IIb project area, a discussion of the impacts to those Section 4(f) properties (a use or constructive use would occur at only one of the three properties), an analysis of avoidance alternatives, the least harm analysis, and all possible planning to minimize harm.
- A summary of public and agency scoping conducted during the consideration of Phase II, including responses to scoping comments directly associated with Phase IIb. The public and agency scoping program for Phase II was described in detail in Chapter 6.0 of the Phase IIa EA. Responses to scoping comments related to Phase IIa and Phase II in general also were presented in that document. Comments related to Phase IIb that were raised at the Phase IIa public hearings and during the Phase IIa comment period also are presented.
- A summary of the public hearings held in January 2014 on the 2013 Phase IIb EA and responses to oral and written comments received from the public, non-governmental organizations, local government, and federal and state agencies on the findings of the 2013 Phase IIb EA. Some of the changes in this revised Phase IIb EA were in response to comments made on the 2013 Phase IIb EA.
- An analysis of and preliminary conclusion on whether or not there is a need to prepare a supplemental Environmental Impact Statement (EIS).

The revised EA also takes into account the stipulations related to Phase IIb included in an April 30, 2015 litigation settlement agreement between the Federal Highway Administration (FHWA), NCDOT, North Carolina Department of Environmental Quality, Division of Coastal Management (NCDEQ-DCM), and the Defenders of Wildlife and National Wildlife Refuge Association. The stipulations did not predetermine the choice of the Bridge on New Location Alternative as the Preferred Alternative. At the time of this agreement NCDEQ was called the North Carolina Department of Environment and Natural Resources

The findings contained within this revised Phase IIb EA and subsequent review of this revised Phase IIb EA by the public and environmental resource and regulatory agencies will be used to determine whether or not these changes or circumstances would result in significant environmental impacts in the Phase IIb project area that were not evaluated in the 2008 FEIS, the 2010 EA, the 2010 ROD, and 2013 Phase IIb EA, as well as to finalize a Selected Alternative for Phase IIb. If the agency conclusion is that these changes or circumstances would result in significant environmental impacts not evaluated in the previous NEPA documentation, then a supplemental EIS will be prepared.

FHWA and NCDOT will make this revised Phase IIb EA available to provide resource agencies and the public an opportunity to review and comment. Comments received will be reviewed and taken into account prior either to the determination to prepare a supplemental EIS or to the approval of a ROD for Phase IIb, which will identify the Selected Alternative for Phase IIb.

1.2 Purpose and Need for the Bonner Bridge Replacement Project (B-2500)

As documented in the 2008 FEIS, replacement of the Bonner Bridge and associated improvements to NC 12 between Oregon Inlet and Rodanthe is needed for three reasons:

1. Continued demand for convenient daily and emergency access across the Oregon Inlet is expected.
2. The natural channel or gorge through the Oregon Inlet migrates. A replacement bridge needs to provide spans of sufficient height and width for navigation through the anticipated area of future natural channel migration, helping to reduce future dredging needs, dredging impacts, and the cost of dredging.
3. The southern terminus of the Bonner Bridge is north of portions of NC 12 currently threatened by shoreline erosion and overwash. Placing the southern terminus of a replacement bridge (or incorporating a long-term NC 12 maintenance and protection project) south of these areas will reduce the frequency of maintenance of these threatened segments of NC 12.

The purposes of the proposed project are to:

- Provide a new means of access from Bodie Island to Hatteras Island for its residents, businesses, services, and tourists prior to the end of Bonner Bridge's service life.
- Provide a replacement crossing that takes into account natural channel migration expected through year 2050 and provides the flexibility to let the channel move.
- Provide a replacement crossing that will not be endangered by shoreline movement through year 2050. (All alternatives were ultimately developed for a service life through 2060.)

1.3 Description of PBC/TMP Alternative

The PBC/TMP Alternative was identified in the 2010 ROD as the Selected Alternative for the Bonner Bridge Replacement Project (B-2500). See Figure 1. The PBC/TMP Alternative includes the replacement of the existing Bonner Bridge with a new Oregon Inlet bridge parallel to and west of the Bonner Bridge as Phase I of the project, as well as the Phase IIa project selected in the Phase IIa ROD. A design-build contract for Phase I was awarded in July 2011. Construction is expected to start in 2016.

The PBC/TMP Alternative calls for the study and selection of future actions on Hatteras Island beyond the limits of Phase I through a comprehensive NC 12 Transportation Management Plan. The PBC/TMP Alternative includes the following measures described in Section 3.3.2 of the 2010 ROD beginning on page 12:

- NCDOT will fund and implement an on-going coastal monitoring program on Hatteras Island within the project study area (i.e., Oregon Inlet to Rodanthe). The data to be gathered includes the extent and location of geomorphological features, the relationship of NC 12 to those features, overwash occurrences, NC 12 maintenance data, dredge disposal and beach nourishment projects undertaken, and storm event data. The results presented in the monitoring program's annual reports will be used to determine when planning of future phases of the project should begin. The program was initiated in early 2011.
- NCDOT will fund and implement a periodic Refuge habitat/NC 12 vulnerability forecasting study in consultation with the US Fish and Wildlife Service (USFWS) with at least a five-year recurrence. Through this program, NCDOT and USFWS will work together to develop and assess alternative future scenarios including possible site-specific events and remedies. The results of the coastal monitoring program to date have identified sections of NC 12 that may be vulnerable to storm damage based on multiple evaluation criteria, including island width, dune crest elevation, and the distance between the roadway and the ocean shoreline. NCDOT is currently working with the USFWS on the modeling process to be used to forecast the

corresponding changes in Refuge habitat over time, which will be used to identify vulnerable portions of the Refuge over the life of the Bonner Bridge Replacement (B-2500) project.

- NCDOT and FHWA will use the results of the coastal monitoring program and the periodic Refuge habitat/NC 12 vulnerability forecasting study to determine when the environmental review for each phase (e.g., Phase III) should be initiated and what alternative actions should be studied in detail. This assessment will be performed after the completion of each report prepared as part of the coastal monitoring program and after each iteration of the vulnerability study. In other words, based on the measures included in the PBC/TMP Alternative, the conditions in the Bonner Bridge Replacement Project (B-2500) project area will be constantly re-assessed to determine whether the next project phase should be implemented until the full PBC/TMP Alternative is completed.
- It is anticipated the NEPA/Section 404 Merger Process will be used to study, select, and finalize future phases. The NEPA/Section 404 Merger Process is described in Section 6.2.

2.0 Description of Phase IIb Alternatives Analysis

2.1 NC 12 Alternatives Included in the Parallel Bridge Corridor with the PBC/TMP Alternative

The alternatives listed below were previously assessed within the Parallel Bridge Corridor in the 2008 FEIS and 2010 EA. They are included in the PBC/TMP Alternative as potential phases beyond Phase I and are representative of the range of potential impacts of the PBC/TMP Alternative. Section 2.10 of the 2008 FEIS describes these Parallel Bridge Corridor alternatives in detail. In addition, Section 2.1 of the 2010 EA describes updates to the designs of several of these alternatives so as to address agency concerns about impacts to the Rodanthe Historic District. These PBC/TMP Alternatives are:

- Nourishment Alternative – NC 12 would remain in its current location and beach nourishment (combined with dune enhancement) would be used to maintain an adequate protective beach and dune system. Nourishment would occur in four locations, likely repeated at four-year intervals.
- Road North/Bridge South Alternative – NC 12 would be relocated as a road west of the forecast 2060 high-erosion shoreline in the north end of the Refuge. At the south end of the Refuge and in Rodanthe, NC 12 would be placed on a bridge west of Hatteras Island.
- All Bridge Alternative – NC 12 would be relocated onto a bridge west of the forecast 2060 high-erosion shoreline in the north end of the Refuge. At the south end of the Refuge and in Rodanthe, NC 12 would be placed on a bridge west of Hatteras Island.
- Phased Approach Alternatives – NC 12 would be elevated in its current easement onto a series of bridges within the Refuge and in Rodanthe. There are two options for the Phased Approach in Rodanthe. The Phased Approach/Rodanthe Nourishment Alternative includes a bridge that ends just south of the Refuge boundary and the use of beach nourishment to stabilize NC 12 in Rodanthe. The Phased Approach/Rodanthe Bridge Alternative includes a bridge in Rodanthe that ends just north of the Rodanthe Historic District (no beach nourishment). The Selected Alternative in Phase IIa, the Bridge within Existing NC 12 Easement Alternative, elevates NC 12 in its current easement within the Refuge near the Pea Island breach.

All of these alternatives remain potential options for future phases, reflecting several basic approaches to addressing project need, including: addressing the threat to existing

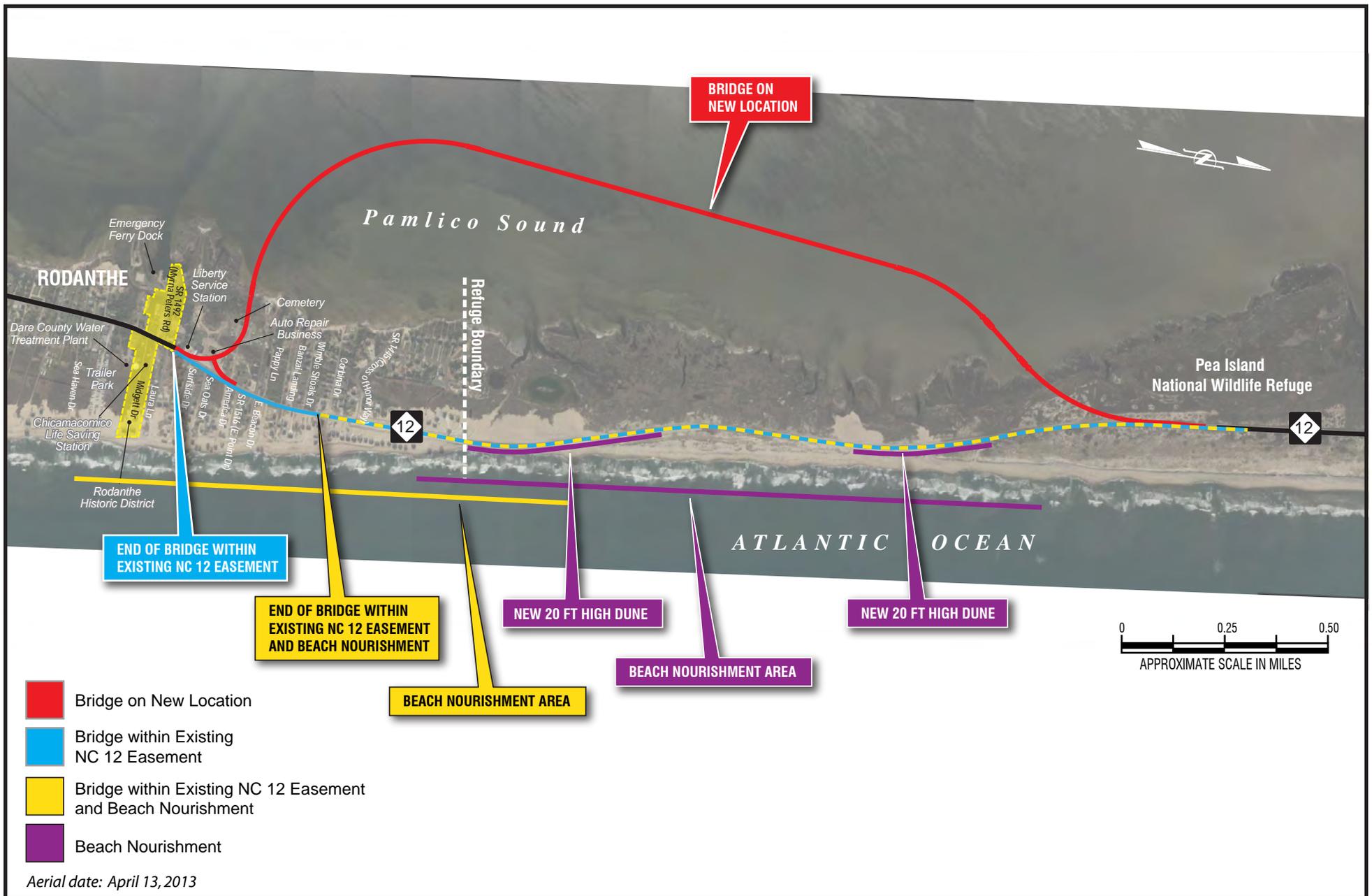
NC 12 by protecting the road from the natural forces (e.g., ocean overwash and beach erosion) that create the need for improvements, moving the road west on a road away from the shoreline affected by current and future erosion, and moving NC 12 to a bridge either in the existing easement or west away from the shoreline affected by current and future erosion.

Based on the original alternatives listed above, four alternatives were considered as possible long-term improvements for the Phase IIb Rodanthe breach study area. As a Phase IIb alternative, all four alternatives would extend from within the Refuge south to the intersection of NC 12 and Myrna Peters Road (SR 1492) in Rodanthe. This distance includes the Rodanthe 'S' Curves Hot Spot and two areas identified in the 2008 FEIS for this study area as geologically susceptible to breaches (see Figure 1). The four alternatives considered for study in the Rodanthe breach study area are:

1. Beach Nourishment
2. Bridge on New Location (from Road North/Bridge South and All Bridge alternatives)
3. Bridge within Existing NC 12 Easement (part of Phase II of Phased Approach/Rodanthe Bridge Alternative)
4. Bridge within Existing NC 12 Easement and Beach Nourishment (part of Phase II of Phased Approach/Rodanthe Nourishment Alternative)

In the remainder of this revised Phase IIb EA, these alternatives will be identified by their Phase IIb descriptive names above rather than the names used in previous environmental documentation. These four alternatives, which were assessed in the 2008 FEIS and 2010 EA, are illustrated in Figure 2.

This revised Phase IIb EA does not address alternatives to the PBC/TMP Alternative that were suggested during scoping for Phase II (i.e., the Pamlico Sound Bridge Corridor, the Ferry Alternative, a bridge from Rodanthe to either Stumpy Point or Roanoke Island, and the Seven-Mile Bridge Alternative). Section 2.3 of the Phase IIa EA describes these alternatives and the reasons each was not studied in detail in Phase II. Appendix C of the Phase IIa ROD responds to additional comments advocating these alternatives that were received during the public review process for the Phase IIa EA. Consideration of these comments did not result in a change in the decision not to study these alternatives in detail for Phase II.



PHASE IIb ALTERNATIVES CONSIDERED

Figure
2

2.2 Scoping

Scoping activities completed as part of Phase II included an October 18, 2011 Merger Team meeting, an October 2011 Peer Exchange meeting, and three Citizens Informational Workshops:

- The October 18, 2011 Merger Team meeting was an informational/scoping meeting. The purposes of the meeting were for NCDOT to inform the Merger Team members about the initiation of Phase II following Hurricane Irene, as well as to allow agency representatives to provide scoping comments on impact issues and alternatives related to the two breach sites (i.e., Pea Island breach and Rodanthe). The action items identified at the meeting were to: further address the merits of a Ferry Alternative (see Section 2.3.2 of the Phase IIa EA), consult with the National Marine Fisheries Service (NMFS) under Section 7 of the Endangered Species Act (ESA) of 1973 regarding the Atlantic sturgeon (see Sections 4.1.4 and 4.2.4.4 of the Phase IIa EA and Section 4.1.6 and 4.2.5.4 of this revised Phase IIb EA), revisit the cost and financing of a bridge in the Pamlico Sound Bridge Corridor (see Section 2.6.1 of the Phase IIa EA), and consider a “Seven-Mile Bridge Alternative” (see Section 2.3.4 of the Phase IIa EA). This meeting is described in Section 6.2.2 of the Phase IIa EA.
- The purposes of the October 24 and 25, 2011 Peer Exchange meeting were to get feedback from a panel of coastal scientists and engineers on the four Parallel Bridge Corridor alternatives under consideration for the Phase IIa and IIb project areas, as well as to get their suggestions on other potential alternatives for consideration (see Section 2.6.2 of the Phase IIa EA for a summary of the Peer Exchange meeting). In response to this request, the USFWS-Refuge representative suggested a “Seven-Mile Bridge Alternative” as a possible additional option. The USFWS-Refuge representative also mentioned this option at the October 18, 2011 Merger Team meeting. Section 2.3.4 of the Phase IIa EA presents a detailed discussion of the Seven-Mile Bridge Alternative, including the additional coordination that took place with USFWS-Refuge related to this alternative).
- Citizens Informational Workshops were held in Manteo (December 5, 2011) at the Dare County Administration Building, in Rodanthe (December 6, 2011) at the Rodanthe-Waves-Salvo Community Center, and in Ocracoke (January 5, 2012) at the Ocracoke Community Center. The purposes of the three workshops were to provide the public with an opportunity to review and revisit the alternatives considered in the 2008 FEIS and the 2010 EA, to consider their potential implementation at the two breach sites, and to suggest other alternatives that might be considered. Environmental issues also were discussed. These workshops are described in Section 6.1.1 of the Phase IIa EA. Scoping comments were made related to project need and timing, reconsideration of the Pamlico Sound Bridge Corridor, reconsideration of a Ferry Alternative, consideration of bridges to Rodanthe

originating at either Stumpy Point or Roanoke Island, potential impacts and merits of relocating NC 12 on a bridge either in a new NC 12 easement (within the Refuge or Pamlico Sound) or in the existing easement, potential impacts and merits of relocating NC 12 as a surface road, potential impacts and merits of beach nourishment, concerns about the length of the temporary bridge, utility relocation along NC 12, the potential impacts of a “Seven-Mile Bridge” Alternative, and the legality of phased decision-making. Workshop materials and public scoping comments are included in Appendix B. These items also appeared in Appendix B of the Phase IIa EA.

- Public Hearings were held to obtain public input on the Phase IIa EA in Manteo (March 11, 2013) at the Dare County Administration Building, in Rodanthe (March 12, 2013) at the Rodanthe-Waves-Salvo Community Center, and in Ocracoke (March 13, 2013) at the Community Center. Public comments also were made on Phase IIb during the Phase IIa Public Hearings (see Appendix C). These comments included: an inquiry about the possibility for an emergency bridge solution prior to implementation of Phase IIb, immediate need for beach nourishment to address challenges with keeping NC 12 open at the Rodanthe ‘S’ Curves Hot Spot, preference for an immediate long-term solution that would support the community, preference for an immediate short-term solution that would support tourism until a permanent solution is reached, concerns about impacts to businesses properties under each of the Phase IIb alternatives, reconsideration of beach renourishment to sustain recreation in the Rodanthe area, request to consider alternatives that would further reduce the visual impact of a bridge in Pamlico Sound, opposition to a bridge within the existing NC 12 easement, preference for an alternative that would bypass Rodanthe to the west in Pamlico Sound, and opposition to short-term cosmetic fixes.

2.3 Other Alternatives Considered Based on Public and Agency Comment During Scoping

Some public and agency scoping comments received at and following the December 2011 and January 2012 Citizens Informational Workshops for Phase II suggested that three alternatives previously rejected as detailed study alternatives be revisited: the Pamlico Sound Bridge Corridor Alternative, the Ferry Alternative, and a bridge from Rodanthe to either Stumpy Point or Roanoke Island. A fourth, the Seven-Mile Bridge Alternative, was suggested in the context of agency scoping. These alternatives were all re-considered or considered. Detailed discussions of the analyses for each alternative are provided in the Phase IIa EA in the following sections:

- Section 2.3.1 – Pamlico Sound Bridge Corridor
- Section 2.3.2 – Ferry Alternative

- Section 2.3.3 – Bridge from Rodanthe to Either Stumpy Point or Roanoke Island
- Section 2.3.4 – Seven-Mile Bridge Alternative

The conclusion was reached that all four alternatives are unreasonable because they do not meet the project purpose and need, are not affordable, and/or because of potential environmental impacts. Appendix C of the Phase IIa ROD responds to additional comments advocating the first three alternatives that were received during the public and agency review process for the Phase IIa EA. The responses to those comments re-affirmed the reasons each was not a reasonable alternative.

2.4 Public Hearings on the 2013 Phase IIb EA

Four Combined Public Hearings were held with respect to the 2013 Phase IIb EA at the Ocracoke Community Center (January 7, 2014), Rodanthe-Waves-Salvo Community Center in Rodanthe and Cape Hatteras Secondary School in Buxton (January 8, 2014), and at the Dare County Administration Building in Manteo (January 9, 2014). The public hearing at Ocracoke was an open house without a formal presentation. The public hearing in the Rodanthe area consisted of an open house in Rodanthe followed by a formal presentation in Buxton at the larger Cape Hatteras Secondary School. The Manteo hearing was an open house followed by a formal presentation. Citizens were given the opportunity to comment and ask questions following the two formal presentations. An opportunity to record oral comments was provided in Ocracoke.

The hearings presented NCDOT's detailed study alternatives for long-term improvements in the Rodanthe Breach area (Phase IIb). A slideshow and handouts were provided. The open house meeting rooms included multiple stations that were manned with project staff to field questions and comments from the public. The primary stations focused on the proposed Phase IIb detailed study alternatives, including hearing maps and visualizations. Informational stations on other NC 12 projects and concerns not directly associated with Phase IIb included: the status of NC 12 Pea Island long-term improvements (Phase IIa), the status of the Oregon Inlet Bridge replacement (Phase I) and Bonner Bridge repairs, other future NC 12 improvement projects south of Rodanthe, and right-of-way acquisition. The public comment period ended January 24, 2014. A total of 78 written comments, 12 oral comments, and three petitions were received within the comment period. The hearings and types of comments made are summarized in Section 6.1.3. Public comments and responses to those comments are presented in Appendix F. Original public comment letters and the public hearing transcripts are included in Appendix G. Appendix F also includes comments on the 2013 Phase IIb EA from non-governmental organizations, local government, and environmental resource and regulatory agencies and responses to those comments. Original correspondence from these parties is also included in Appendix G.

2.5 Phase IIb Detailed Study Alternatives (Bridge on New Location and Bridge within Existing NC 12 Easement)

2.5.1 2012 Detailed Study Alternative Selection

At the November 14, 2012 Merger Team meeting, the Team reached consensus that, from among the alternatives described in the previous sections, the Bridge on New Location and the Bridge within Existing NC 12 Easement alternatives (see Figure 3) would be carried forward as the detailed study alternatives for Phase IIb. FHWA, NCDOT, US Army Corps of Engineers (USACE), NCDEQ Division of Water Quality (DWQ) (now within NCDEQ-Division of Water Resources [DWR]), the North Carolina Department of Natural and Cultural Resources (NCDNCR), and NCDEQ-Division of Coastal Management (DCM) signed the Merger Team concurrence forms. USEPA, USFWS, USFWS-Refuge, NMFS, the National Park Service (NPS), NCDEQ-Division of Marine Fisheries (DMF), and the North Carolina Wildlife Resources Commission (NCWRC) abstained (see Section 6.2 for the Merger Process definition of abstention). The concurrence form is included in Appendix A of this revised Phase IIb EA.

The Phase IIb detailed study alternatives would involve building a bridge on new location (part of Road North/Bridge South Alternative) or building a bridge in the existing NC 12 easement (portion of Phase II of Phased Approach/Rodanthe Bridge Alternative).

The Bridge on New Location Alternative selected in 2012, including the bridge and its associated roadway approaches, is approximately 3.0 miles in length. The bridge portion of this alternative is approximately 2.6 miles in length. The reasons the Bridge on New Location Alternative was selected as a detailed study alternative are: it would avoid the entire area considered geologically susceptible to breaches in the Phase IIb project area (see Figure 3) and it would be less vulnerable to potential future changes in Hatteras Island resulting from shoreline erosion than the Bridge within Existing NC 12 Easement Alternative. Finally, it would remove the NC 12 transportation corridor from a portion of the Refuge, allowing natural coastal processes to resume in that portion of the Refuge, which is consistent with current Refuge management policy.

The Bridge within Existing NC 12 Easement Alternative is approximately 2.5 miles in length, including the roadway approaches to the bridge. The bridge portion of this alternative is approximately 2.3 miles in length. The reasons the Bridge within Existing NC 12 Easement Alternative was selected as a detailed study alternative are that it would bridge over the entire area considered geologically susceptible to breaches in the Phase IIb project area (see Figure 3) and it would not require a change in the existing NC 12 easement within the Refuge.



PHASE IIb DETAILED STUDY ALTERNATIVES AS SELECTED IN 2012

Figure
3

The Phase IIb detailed study alternatives are described further in Chapter 3.0, and potential impacts are discussed in Section 4.2. The remaining alternatives discussed in Section 2.1 and the reasons that each was eliminated from further consideration are:

- Beach Nourishment – This alternative was eliminated because of uncertainties related to the availability of a suitable sand source over the project’s estimated 50-year life (i.e., through 2060); it would not adequately protect NC 12 from potential future breaches/ inlets (either from the ocean or sound-side [such as Hurricane Irene] storm surges, although the dunes associated with this alternative would reduce the risk of a breach occurring in this area since NC 12 would remain at-grade; it would not allow natural island processes to occur; and, based on the opinions of USFWS representatives, it is not likely to be found compatible with the Refuge’s mission and purpose. It also was a recommendation of the October 2011 Peer Exchange coastal expert panel that a long-term beach nourishment program not be implemented in the Phase IIb project area because of the high rate of shoreline erosion in this area (See Section 2.6.1).
- Bridge within Existing NC 12 Easement and Beach Nourishment – This alternative was eliminated because its nourishment component presented concerns similar to the Beach Nourishment Alternative. The primary difference is that although the availability of a suitable sand source is a concern, this alternative would require less sand over the project’s estimated 50-year life (i.e., through 2060) than the Beach Nourishment (only) alternative, because a smaller area of beach would be nourished.

2.5.2 Development of Phase IIb Preliminary Design for Bridge on New Location Alternative

Since the 2013 Phase IIb EA was issued, NCDOT developed two additional alignments for the Bridge on New Location Alternative. The second round, completed in response to environmental resource and regulatory agency comments, resulted in designs for two additional alignments. In this document, the original alignment is referenced in the remainder of this revised Phase IIb EA as the 2013 Bridge on New Location alignment and the two new alignments are referenced as the 2014A and 2014B Bridge on New Location alignments. The details of these new alignments are discussed below and shown in Figure 4.

2.5.2.1 2013 Bridge on New Location Alignment

The preliminary design for the 2013 Bridge on New Location alignment assessed in the 2013 Phase IIb EA and this revised Phase IIb EA incorporates two changes from the Bridge South component of the Road North/Bridge South Alternative that was assessed in the 2010 EA. First, the northern end was refined in consultation with Refuge representatives to identify an alignment that minimized the use of new Refuge lands while conforming to NCDOT design standards. The alignment assessed in the 2013 Phase IIb EA and this revised Phase IIb EA would require 2.79 acres of new easement in

the Refuge. The alternative is designed to be entirely on structure when it leaves the existing NC 12 easement so that the direct impact to Refuge habitat would be limited to bridge piles and shading from the bridge deck. Second, in order for the alternative to continue to meet horizontal curve design speed preference of 60 mph after the first change, the alignment was further shifted approximately 930 to 950 feet further to the west in Pamlico Sound. (See Figure 4.) The 2013 Bridge on New Location alignment both begins and terminates more than 230 feet soundward of the 2060 high erosion shoreline forecast in 2014, NCDOT's preferred criterion for minimizing the potential for impacts from shoreline erosion prior to 2060.

2.5.2.2 2014A and 2014B Bridge on New Location Alignments

In response to environmental resource agency comments, NCDOT developed the 2014A and 2014B alignments that shift the bridge to the east of the 2013 alignment and outside areas of dense submerged aquatic vegetation (SAV) in the southern half of the project area. (See Figure 4.) The 2014A and 2014B alignments are nearly identical to the 2013 Bridge on New Location Alternative at the north end within Refuge property, with a slight shift of the alignment at the shoreline. The acres of new right-of-way in the Refuge are 2.79 acres, the same as with the 2013 alignment. The direct impact to Refuge habitat remains limited to bridge piles and shading from the bridge deck. The termini of these alignments also are more than 230 feet soundward of the forecast 2060 high erosion shoreline.

The first alignment, 2014A, shifts the bridge outside of dense SAV areas while maintaining the project's 60 mph design speed for the entire length of the bridge. It also increases the number of residential relocations of the alternative from two to five. Because of this increase in relocations, NCDOT developed a second new alignment (2014B) that both avoided the dense SAV and would have only two residential relocations. This objective was accomplished by sharpening the curve west of Rodanthe. It now has a 45 mph design speed instead of 60 mph. The posted speed limit for the curve would be reduced to take into consideration the lower design speed.

2.5.3 Development of Phase IIb Preliminary Design for Bridge within Existing NC 12 Easement Alternative

The preliminary design for the Bridge within Existing NC 12 Easement Alternative assessed in the 2013 Phase IIb EA and this revised Phase IIb EA incorporates three refinements from the Phased Approach/Rodanthe Bridge Alternative assessed in the 2008 FEIS and 2010 EA. One design refinement is within the Refuge, while the other two are in Rodanthe.

Within the Refuge, the bridge is lower in height. The additional site analysis performed for necessary bridge heights by NCDOT for the Phase IIa project area applies to Phase IIb in the Refuge (see Section 4.2.1 of the Phase IIa EA on page 4-16). This analysis was done in coordination with members of the committee who originally developed

Hurricane Katrina storm surge safety requirements. Based on the results of this analysis, it was determined that it would be sufficient for the Phase IIb bridge to have 15.8 feet of clearance between mean high water and the bottom of the superstructure, instead of 25 feet. In addition, the deck would be at 25 feet above mean sea level instead of 33.5 feet.

Within Rodanthe, the bridge also is lower in height but not as low as within the Refuge. In Rodanthe, motor vehicles operating on the one-way frontage roads parallel to the bridge need to make U-turns under the bridge (see Figure 5 in Section 3.2 below). The frontage roads would be provided to maintain access to private property on either side of NC 12. The bridge clearance in Rodanthe needs to be high enough to accommodate large trucks that might need to make a U-turn under the bridge. In Rodanthe, the Phase IIb bridge would have a minimum of 17 feet of clearance for motor vehicle traffic (between the ground and the bottom of the superstructure). The bridge deck would be 30 feet above mean sea level instead of the 33.5 feet in the earlier design.

Also within Rodanthe, the design assessed in the 2010 EA ended the main (33.5-foot-high) bridge at a point approximately 680 feet north of Myra Peters Road (SR 1492). The design assessed in the 2010 EA avoided adverse impacts to the Chicamacomico Life Saving Station and Rodanthe Historic District, but did not achieve the project goal of placing the end of the main bridge 230 feet soundward of the forecast 2060 high-erosion shoreline used for the 2008 FEIS and 2010 EA. Under the 2010 design, the main bridge ended approximately 250 feet seaward of the forecast 2060 high erosion shoreline (between the forecast 2040 and 2050 high erosion shorelines). A slip ramp (ramp on the sound side of and parallel to the main bridge) was used to bring traffic down to the ground level before NC 12 reaches the historic district. The intent was that if high erosion rates manifested themselves, or a breach occurred that put the slip ramp-to-grade at risk, then, following additional environmental analysis, a new ramp could be built off the end of the full height bridge and/or the full height bridge could be extended. In terms of impacts to the Chicamacomico Life Saving Station and Rodanthe Historic District, the then-forecast 2060 high erosion shoreline placed almost all of the Chicamacomico Life Saving Station and approximately half of the Rodanthe Historic District in the Atlantic Ocean. FHWA and NCDOT planned to reassess the condition of these historic resources prior to the implementation of any extension of this alternative southward in response to shoreline erosion.

As shown in Figure D-1 in Appendix D, the erosion in the Rodanthe area through 2060 is now forecast to be less than was forecast for the 2008 FEIS and 2010 EA. This provides an opportunity to alter the south end of the Bridge within Existing NC 12 Easement Alternative to eliminate the slip ramp and bring the bridge down to grade before the Rodanthe Historic District. This design reduces the community impacts that had resulted from the wider NC 12 right-of-way needed to accommodate both the main bridge and the slip ramp. In Rodanthe, the revised main bridge ends approximately 200

feet west of the 2060 high erosion shoreline forecast using data through 2014. The approach bridge and fill then extend from the end of the main bridge. The revised design also does not meet the original goal of placing the end of the main bridge 230 feet soundward of the forecast 2060 high-erosion shoreline, but it offers a reasonable balance for this alternative between that goal and the objective of minimizing impacts to the Chicamacomico Life Saving Station and the Rodanthe Historic District. The northern end of this alternative is more than 230 feet soundward of the forecast 2060 high erosion shoreline.

2.6 New Studies

2.6.1 Phase II New Studies Presented in the Phase IIa EA

The Phase IIa EA documented the following four new studies associated with Phase II:

- New Cost Estimates for the Pamlico Sound Bridge Corridor are presented in Section 2.3.1 (beginning on page 2-5).
- Peer Exchange Meeting held in October 2011 to discuss the impacts of Hurricane Irene as well as engineering and scientific concerns over proposed long-term options for NC 12; a summary of the meeting discussions and main conclusions related to Phase IIa are presented in Section 2.6.2 (beginning on page 2-29). Findings pertaining to Phase IIb are:
 - The Panel agreed that the two breaches resulting from Hurricane Irene were not caused by a storm surge from the ocean side, but rather from the sound side. Also, they agreed that the storm surge flooded man-made ditches to the west of the Rodanthe breach location and continued to the ocean to create the Rodanthe breach.
 - The Panel noted that because of the high shoreline erosion rate in the Phase IIb project area, a bridge within the existing NC 12 easement would ultimately result in the structure being in the ocean a notable distance from shore, as compared to other locations where this alternative might be used. Thus, the Panel agreed that from this perspective, the Bridge within Existing NC 12 Easement Alternative would be not the best long-term solution at the Rodanthe breach site.
 - The Panel agreed that from a coastal engineering perspective, placing NC 12 on a bridge in Pamlico Sound (Bridge on New Location Alternative) would be a better option than the Bridge within Existing NC 12 Easement Alternative because it would be less vulnerable to potential future changes in Hatteras Island resulting from shoreline erosion and breach formation.
 - The Panel recommended that beach nourishment should not be used as a long-term solution at the Rodanthe breach site because it would not address the area's

- susceptibility to inlet formation and because of the area's high rate of shoreline erosion.
- The Panel indicated that the Bridge on New Location Alternative should be considered, but the Panel acknowledged that impacts to the Refuge, wetlands, and homes within Rodanthe are concerns with that alternative.
 - Updated 2060 Shoreline Forecast and Other Coastal Conditions Updates are presented in Section 2.6.3 (beginning on page 2-32). Year 2060 high erosion forecasts using erosion history data gathered through 2011 and through 2012 as compared to the shoreline forecast used with the 2008 FEIS were presented in Appendix D of the 2013 Phase IIa EA for the project area from Oregon Inlet to Rodanthe. A shoreline forecast using erosion history data through 2014 is illustrated in Appendix D of this revised Phase IIb EA along with the three previous forecasts. Where the forecast shorelines overlap, the most recent is shown. The biggest difference in the forecast shorelines is in Rodanthe, where the 2014 forecast line is approximately 50 to 140 feet further east (oceanward) of the 2011 forecast.
 - Bird survey results are presented in Section 2.6.4 (beginning on page 2-33) of the Phase IIa EA.

2.6.2 On-going and Additional Phase II New Studies

2.6.2.1 On-Going Bird Surveys

There are several sources of bird data for the project area including NCDOT, NPS, USFWS, NCDOT, NCWRC, and eBird. Audubon and the Cornell Lab of Ornithology maintain a rapidly growing on-line database, "eBird" where observers can enter sighting for any specific location and/or time. Data entered into eBird are usually not based on structured regular surveys; however, it is a source of documenting presence from specific areas and timeframes. The NPS monitors breeding water and shorebirds within Cape Hatteras National Seashore (Seashore), which includes the southern end of Bodie Island on the north side of Oregon Inlet. The USFWS conducts surveys three times a month within the Refuge. NCWRC also conducts state-wide surveys for nesting water birds every few years. NCDOT began conducting shorebird surveys twice a month in October 2011 in the vicinity of the newly formed Pea Island breach. In 2013 the NCDOT survey area was expanded to include the entire length of the Refuge and the southern end of the Bodie Island spit on the north side of Oregon Inlet, which covers the land-associated portions of the Bonner Bridge Replacement Project (B-5200) project area. The formation of the Pea Island breach created a variety of habitats that have attracted bird use by a variety of water birds throughout the year.

The most important and well established nesting colonies are found in the vicinity of Oregon Inlet, on both the north and south sides of the inlet. Closure areas to protect beach nesting birds are often established and/or posted by NCWRC, and also by

Seashore and Refuge staff for areas within their jurisdiction. Nesting water birds include species that prefer open beaches including least terns, American oystercatchers, piping plovers, and occasionally other species like common tern, gull-billed tern, Forster's tern, and black skimmer. Survey data available from NCWRC documented six nesting colony sites in 2014, all comprised of least terns, and all from North Pond north (personal communication, Sara Schweitzer, Ph.D., Wildlife Diversity Biologist, NCWRC, December 11, 2015). The largest colony, comprised of 395 nests, was found on the south side of Oregon Inlet between the terminal groin and the former Coast Guard Station. All of the other colonies in 2014 were comprised of less than 23 nests at scattered locations. Although nesting did occur at some of these same sites in 2015, no 2015 nesting data were available from NCWRC for these sites.

Birds began attempting to establish nesting areas in the vicinity of the Pea Island breach in 2013, but colonial nesting species (primarily least terns) became more prevalent in 2014 and 2015, the same years when piping plovers also nested at the Pea Island breach. Piping plovers nested at Oregon Inlet (north side) in 2012 and on the south side of Oregon Inlet in 2014 and 2015. Although piping plovers were present in the Oregon Inlet area during the nesting season of 2013, no nests were documented that year. There were a total of five nests within the Refuge in 2015, including one on the west side of NC 12 at the Pea Island breach. The other nests within the refuge included two on the south side of Oregon Inlet and two in the vicinity of North Pond in the Refuge.

Most of the nesting sites between Oregon Inlet and the Pea Island breach occur in overwash areas, as a result of storm-influenced areas, where vegetation is absent or sparse. As areas become more vegetated, these areas are likely to become less suitable for beach nesting species. It is somewhat natural that beach nesting sites vary from year to year with these ephemeral habitats, which are more commonly encountered near inlets.

2.6.2.2 Submerged Aquatic Vegetation (SAV) Surveys

Field surveys for SAVs were conducted in 2014 and 2015 along the 2014B Bridge on New Location Alternative. Prior to the field surveys, estimated SAV boundaries were initially identified using color aerial photography. The field surveys ground-truthed the accuracy of the SAV boundaries identified from the photography. Final boundaries were developed based on field survey results. The field surveys also determined the percent of SAV coverage within the SAV boundaries. The final 2015 SAV delineation also was compared to the final 2014 SAV delineation. Areas exhibiting SAV in 2014 and 2015 were found to be static (generally unchanged) between 2014 and 2015.

This information was used in combination with the bridge deck area to calculate the SAV impact of the 2014B Bridge on New Location alignment for mitigation purposes. As input to mitigation development, NCDOT also plans to use available past aerial photography to attempt to determine the persistence of SAV over time in the Phase IIb

project area. Also, NCDOT plans to regularly monitor SAV and update SAV boundaries, if necessary, before and during construction of the Phase IIb bridge.

2.6.2.3 USACE Rodanthe 'S' Curve Interim Maintenance Environmental Assessment

USACE was contracted by NCDOT to develop and conduct a one-time beach nourishment project that would be designed to help reduce the impact of storms on NC 12 at the Rodanthe 'S' Curves Hot Spot for approximately three years. The nourishment project was started in July 2014 and completed in September 2014, at a cost of \$20.3 million.

This project was a maintenance activity and was not a part of the Bonner Bridge Replacement Project (B-2500), but this project is within the Phase IIb project area. A public notice was posted on July 1, 2013 at <http://www.saw.usace.army.mil/Missions/RegulatoryPermitProgram/PublicNotices/tabid/10057/Article/15690/saw-2013-01129.aspx>. USACE approved the EA for the project on October 15, 2013, concluding that the project would have no significant impacts. NCDOT coordinated with NMFS and NCDEQ-DMF for consultation on impact minimization. Essential fish habitat (EFH) consultation requirements under the Magnuson-Stevens Fishery Conservation and Management Act were met. USACE determined that the proposed project would not affect historic resources present in the proposed beach nourishment area. USACE conducted consultation under Section 7 of the Endangered Species Act with the USFWS.

Two alternatives to the nourishment program were considered:

- Maintain NC 12 on its existing alignment with protective sandbags and dunes within the existing NCDOT easement.
- Install a temporary bridge west of the existing easement within the Refuge.

Nourishment was found to be the preferred alternative. To complete the project with the preferred nourishment alternative, USACE estimated that 1.7 million cubic yards of material would be needed. After investigating sand sources within Oregon Inlet and offshore at Wimble Shoals, USACE identified sand sources within Wimble Shoals as appropriate for the project. The sand utilized for this the beach nourishment project came from an approved borrow source with sand compatible with the native beach sand in the project area. The beach nourishment project only used borrow sand that met federal and state compatibility requirements.

Sand placement was accomplished by means of hydraulic dredging, including hopper and/or cutterhead suction dredging. The discharge pipe was floated from a seaward station to the nourishment project area beach face where heavy equipment (e.g., bulldozers, front end loaders) moved and graded the discharged sand into the desired beach profile.

The beach nourishment project design focused the majority of the sand berm placement within an 8,000 linear foot area located around the Rodanthe 'S' Curves Hot Spot/Mirlo Beach area. The final beach berm width throughout the 8,000 foot critical zone is 130 feet. North and south of this critical zone, the project begins transitioning with a tapered berm back to the existing shoreline. The northern transition zone includes dune construction that is approximately 1,800 feet long. The total length of the project, including the critical zone and transition areas is approximately 11,300 feet.

2.6.2.4 Phase II Extension Alternative

As a part of additional Phase IIa studies, NCDOT is preparing an assessment of a "Phase II Extension Alternative." This alternative would extend the Phase IIb Bridge on New Location Alternative (listed as the Preferred Alternative in this Revised Phase IIb EA) within Pamlico Sound to the northern end of Phase IIa. This alternative study report is scheduled to be completed early in 2017.

2.6.2.5 Interim Bridge Construction Consultation

A Categorical Exclusion (CE) was approved by FHWA in September 2011 for the emergency construction of a temporary bridge across the Pea Island breach that demonstrated the project would have no significant environmental impact. The temporary bridge was subsequently built to restore traffic operations on NC 12 across the breach. The metal superstructure of the temporary bridge was estimated to have a design life of up to 5 years.

NCDOT is now constructing a "new temporary" [interim] bridge over the Pea Island breach to provide for interim safe and reliable transportation in the Phase IIa area while a long-term solution continues to be evaluated and then constructed, including the consideration of an alternative that extended the Phase IIb Bridge on New Location Alternative to the northern end of Phase IIa described in the previous subsection.

A construction consultation report was prepared by NCDOT for FHWA. Based on its findings related to project characteristics, changes in the affected environment since the preparation of the 2013 Phase IIa ROD, and the impacts associated with the proposed interim bridge project, it was concluded in the construction consultation report that the interim bridge would not add significant new impacts to those documented for Phase IIa of the Bonner Bridge Replacement Project in the 2013 Phase IIa EA and Phase IIa ROD. In turn, the report concluded that the interim bridge project would not add significant new impacts to the PBC/TMP Alternative, selected for the overall Bonner Bridge Replacement Project in a 2010 ROD. As such, implementation of an interim bridge to provide for interim safe and reliable transportation through the present Phase IIa area was consistent with the Bonner Bridge Replacement Project 2010 ROD and the 2013 Phase IIa ROD.

2.6.2.6 Coastal Monitoring Program

The coastal monitoring program described in Section 3.3.2 of the 2010 ROD was initiated in January 2011. The program includes detailed annual monitoring reports that summarize data collected by NCDOT and other agencies. The study area for the coastal monitoring program includes that of both the existing terminal groin monitoring program (developed in conjunction with the USFWS, per the terminal groin permit issued in June 1989) and the Bonner Bridge Replacement Project (B-2500) project area. The study area begins just over 5 miles north of the Oregon Inlet Marina and extends 13.5 miles south of Oregon Inlet to Rodanthe, and it includes the entire width of Hatteras Island between the ocean and estuarine shorelines. The data collected for each calendar year is compared with previous years' data as well as the baseline conditions established in January 2011 to determine changes in shoreline erosion rates and composite vulnerability.

To date, the coastal monitoring program has identified sections of NC 12 that are currently vulnerable to storm damage based on multiple criteria, including island width, dune crest elevation, and the distance between the roadway and the ocean shoreline. Sections of NC 12 located north of the freshwater ponds, immediately south of the Pea Island breach, and north of Rodanthe have been identified in multiple reports as vulnerable areas. In addition, each annual report includes an update of the forecast ocean shoreline position through 2060; as of calendar year 2014, the 2060 forecast shoreline position (shown in Appendix D) indicates that seven sections of NC 12 will be vulnerable to shoreline erosion by 2060, for a total distance of approximately 6.3 miles.

3.0 Description of Phase IIb Detailed Study Alternatives and Identification of Preferred Alternative

3.1 Description of Bridge on New Location Alternative

NC 12 would leave the existing NC 12 easement within the Refuge at a point approximately 1.8 miles north of the Refuge boundary with Rodanthe and enter Pamlico Sound. The bridge would be in Pamlico Sound until a point north of the emergency ferry terminal, where the relocated NC 12 would turn east and enter Rodanthe. This alternative would re-join NC 12 just north of the Liberty Service Station/Island Convenience Store. The alternative is approximately 2.8 to 3.0 miles long, depending on the alignment. It is designed such that NC 12 is on a bridge when it leaves the existing easement in the Refuge, and it continues on a bridge for most of its length until coming back to the ground in Rodanthe. The bridge not including of the approach road, is approximately 2.4 to 2.6 miles long depending on the alignment. This alternative would bypass the two areas considered geologically susceptible to breaches at the south end of the Refuge and in Rodanthe, as well as the Rodanthe 'S' Curves Hot Spot (see Figure 3). The proposed design of the Bridge on New Location Alternative has the following characteristics:

- Two 12-foot lanes with 8-foot shoulders on the bridge, similar to Phase I and Phase IIa of the Bonner Bridge Replacement Project (B-2500). The same would be true on the road portion. Four feet of the 8-foot shoulder would be paved. The roadway and the bridge would be located within a 100-foot right-of-way or easement.
- 110- to 120-foot main spans with 60-foot approach spans.
- Approach fills at each end of the bridge. At the north end in the Refuge, a 590-foot-long fill section would include a retaining wall where needed to keep approach fills within the existing NC 12 easement. At the south end in Rodanthe, an 840-foot-long fill section with fill side slopes only.
- The section of existing NC 12 between the southern terminus of the Bridge on New Location Alternative in Rodanthe and the Refuge boundary would be retained and maintained by NCDOT as a local road serving adjacent development. This road would end at the Refuge boundary, and a means for vehicles to turn around would be provided. Existing NC 12 would be removed from the Refuge boundary north to the point where Bridge on New Location Alternative connects to existing NC 12 in

the Refuge. Approximately 1.8 miles of existing NC 12 pavement within the Refuge would be removed and that portion of the transportation easement would be returned to the Refuge.

- Pile foundations with a pile cap supporting the spans between the foundations.
- There would be 15.8 feet of clearance under most of the bridge spans above mean high water (17 feet from zero elevation), as with Phase IIa. The bridge deck would be at an elevation of approximately 25 feet.
- Bicycle safe bridge rail mounted on a 36-inch parapet to partially block headlights that otherwise could affect the success of turtle nesting on the beach.
- Runoff would be collected from the ends of the Phase IIb bridge and piped to a riprap apron, which would drain to roadside swales to promote infiltration. Bridge drainage for the main bridge spans would be from deck drains (openings) at the outer edges of the deck. The bridge would be high enough to allow wind to disperse the deck drain discharge before it reaches the ground or inlet surface. Roadway runoff would drain into roadside ditches.
- Construction activity would be primarily confined to the existing or new easement/right-of-way except at the northern end (in the Refuge), where a temporary construction easement east of the existing easement would be needed for a temporary traffic maintenance road to take traffic around the bridge approach. This temporary easement would be approximately 0.63 acre in size.
- Construction is anticipated to last between 3 and 3.5 years.
- The parking lot in the Refuge displaced by the Phase IIa interim bridge will be replaced as a part of Phase IIb construction at a site approximately 900 feet north of the northern terminus of Phase IIb.

Three alignments were considered. (See Figure 3 and Figure 4.) The three alignments have the same characteristics as listed above, but vary in their design as follows:

- The 2013 Bridge on New Location alignment (illustrated in red in Figure 4) is approximately 3.0 miles in length; the bridge is 2.6 miles long. At its farthest point, the bridge extends approximately 2,350 feet west of the Pamlico Sound shoreline. The design speed (speed at which the bridge could be safely driven) is 60 mph.
- The 2014A Bridge on New Location alignment (shown in orange in Figure 4) is approximately 2.8 miles long. The bridge is approximately 2.4 miles long. At its farthest point, the bridge extends approximately 1,350 feet west of the Pamlico Sound shoreline. The design speed (speed at which the bridge could be safely

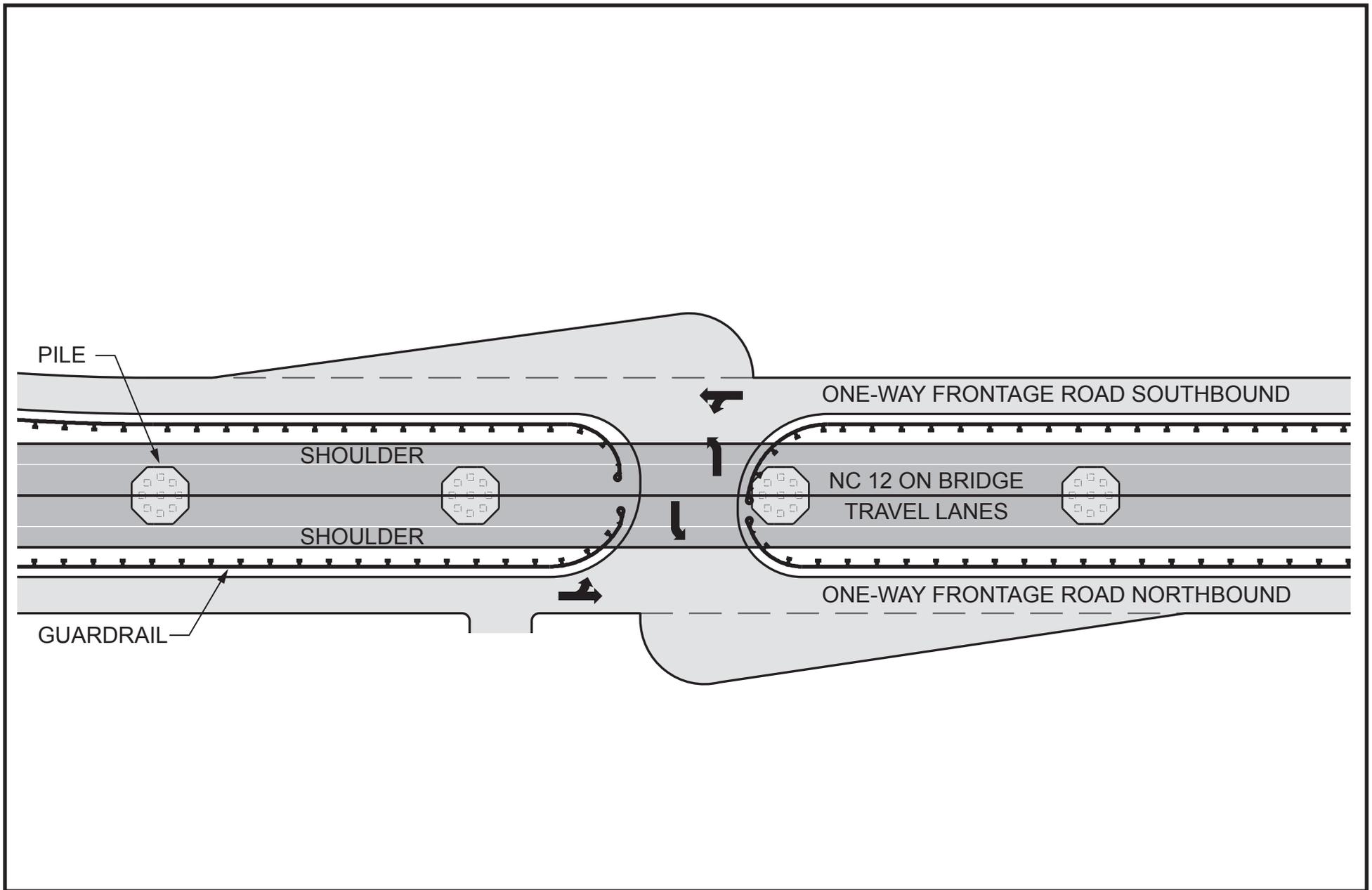
driven) is 60 mph. This alternative would have greater residential relocation impacts than the other alignments, as discussed in Section 4.2.1.

- The 2014B Bridge on New Location alignment (shown in yellow in Figure 4) is approximately 2.8 miles in length, including a 2.4-mile long bridge. The bridge extends approximately 1,400 feet west of the Pamlico Sound shoreline at its farthest point. In order to minimize relocation impacts, the design speed was reduced to 45 mph on the southernmost curve of the bridge that approaches Rodanthe.

3.2 Description of Bridge within Existing NC 12 Easement Alternative

The Bridge within Existing NC 12 Easement Alternative (illustrated in blue in Figure 3), would involve building a bridge in the existing NC 12 easement to replace the existing surface road. The total length of this alternative is approximately 2.5 miles. The bridge component, approximately 2.3 miles in length, would bridge two areas considered geologically susceptible to breaches at the south end of the Refuge and in Rodanthe, as well as the Rodanthe ‘S’ Curves Hot Spot (see Figure 3). This alternative starts approximately 1.7 miles north of the Refuge boundary with Rodanthe. It continues to the south and ends at a point on NC 12 approximately 170 feet north of Myrna Peters Road (SR 1492). The Bridge within Existing NC 12 Easement Alternative has the following characteristics:

- Two 12-foot lanes with 8-foot shoulders on the bridge, similar to Phase I and Phase IIa of the Bonner Bridge Replacement Project (B-2500 and B-2500A).
- Located on the ocean side of the NC 12 easement.
- 110- to 120-foot main spans with 60-foot approach spans.
- Approach fills at each end of the bridge (including an approximately 360-foot-long fill section at the south end of the bridge and a 410-foot-long fill section at the north end) with the fill held by a retaining wall where needed to keep approach fills within the NC 12 easement/right-of-way.
- Access to properties adjacent to the bridge in Rodanthe would be provided by a one-lane, one-way frontage road on each side of the NC 12 bridge. The two frontage roads would flare out and connect with NC 12 at a four-legged intersection at the south of the end of the project. Crossovers to provide access between the two frontage roads underneath the NC 12 bridge were assumed to be provided in two locations: just south of the Refuge boundary and across from Cross of Honor Way (SR 1445). The frontage roads and a typical crossover are illustrated in Figure 5.



BRIDGE WITHIN EXISTING EASEMENT WITH FRONTAGE ROADS

Figure
5

- Pile foundations with a pile cap or footer cast on top of the piles at the existing ground line topped by a pier used to support bridge spans. In the Refuge, there would be 15.8 feet of clearance under most of the bridge spans above mean high water (17 feet from zero elevation), as with Phase IIa. The bridge deck would be at an elevation of approximately 25 feet. In Rodanthe, the bridge would have a minimum of 17 feet of clearance for U-turning motor vehicle traffic (between the ground and the bottom of the superstructure). The bridge deck would be at an elevation of approximately 30 feet.
- New right-of-way would be required on each side of the existing NC 12 easement south of the Pea Island Refuge boundary for at-grade frontage roads that provide access to side streets and properties adjacent to the existing NC 12 easement. Additional right-of-way also would be needed for bulb-outs to accommodate turning traffic at intersections connecting the two one-way frontage roads to NC 12. The total new right-of-way purchased would be 2.83 acres. The purchase of utility easements 15 feet wide on either side of NC 12 also is assumed. These easements would total 2.50 acres. The easements primarily would be used to relocate poles carrying electrical and telephone lines with no re-grading of land expected. However, 0.48 acres of the 2.5 acres also would serve as a construction easement for grading the final slopes. An alternative to reduce the amount of new easement needed would be to mount electrical and telephone lines on the bridge.
- Bicycle safe bridge rail mounted on a 36-inch parapet to partially block headlights that otherwise could affect the success of turtle nesting on the beach.
- Runoff would be collected from the ends of the Phase IIb bridge and piped to a riprap apron, which would drain to roadside swales to promote infiltration. Bridge drainage for the main bridge spans would be from deck drains (openings) at the outer edges of the deck. The bridge would be high enough to allow wind to disperse the deck drain discharge before it reaches the ground or water surface.
- Construction activity would be primarily confined to the existing NC 12 easement, including a temporary traffic maintenance road. However, approximately 2.06 acres of temporary construction easement would be needed to construct Phase IIb in the Refuge. In Rodanthe, 0.48 acre of the 2.5-acre utility easement also would be used for grading final slopes.
 - In the Refuge, an approximately 5-foot-wide temporary construction easement would be needed for the entire length of the project on the sound side of the existing NC 12 easement. The purpose of this narrow easement would be primarily to provide room for construction workers to erect erosion control measures (fencing) along the edge of the existing NC 12 easement. A pile jetting pipe would be placed between NC 12 and the Pamlico Sound on a 10-foot wide

temporary easement at what is currently expected to be three locations in the Refuge.

- In Rodanthe, the 0.48 acre of regrading in the utility easement would occur just south of the Refuge border.
- Construction is anticipated to last between 2 and 3 years.

3.3 Phase IIb Detailed Study Alternatives Cost and Financing

Based on the revised designs, NCDOT updated the construction cost estimates for the Phase IIb detailed study alternatives for the 2013 Phase IIb EA. Consistent with the cost estimates included in the 2008 FEIS, a “low” and “high” construction cost estimate was prepared to reflect a range of possible structure types and construction techniques. The estimates were updated again for this revised Phase IIb EA, including inclusion of costs for the 2014A and 2014B Bridge on New Location Alternative alignments. These estimates are shown in Table 1 and are subject to change as the final design is developed.

Phase IIb would be funded through existing federal and state funding sources available to transportation projects and allocated to NCDOT’s Division 1¹ in the STIP. In addition, FHWA advised NCDOT that a portion of the cost of Phase II (including Phase IIa and Phase IIb) may be eligible for reimbursement under federal Emergency Relief² (ER) funding. The amount of ER funding available for Phase II will depend upon the scope of the long-term solution as compared to the original damage as a result of the storm. FHWA estimates that 30 percent of the long-term solution at the Rodanthe site (Phase IIb) will be eligible for ER funding; however, the ER funding is provided through a reimbursement process and is not necessarily a guaranteed funding source.

Phases I (Bonner Bridge Replacement), IIa (Pea Island breach), and IIb (Rodanthe breach) have all been allocated funding in the current (2016 to 2025) STIP.

¹ NCDOT Division 1 includes the following counties: Bertie, Camden, Chowan, Currituck, Dare, Gates, Hertford, Hyde, Martin, Northampton, Pasquotank, Perquimans, Tyrrell, and Washington.

² The FHWA Emergency Relief Program is a special program from the Highway Trust Fund for the repair or construction of federal-aid highways and roads on federal lands that have suffered serious damage as a result of natural disasters or catastrophic failures from an external cause. The funding supplements the commitment of resources by states to help pay for unusually heavy expenses resulting from extraordinary conditions (i.e., damage to highways must be severe, occur over a wide area, and be unusually expensive to the highway agency).

Table 1. Phase IIb Detailed Study Alternatives Cost

Type of Cost	2013 Bridge on New Location Alternative		Bridge within Existing NC 12 Easement Alternative	
	Low	High	Low	High
Construction	\$190,600,000	\$210,300,000	\$139,900,000	\$164,500,000
Right-of-Way	\$3,850,000		\$21,750,000	
Utilities ¹	\$688,455		\$1,153,250	
TOTAL	\$195,138,455	\$214,838,455	\$162,803,250	\$187,403,250
<hr/>				
Type of Cost	2014A Bridge on New Location Alternative		2014B Bridge on New Location Alternative (Preferred)	
	Low	High	Low	High
Construction	\$169,200,000	\$187,200,000	\$174,400,000	\$193,400,000
Right-of-Way	\$5,100,000		\$4,175,000	
Utilities ¹	\$688,455		\$688,455	
TOTAL	\$174,988,455	\$192,988,455	\$179,263,455	\$198,263,455

¹NCDOT pays utility relocation costs when its projects directly affect utilities outside NCDOT's existing right-of-way or directly affect utilities within NCDOT's existing right-of-way where the utility's easement rights pre-date NCDOT's right-of-way ownership.

3.4 Phase IIb Preferred Alternative

The Preferred Alternative is the 2014B Bridge on New Location Alternative.

The decision to identify the 2014B Bridge on New Location Alternative as the Preferred Alternative was made taking into consideration public review comments on the 2013 Phase IIb EA (which identified NCDOT's Preferred Alternative as the Bridge within Existing NC 12 Easement Alternative), including comments by residents, business owners, and property owners in the portion of Rodanthe affected. Also considered were the views and preferences of official(s) with jurisdiction over the management of the Refuge (USFWS-Refuge), the State Historic Preservation Officer (SHPO) under the National Historic Preservation Act of 1966, USFWS and NMFS under Section 7 of the Endangered Species Act, the NMFS and Fisheries Management Council/Commissions (FMC) under the Magnuson-Stevens Fishery Conservation and Management Act, and other state and federal environmental resource and regulatory agencies that commented on the 2013 Phase IIb EA.

This alternative was selected by the project's NEPA/Section 404 Merger Team as the Least Environmentally Damaging Practicable Alternative (LEDPA) because it would minimize impacts to the Refuge, the ocean shoreline/beach, the Rodanthe community, SAVs, and residential relocations. The Merger Team process is described in the introduction to Section 6.2.

4.0 Environmental Update

4.1 Updated Affected Environment

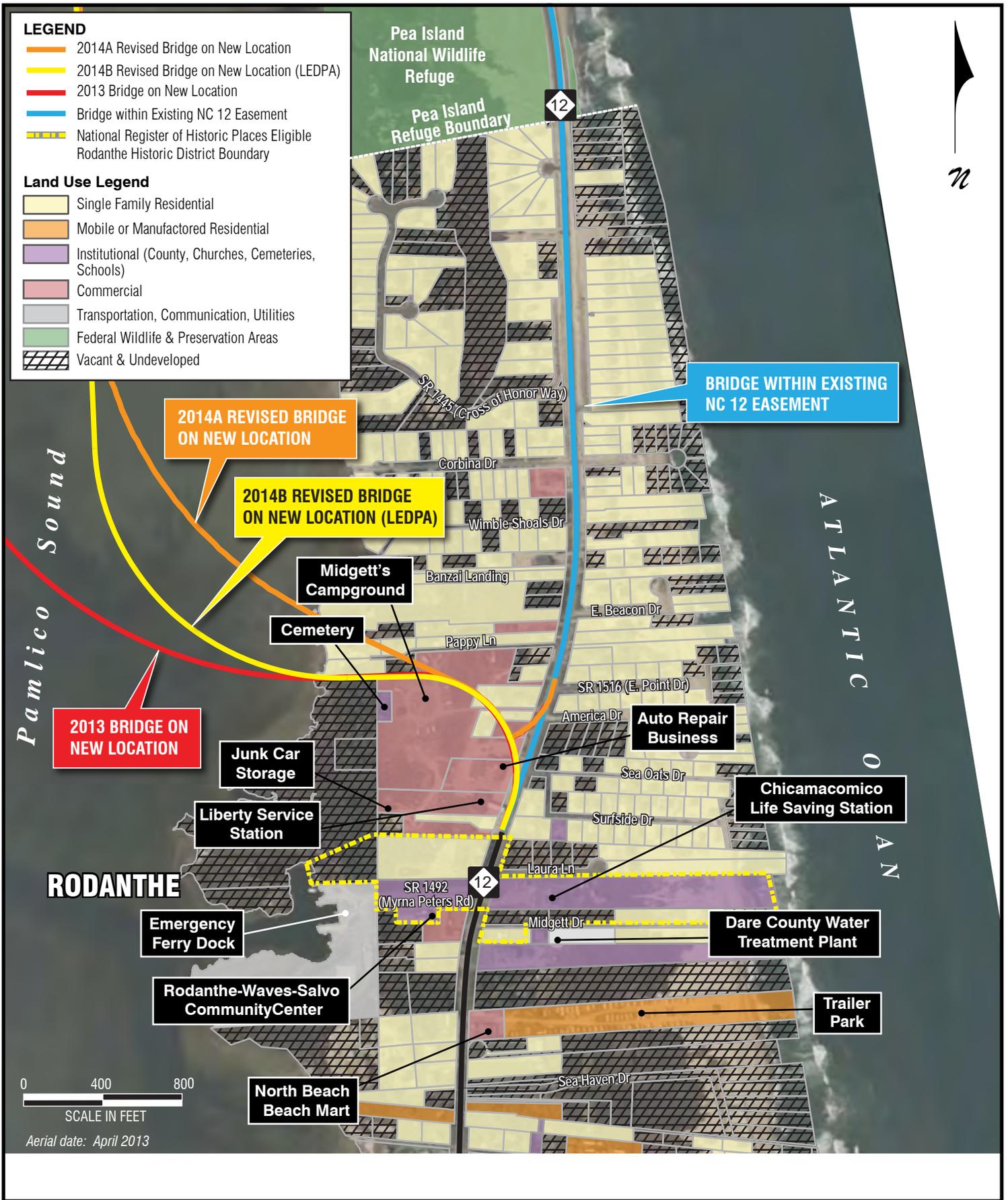
This section updates affected environment information presented in Chapter 3 of the 2008 FEIS for the Phase IIb project area illustrated in Figure 1. The need for updates is primarily the result of storms, particularly Hurricane Irene in August 2011, and other coastal processes that caused changes in the affected environment. The effects of Hurricane Sandy in October 2012 also are considered based on field observations and post-Hurricane Sandy aerial photography. This chapter includes updated information on:

- Community characteristics
- Cultural resources
- Parks and recreation/wildlife refuges
- Coastal conditions
- Wetlands and open water habitat
- Protected species
- Essential fish habitat (EFH)

4.1.1 Community Characteristics

According to Section 3.1.2 of the 2008 FEIS, commercial development in Rodanthe exists along NC 12 and consists mostly of small service stations (including the Island Convenience Store/Liberty service station in the Phase IIb project area), as well as general stores, realty agencies, restaurants, and businesses for recreational activities. Residential development focuses on the oceanfront on the east and Pamlico Sound on the west. The development primarily consists of large, multiple-story, multiple-bedroom rental vacation home neighborhoods; however, there also are scattered neighborhoods of smaller, often one-story, permanent homes. The Chicamacomico Life Saving Station, a museum listed on the National Register of Historic Places (NRHP), is located on the east side of NC 12 in the project area. The Rodanthe-Waves-Salvo Community Center is located on the west side of NC 12 in the project area.

Land use in the Rodanthe portion of the project area is shown on Figure 6. The primary changes in land use since the 2008 FEIS and 2010 ROD have been the construction of some new vacation homes, the loss of some vacation homes because of storm events and shoreline erosion, and the construction of a recreational campground.



LAND USE IN RODANTHE AREA

Figure
6

4.1.2 Cultural Resources

There are three resources within the Phase IIb project area listed on or eligible for inclusion in the National Register of Historic Places (NRHP):

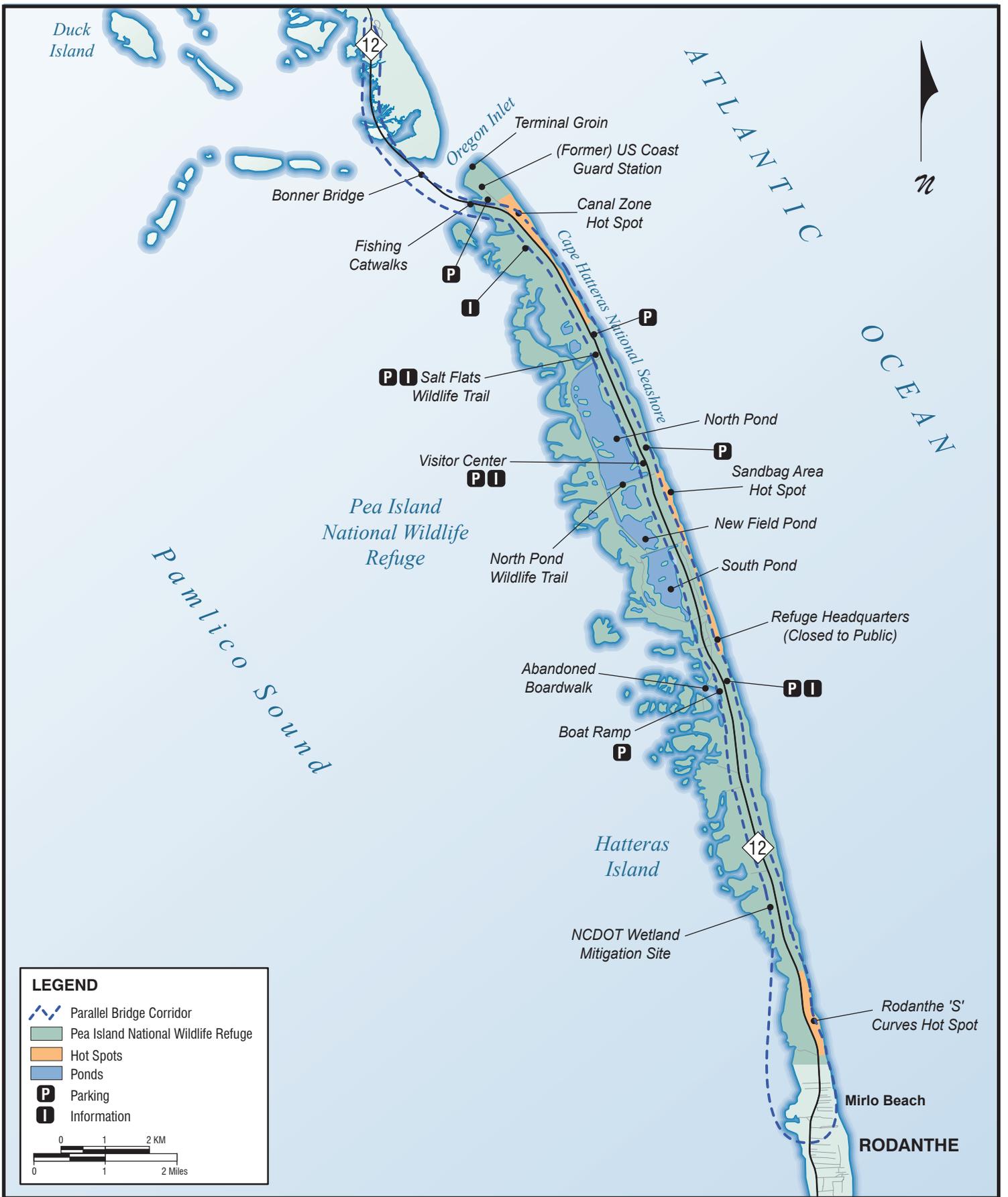
- Pea Island National Wildlife Refuge (eligible)
- Chicamacomico Life Saving Station (listed)
- Rodanthe Historic District (eligible)

These resources were described in detail in Section 3.4.1 of the 2008 FEIS, beginning on page 3-28. The portion of the Refuge within the Phase IIb project area is shown on Figure 3. The boundaries of the Life Saving Station and the Rodanthe Historic District are shown in Figure 6. Hurricanes Irene and Sandy had no effect on the features of the three resources that make them eligible for inclusion in the NRHP.

Underwater archaeological resources also could occur in Pamlico Sound. The remains of a modern barge are in Pamlico Sound immediately west of Rodanthe; this site was documented in the 2008 B-2500 Final Environmental Impact Statement (FEIS page 3-33). The Preferred Alternative crosses the southern limits of this site. Further underwater archaeological studies along the 2014B Bridge on New Location Alternative (preferred) and are underway. The results will be reviewed with the Office of State Archaeology prior to construction of the project.

4.1.3 Parks and Recreation/Wildlife Refuges

The Phase IIb project area is partially within the Refuge (See Figure 7), whose jurisdiction substantially overlaps with that of the Seashore. The exception is that the Refuge boundary is the shoreline and the Seashore boundary is 150 feet from the shoreline. The Refuge is characterized by ocean beach, dunes, upland, fresh and brackish water ponds, salt flats, and salt marsh. It is inhabited by an extensive number of bird species, as well as a variety of mammals, reptiles, and amphibians. A variety of recreational opportunities also exist within the Refuge, including fishing, birding, surfing, walking, kayaking, and going to the beach (sunbathing). The detailed characteristics of the Refuge are described in Section 3.5.2 of the 2008 FEIS, beginning on page 3-40. Except for sand overwash and associated dune loss and damage (both considered by USFWS-Refuge staff to be a part of acceptable natural processes), Hurricanes Irene and Sandy had a minimal effect on the Refuge in the Phase IIb project area. Effects in the Phase IIb project area included NCDOT construction activities and detours (in 2012 and 2013) following Hurricane Irene to close the breach opened by the hurricane, restore the sandbag-filled dune just north of Rodanthe, and repair/clear and re-open NC 12. For repairs following Hurricane Irene, a CAMA major permit and a USFWS Special Use Permit were obtained. NCDOT also prepared a CE for this work to fulfill the requirements of NEPA. The sandbag filled dune and NC 12 were again repaired following Hurricane Sandy.



LAND USE
PEA ISLAND NATIONAL WILDLIFE REFUGE

Figure
7

4.1.4 Coastal Conditions

Coastal processes drive the physical changes in the Phase IIb project area. This section discusses existing conditions and trends in the Phase IIb project area, including:

- Rodanthe breach resulting from Hurricane Irene and potential for breaching
- Rodanthe 'S' Curves Hot Spot
- Forecast shoreline changes through 2060

Existing coastal conditions for the entire Phase II project area are described in Section 3.6 of the 2008 FEIS; this discussion includes the location of floodplains, Oregon Inlet migration, changes in the Oregon Inlet gorge (deepest part) alignment and location, historical shoreline changes, factors that drive inlet and shoreline changes, the Hatteras Island shoreline through 2060 (based on data through June 2004), potential breach locations, and forecast Oregon Inlet movement through 2085. Recent updates related to the formation of the Pea Island breach, potential for Pea Island breach migration or closure (closed as of May 2013), Pea Island breach depth, and natural factors affecting inlet and shoreline changes are presented in the 2013 Phase IIa EA and this revised Phase IIb EA in Section 4.1.4.

Many of the decisions related to phasing and the starting and ending points of various phases of the PBC/TMP Alternative were based on a forecast 2060 high-erosion shoreline from Oregon Inlet to Rodanthe and locations geologically susceptible to breaches. The 2060 high-erosion shoreline forecast was updated in 2012 using shoreline change data through the end of 2011 (Overton, 2013) and discussed in Section 4.1.2.6 of the Phase IIa EA, beginning on page 4-8. A new shoreline forecast adding 2012 erosion data was completed in 2013 and was illustrated in Appendix D of the 2013 Phase IIb EA along with the two previous forecasts. This revised Phase IIb EA updates the forecast again using data gathered in 2014. The three previous forecasts and the new one are shown in Appendix D of this revised Phase IIb EA. Where forecast lines overlap, the most recent is shown. The biggest difference in the forecast shorelines is in Rodanthe, where the 2014 forecast line is approximately 50 to 140 feet further east (oceanward) of the 2011 forecast. Changes between the 2060 high-erosion shoreline assumed in the 2008 FEIS and the 2014 forecast for the Phase IIb project area are presented for the Phase IIb project area in this section.

4.1.4.1 Rodanthe Breach

In August 2011, Hurricane Irene created breaches on NC 12 at two locations: within the Refuge (Phase IIa project area) and within northern Rodanthe (Phase IIb project area, including the Rodanthe 'S' Curves Hot Spot). Hurricane Irene produced a soundside (western shore) storm surge. The Rodanthe breach occurred immediately north of Rodanthe at the southern limit of the Refuge. As a part of restoring NC 12, NCDOT

closed the breach by filling it in with sand obtained from a site in Avon. NCDOT prepared a Categorical Exclusion (CE) for this work to fulfill the requirements of NEPA. The CE, approved in September 2011, demonstrated that this work would have no significant environmental impact. Other actions taken as a result of Hurricane Irene to restore NC 12 at the Rodanthe 'S' Curves Hot Spot are described in the next section.

During the Peer Exchange meeting in October 2011 (described in Section 2.6.2 of the Phase IIa EA³), panel members agreed that the two breaches resulting from Hurricane Irene were not caused by the storm surge on the ocean side. Also, they agreed that the storm surge flooded man-made ditches to the west of the Rodanthe breach location and continued to the ocean to create the Rodanthe breach. The Phase IIb project area contains two adjoining locations considered geologically susceptible to breaching that encompass most of the Phase IIb project area (see Figure 3). These potential breach sites were described in Section 3.6.3.4 of the 2008 FEIS beginning on page 3-59.

4.1.4.2 Rodanthe 'S' Curves Hot Spot

In August 1991, the NCDOT sponsored a research project conducted by North Carolina State University to identify critical sections of North Carolina's coastal highways and options available for maintaining these highway corridors. The study concluded that NC 12 has six critical sections, or "hot spots," between Oregon Inlet and the southwestern tip of Ocracoke Island. Three of the hot spots are at the north end of Hatteras Island (within the Bonner Bridge Replacement Project [B-2500] project area): Canal Zone, Sandbag Area, and Rodanthe 'S' Curves.

The Phase IIb project area, which includes the Rodanthe 'S' Curves Hot Spot, has the highest erosion rates in the Bonner Bridge Replacement Project (B-2500) project area. The 2011 Peer Exchange meeting panel affirmed that erosion rates in Rodanthe (in particular, at the Mirlo Beach subdivision) were amongst the highest rates along the North Carolina coast. The subsurface rock structure (Wimble Shoals) in the vicinity of the northern Rodanthe area concentrates wave energy in the area and leads to wave refraction that contributes to high beach erosion and vulnerability for breaches. This also contributes to the susceptibility of the area to ocean flooding and overwash.

³ On October 24 and 25, 2011, NCDOT assembled a panel of coastal science and engineering experts from FHWA, USACE, USFWS-Refuge, and several universities. The purposes of the meeting were to: 1) evaluate the changes in the setting at both Pea Island and at Rodanthe as a result of Hurricane Irene, 2) provide engineering advice regarding the design constraints of long-term options at both locations. and 3) identify any concerns regarding the future maintenance of NC 12.

Since 2006, NCDOT has conducted a series of repairs at the Rodanthe 'S' Curves Hot Spot to restore/maintain NC 12 following major storm events:

- November 2006 – Installed a 900-foot section of sandbag-filled dune adjacent to NC 12 to protect the roadway.
- November 2009 – Following Hurricane Ida, relocated approximately 1,860 feet of the roadway 23 feet west, remaining within the existing NC 12 easement in the Refuge. The 900 feet of sandbags built in 2006 were removed and replaced, and an additional 350-foot section of sandbag-filled dune was installed on the south end of the original 900 feet (total of 1,250 feet). In association with this effort, a beach habitat restoration (nourishment) project took place at the Rodanthe 'S' Curves Hot Spot in 2010. The beach habitat restoration was done at the request of USFWS, through a condition of the 2006 Special Use Permit authorizing the original sandbag project.
- August 2011 – Severe damage to the sandbag-filled dune area occurred as a result of Hurricane Irene; the dune was rebuilt following the storm.
- March 2013 - Some sandbag-filled dune loss occurred during Hurricane Sandy (October 2012) and was repaired.
- September 2014 - One-time beach nourishment project that was designed to help reduce the impact of storms on NC 12 at the Rodanthe 'S' Curves Hot Spot for approximately three years.

The Rodanthe 'S' Curves Hot Spot is currently the location on northern Hatteras Island where NC 12 appears to be most vulnerable to storm damage.

4.1.4.3 Forecast Shoreline Changes through 2060 in the Phase IIb Project Area

As part of the coastal monitoring program, updated coastal conditions data for the Bonner Bridge Replacement Project (B-2500) project area were collected starting in early 2011. Background coastal conditions information and improvements to methodology for forecasting shoreline position, which are applicable to both the Phase IIa and Phase IIb projects, are discussed in detail in Section 4.1.2.6 of the Phase IIa EA (beginning on page 4-8).

In comparison to the 2008 FEIS shoreline forecasts (using data through June 2004), the updated 2060 high-erosion shoreline (adding data through 2014 gathered as a part of the NCDOT's shoreline monitoring program) in the Phase IIb project area shows similar forecast erosion in the Refuge portion of the Rodanthe 'S' Curves Hot Spot and less erosion (approximately 350 to 590 feet less) in Rodanthe. The current (2014) shoreline in the vicinity of the Refuge boundary is approximately 170 feet east of the 2010 high-erosion forecast shoreline presented in the 2008 FEIS.

A comparison of the 2060 high-erosion shoreline forecast from the 2008 FEIS (using data through June 2004), the updated forecast using data through 2011, the updated forecast using data through 2012, and the updated forecast through 2014 is shown for the Phase IIb project area in Figure D-1 in Appendix D.

4.1.5 Biotic Communities, Wetlands, and Open Water Habitat

Wetlands and open water habitat are discussed in Section 3.7.4 of the 2008 FEIS, as well as Section 4.1 of the *Natural Resources Technical Report* (CZR, Incorporated, 2008). A total of 20 biotic communities were mapped within the entire Bonner Bridge Replacement Project (B-2500) project area based on field surveys conducted between 2003 and 2005, including ten wetland biotic communities and one jurisdictional open water community.

In 2012, NCDOT updated the wetland delineations. Section 404 jurisdictional and Coastal Area Management Act (CAMA) coastal wetland boundaries were updated, and NPS wetland boundaries were determined. The revised wetland boundaries were approved by USACE, NCDEQ-DCM, and NPS. The Phase IIb impact assessment presented herein uses these new wetland delineations. It should be noted that these updates were completed and approved prior to Hurricane Sandy in October 2012. A review of aerial photography after Hurricane Sandy showed that in the Phase IIb project area affected, new areas of overwash sand appeared, likely affecting a small amount of wetland that was recently delineated. However, the total amount of overwash areas was not calculated, nor was the depth of the overwash sand evaluated. Depending on the depth of the sand, wetland communities could quickly recover or be turned into upland communities.

As part of this updated analysis of jurisdictional areas within the Phase IIb project area, some of the upland communities listed in the 2003 and 2005 survey results were consolidated, and some wetland communities were also merged (e.g., black needle rush, brackish marsh, and smooth cordgrass became marsh) because of the complex and mosaic nature of the occurrence of these communities. In addition to marsh, several of the previously described wetland biotic communities (salt shrub and grassland and a combination of the two, and maritime shrub and grassland and a combination of the two) were designated as additional CAMA variant communities. The CAMA designation identifies communities that receive tidally influenced flooding and contain species subject to regulation as “coastal wetlands,” a category of Areas of Environmental Concern (AEC). These CAMA variant communities, plus the marsh community, contain “AEC coastal wetlands” which are subject to NCDEQ-DCM jurisdiction under CAMA, as well as Section 404.

Within the Phase IIb project area, Section 404 jurisdictional areas occur within 18 wetland biotic communities and four open water communities (see Table 2). Open water categories consist of open water, pool, ditch, and culvert. Pools include several

Table 2. Comparison of Existing (2012) and FEIS (2008) Biotic Communities within the Phase IIb Project Area

Biotic Community	Existing (2012) (acres)	FEIS (2008) (acres)
Open water	382.68	342.13
Open water-culvert	0.02	0.00 ¹
Open water-ditch	1.06	0.00 ¹
Open water-pool	7.07	9.44
Upland beach	45.49	45.98
Upland dune	80.84	91.22
Upland man-dominated	157.49	147.18
Upland maritime grassland	69.78	11.73
Upland maritime shrub thicket	37.47	96.57
Upland maritime shrub/grassland	34.29	0.00
Upland reed stand	0.29	0.00
Upland salt shrub/grassland	0.00	16.43
Upland overwash	0.00	31.43
Wetland black needlerush ²	0.00	51.69
Wetland man-dominated	0.30	4.15
Wetland maritime grassland	18.26	24.07
Wetland maritime shrub thicket	34.34	<u>59.11</u>
Wetland maritime shrub/grassland	30.95	<u>0.00</u>
Wetland marsh	12.69	<u>0.00</u>
Wetland reed stand	1.60	<u>3.96</u>
Wetland salt grassland	8.02	<u>0.00</u>
Wetland salt shrub thicket	2.23	<u>0.00</u>
Wetland salt shrub/grassland	13.62	<u>68.60</u>
Wetland smooth cordgrass ²	0.00	<u>14.51</u>
Wetland overwash	0.00	<u>9.68</u>
CAMA marsh	63.07	0.00
CAMA wetland maritime grassland	5.97	0.00
CAMA wetland maritime shrub thicket	0.17	0.00
CAMA wetland maritime shrub/grassland	4.62	0.00
CAMA wetland salt grassland	3.04	0.00
CAMA wetland salt shrub thicket	0.73	0.00
CAMA wetland salt shrub/grassland	11.74	0.00
CAMA wetland salt/shrub grassland	0.81	0.00
TOTAL	1,028.64	1,027.88

¹Area included within open water-pool category.

²CAMA coastal wetlands in 2010 EA.

Note: The difference in the two totals reflects rounding.

small interdunal ponds between NC 12 and the primary dune field. Pools are not regularly connected to other waters and are mostly permanent or frequently flooded.

Rainfall is the most common source of input for the pools. Ditches and culvert areas are mostly maintained areas found in association with NC 12. All other open water areas include the waters of Pamlico Sound, nearshore ocean, and some ditches that are directly connected to the sound. Open water includes intertidal areas (including mud flats) and some man-modified areas (i.e., dug-out or excavated areas within natural marsh).

A comparison of the previous biotic communities mapping and the updated mapping within the approximate 1,028-acre Phase IIb project area (see Table 2) shows Section 404 jurisdictional wetland areas in the project area (all wetlands, including CAMA wetlands) decreased 23.61 acres from 235.77 acres to 212.16 acres with the 2012 delineation and jurisdictional waters (open water, culverts, ditches, pools) increased by 39.26 acres from 351.57 acres to 390.83 acres. Additionally, areas regulated as CAMA AEC areas (CAMA communities in the project area with the 2012 delineation and wetland black needlerush and wetland smooth cordgrass in the previous delineation) increased by 23.95 acres from 66.20 acres to 90.15 acres. In general, most changes in project area biotic communities between the two evaluations are associated with shrub thickets (upland and wetland), which occupied 15.15 percent of the project area in the 2008 FEIS, but occupy about 7.20 percent of the Phase IIb project area in 2012. The reduction in the area of maritime shrub thickets may be as a result of less protection from salt spray and/or storm damage, allowing grasses to become co-dominant or more prevalent within these former shrub-dominated communities. Many areas formerly occupied by maritime shrub thickets are now occupied by maritime shrub/grassland, salt shrub/grassland, salt grassland, and maritime grassland communities.

4.1.6 Protected Species

The *Biological Assessment* (BA) (FHWA and NCDOT, 2008) for the Bonner Bridge Replacement Project (B-2500), as well as Section 3.7.7 of the 2008 FEIS, addressed 12 species granted protection under Section 7 of the ESA of 1973 and critical habitat for one was discussed in Section 4.2.4.4 of the Phase IIa EA and in a 2013 technical memorandum for the Atlantic Sturgeon (CZR Incorporated, 2013). In December 2014 and January 2015, two additional protected species were designated as “threatened” and granted protection by USFWS, northern long-eared bat (*Myotis septentrionalis*) and rufa red knot (*Calidris canutus rufa*).

The Phase IIb project area offers habitat for the following protected species:

- Piping plover foraging habitat (beach)
- Roseate tern (beach and interdune)

- Rufa red knot (beach and tidal flat)
- Five species of sea turtles:
 - Hawksbill sea turtle (ocean)
 - Kemp’s ridley sea turtle (ocean and sound)
 - Leatherback sea turtle (ocean, sound, and beach)
 - Green sea turtle (ocean, sound, and beach)
 - Loggerhead sea turtle (ocean, sound, and beach)
- Two species of sturgeon
 - Shortnose sturgeon (ocean and sound)
 - Atlantic sturgeon (ocean and sound)
- Seabeach amaranth (beach and dunes)

New foraging and potential nesting habitat for piping plovers and other beach nesting birds was created as a result of Hurricane Irene and subsequent storms, including Hurricane Sandy. The open, bare sandy overwash areas east and west of NC 12 serve as ephemeral habitat areas that provide potential nesting habitat for the piping plover and other early successional beach nesters, such as the least tern (*Sternula antillarum*), the American oystercatcher (*Haematopus palliatus*), and several other waterbird species. There is little ideal habitat for piping plovers in the Phase IIb project area. Several least tern nesting colonies, which sometimes nest in association with piping plovers, were documented in the NCDOT bird surveys referenced in Section 2.6.4 of the Phase IIa EA (conducted from December 2011 through November 2012) along NC 12 between Oregon Inlet and the new Pea Island breach. Updates for bird surveys through 2015 are presented in Section 2.6.2.1 of this revised Phase IIb EA. The Phase IIb project area was not surveyed during 2012 but was in 2013, 2014, and 2015. Nesting birds were not identified in the Phase IIb project area. Sea turtle nests were found on the beach in the Phase IIb area in 2014 and 2015.

4.1.7 Essential Fish Habitat

Since the preparation of the *Essential Fish Habitat Assessment* (CZR, Incorporated, 2008) for the Bonner Bridge Replacement Project (B-2500), as well as Section 3.7.6.3 of the 2008 FEIS (beginning on page 3-91), red drum (*Sciaenops ocellatus*) and calico scallop (*Agopecten gibbus*) are no longer managed by the South Atlantic Fisheries Management Council (SAFMC). No new species have become managed by SAFMC or other state or federal fisheries management entities. Red drum are still managed by the Atlantic States

Marine Fisheries Commission (ASMFC), which serves as a deliberative body, coordinating the conservation and management of the states' shared nearshore fishery resources and the NC Division of Marine Fisheries.

Essential fish habitat in the Phase IIb project area has not substantially changed since the 2008 FEIS. It includes soundside wetlands (estuarine emergent), submerged aquatic vegetation in the sound (seagrass), and open water in the sound (estuarine water column).

In general in the Phase IIb project area, waters less than 6 feet deep within Pamlico Sound are considered potential SAV habitat. The North Carolina Marine Fisheries Commission (NCMFC) defines SAV habitat as an area that is currently vegetated with one or more appropriate (native) SAV species, or an area that has been vegetated by one or more appropriate species within the past 10 annual growing seasons and meets the average growing conditions needed (water depth of 6 feet or less, average light availability [Secchi depth of 1 foot or more], and limited wave exposure). The total Pamlico Sound (open water) impacts reflect the impact to SAV habitat.

Evaluation of SAV in the 2008 FEIS and 2010 EA was based on general NCDEQ-DMF maps generated with pre-2000 aerial data (the latest available at the time). NCDOT conducted on-site SAV surveys in the Rodanthe area in 2009, 2011, 2012, and 2013 and generated a SAV map using 2012 aerial photography. NCDOT SAV data from 2009 through 2013 have documented more SAV in the Rodanthe area compared to the pre-2000 NCDEQ- DMF SAV maps used in 2008 and 2010. Some of the additional SAV coverage documented by NCDOT is likely the result of better aerial mapping tools and data and more extensive on-site surveys by NCDOT.

Based on the 2012 aerial SAV mapping, all open water of the Pamlico Sound crossed by the Bridge on New Location Alternative (all three alignments) contain either "patchy" or "sparse" SAV. On-site surveys from this area in 2013 documented that 88 percent of the surveyed plots contained SAV, and of the plots with SAV, shoal grass (*Halodule wrightii*) was found in 55 percent of the plots, widgeon grass (*Ruppia maritima*) was found in 55 percent of the plots, and eel grass (*Zostera marina*) was found in 46 percent of the plots. The surveys found that 45 percent of the plots surveyed had 60 percent or greater coverage. The 2013 SAV survey data also found that the southern half of the 2013 Bridge on New Location Alternative over the sound was comprised of generally deeper water depths dominated by eel grass and widgeon grass, while the northern half consisted of shallower water with firmer and sandier substrate and was dominated by shoal grass.

SAV boundaries were mapped in 2014 and 2015 along the 2014B Bridge on New Location Study Alignment (preferred) as described in Section 2.6.2.2. SAV coverage also was determined. It was found that approximately 54 percent of the SAV beds that would be affected by the 2014B Bridge on New Location Study Alternative alignment

consisted of SAV beds with coverage of 50 percent or greater, and 46 percent consisted of SAV beds with coverage less than 50 percent. SAV species were not identified in 2014 and 2015 but are presumed to be the same three species found during the 2013 surveys and noted in the previous paragraph.

4.2 Updated Impacts of the Phase IIb Detailed Study Alternatives

This section updates the impact discussions presented in Chapter 4 of the 2008 FEIS and Section 2.3.3 of the 2010 EA. It focuses on updates relevant to Phase IIb of the Bonner Bridge Replacement Project (B-2500). The characteristics of the Phase IIb detailed study alternatives evaluated in this revised Phase IIb EA, the Bridge on New Location Alternative (three alternative alignments) and the Bridge within Existing NC 12 Easement Alternative, would be similar to what was defined in the 2008 FEIS as the Bridge South component of the Road North/Bridge South and as the Phased Approach/Rodanthe Bridge alternatives, respectively. Changes in impacts are associated with minor changes in the characteristics of the project area and refinements to the 2008 designs of the detailed study alternatives. In general, these changes reduced or did not substantially change impacts.

As a result of changes in project area conditions and in the designs of the detailed study alternatives, some impacts have changed since they were last presented in the 2008 FEIS and 2010 EA. This section addresses changes in the following types of direct impacts:

- Community impacts
- Visual impacts
- Cultural resource impacts
- Parks and recreation impacts
- Natural systems impacts
- Noise impacts
- Air quality impacts

Direct impacts include all impacts associated with the construction, operation, and maintenance of the Phase IIb project.

Indirect and cumulative impacts findings contained in Section 4.12 of the 2008 FEIS are unchanged. In terms of indirect impacts, as discussed in Section 4.12.5 of the 2008 FEIS, construction of a project in the Parallel Bridge Corridor would not induce changes in development growth trends, because the project does not have an economic

development purpose, and is consistent with local area land use plans. In addition, it would not serve a specific land development, would be unlikely to stimulate land development having complementary functions, and would be unlikely to influence substantial intraregional land development location decisions since it would replace an existing two-lane facility with a new two-lane facility. Finally, it is not being introduced to an area with notable natural features that could be lost to development.

In terms of cumulative impacts, based on discussions in Section 4.12.6 of the 2008 FEIS:

- Phase IIb detailed study alternatives would not interfere with the Outer Banks Task Force’s goal to implement a long-term transportation solution for NC 12 at the three hot spot locations in the Bonner Bridge Replacement Project (B-2500) project area. Although the Outer Banks Task Force no longer exists as a guiding entity for the northern Outer Banks transportation system, the agencies that comprised the task force are represented on the NEPA/Section 404 merger team for the Bonner Bridge Replacement Project and have offered comments on the long-term solutions through the merger process. The Phase IIb detailed study alternatives would in fact implement a long-term solution to the effects of shoreline erosion and ocean overwash on NC 12 at the Rodanthe ‘S’ Curves Hot Spot.
- Phase IIb would change access within the Refuge in that there would be no direct paved road access to the Refuge between the ends of the Phase IIb detailed study alternatives, as described in Section 4.2.4.
- Phase IIb detailed study alternatives would not interfere with the benefits to USACE dredging offered by Phase I of the PBC/TMP Alternative.
- Phase IIb detailed study alternatives would not change the potential impact of the PBC/TMP on the preservation of the (former) Oregon Inlet US Coast Guard Station. Phase IIb would help maintain access to the station from the southern part of Hatteras Island.
- Phase IIb detailed study alternatives would not change the need to retain the terminal groin at Oregon Inlet that is associated with the PBC/TMP Alternative.
- With Phase IIb detailed study alternatives, the options for future relocation of utilities along NC 12 (moving them back multiple times in response to shoreline erosion or moving them back once to beyond the 2060 high-erosion shoreline) would still be available.
- With the Phase IIb Bridge on New Location Alternative, the cumulative effects of habitat loss or changes on the ecological integrity of the Outer Banks would be nearly identical to the Bridge South component of the Road North/Bridge South Alternative assessed in the 2008 FEIS. Like the Road North/Bridge South

Alternative, the Phase IIb Bridge on New Location Alternative would, at the south end of the Refuge and in Rodanthe, place NC 12 on a bridge west of Hatteras Island. This alternative would have direct impacts to natural habitat in the sound; however, the natural shoreline erosion process would be allowed to take place without affecting the integrity of NC 12.

- With the Phase IIb Bridge within Existing NC 12 Easement Alternative, the cumulative effect of habitat loss or change on the ecological integrity of the Outer Banks would be nearly identical to the Phased Approach/Rodanthe Bridge Alternative assessed in the 2008 FEIS. Like the Phased Approach/Rodanthe Bridge Alternative, the Phase IIb Bridge within Existing NC 12 Easement Alternative would place NC 12 on a bridge in the existing easement, resulting in the least initial direct impact to natural habitat as compared to the other PBC/TMP Alternative future phase options. Natural shoreline processes would be allowed to take place. The shoreline would erode underneath the bridge. Like the Phased Approach/Rodanthe Bridge Alternative, ultimately the Bridge within Existing NC 12 Easement Alternative would have portions located over the beach and in the ocean, with the associated direct impacts described later in Sections 4.2.4.2 and 4.2.5.

NCDOT also completed an NC 12 maintenance action associated with efforts to stabilize and maintain the reliability of NC 12 at the Rodanthe 'S' Curve Hot Spot until the proposed Phase IIb long-term project is implemented. As an interim measure, one round of beach nourishment was completed in September 2014. The USACE approved an EA for this interim measure on October 15, 2013. USACE concluded that this project would have no significant impacts. Other options considered were a temporary bridge or continuing to maintain the existing sandbag dune (for which a CE was done in the context of obtaining the Special Use Permit for the dune from the USFWS). Beach nourishment was chosen as the preferred alternative and implemented.

The 2008 FEIS examined likely maintenance activities on NC 12 until the PBC/TMP Alternative was completed (Section 4.6.8.6, beginning on page 4-68) and their potential impacts (Section 4.7.8, beginning on page 4-115). The listing of potential maintenance activities was developed by the study team's coastal engineer; based on coastal data available at the time, the need for interim nourishment was not forecast. The 2008 FEIS did, however, assess a long-term Nourishment Alternative, and its impacts are addressed in Chapter 4 of the 2008 FEIS. The interim nourishment program was essentially one round of nourishment in one part of the Bonner Bridge Replacement Project (B-2500) project area. Therefore, the potential impacts of nourishment in the Rodanthe 'S' Curves Hot Spot area are addressed in the 2008 FEIS and were taken into consideration in the selection of the PBC/TMP Alternative in the 2010 ROD.

4.2.1 Community Impacts

This section discusses changes in relocation and other community impacts associated with the Phase IIb detailed study alternatives since the 2008 FEIS, as updated in the 2010 EA. These changes result primarily from changes in the design of the Bridge within Existing NC 12 Easement Alternative made in response to the 2060 high erosion shoreline forecast completed in 2013. In addition, one business building now contains fewer businesses than previously counted, and a camping trailer park (business) has been built within the proposed right-of-way of the Bridge on New Location Alternative. The Phase IIb detailed study alternatives would result in the relocations shown in Table 3.

Table 3. Relocations

Detailed Study Alternatives	Homes	Businesses
2010 EA (Table 2-1 on page 2-7)		
Bridge on New Location (Bridge South)	2	5
Bridge within Existing NC 12 Easement (Phased Approach/Rodanthe Bridge)	6	7
Current Conditions/Detailed Study Alternatives Design		
Bridge on New Location		
• 2013 Alignment	2 ¹	4
• 2014A Alignment	5 ¹	4
• 2014B Alignment (preferred)	2 ¹	4
Bridge within Existing NC 12 Easement	5	4

¹This number does not include the relocation of camping trailers parked in the camping trailer park (one business relocation). The owner of this business indicated in 2013 that of the 23 sites, approximately 12 to 14 are rented on a long-term (yearly) basis, but that in accordance with Dare County regulations, the sites are not used for permanent residence. In 2013, seven were occupied within the acquisition area of this alternative. All but five of the 23 sites are affected by the Bridge on New Location Alternative (all three alignments).

NCDOT relocation reports presented in the 2013 Phase IIb EA, particularly addressing the 2013 Bridge on New Location alignment and Bridge within Existing NC 12 Easement Alternative, are included in Appendix E. The multi-business building displaced with all of the detailed study alternatives contained five businesses in 2010, one business in 2013, and three businesses in 2016. The two additional business tenants identified in 2016 since the relocation reports were prepared are included in the four business relocations shown in Table 3. Consistent with relocation information documented in the 2008 FEIS, updated reports indicate that impacts to minorities, large families, disabled persons, or

others who would have special problems being relocated would not be substantial. No special relocation services would be necessary. Residential relocations would not cause a housing shortage. There is adequate decent, safe, and sanitary housing that is expected to be available during the relocation period. There is a concern that if any of the residential buildings displaced contain permanent residents, the replacement housing could be up to 5 to 10 miles away because of the predominance of vacation homes in the Rodanthe area. Suitable sites for relocation of the displaced businesses are also available and business services would still be available after project implementation. Detailed information on the NCDOT policy to ensure comparable replacement housing and the North Carolina Board of Transportation's programs to minimize the inconvenience of relocation is provided in Section 4.1.1 of the 2008 FEIS.

The owner of the business building that houses three businesses and the new camping trailer park (business) is also the owner of the Liberty Service Station/Island Convenience Store in the same area on the west side of existing NC 12. The southern termini of the detailed study alternatives are located in this area. The Bridge within Existing NC 12 Easement would require taking the Liberty Service Station/Island Convenience Store and the three businesses in the multi-business building, while the Bridge on New Location Alternative (all three alignments) would require the taking of the three businesses in the multi-business building and the campground. The owner of these businesses has indicated a preference for the Bridge on New Location Alternative because of a desire to preserve the Liberty Service Station/Island Convenience Store, which is the family's main source of income. Further, the Liberty Service Station/Island Convenience Store is an important part of the Rodanthe community. Local residents depend on it for gas, groceries, and other necessities. It provides a gathering spot for locals during non-tourist season months.

The relocations do not represent a new significant impact because they are lower than identified in the 2010 EA. The 2014B Bridge on New Location Alternative (preferred) would require the least relocations.

A gravesite on Seagull Street would be avoided by the detailed study alternatives. Table 2-1 of the 2010 EA also noted that what is now the Bridge on New Location Alternative could cross a cemetery, but that no known gravesites would be affected. Both the 2010 Bridge South design and the 2013 and 2014 Bridge on New Location Alternative designs show the bridge approach passing close to the cemetery. The associated new right-of-way includes a "cut-out" that follows the cemetery boundary so that the right-of-way does not take a portion of the cemetery property. Without this "cut-out," any known graves in this portion of the cemetery would need to be relocated. If graves were to be relocated, there appears to be available space in the western part of the cemetery for the relocation of graves. If the Bridge on New Location Alternative becomes the Selected Alternative, NCDOT would conduct research and field surveys to determine precisely where graves are located to ensure no unmarked graves are unintentionally disturbed.

If a decision were made to relocate gravesites, the relocation would take place under North Carolina Statute 65-106, *Removal of Graves*, or North Carolina Statute 70-3, *Unmarked Human Burial and Human Skeletal Remains Protection Act*, if deemed appropriate. As required by law, descendants would be contacted, to the extent possible, prior to moving graves. Descendants would be involved in determining the site to relocate the graves.

With the Bridge within Existing NC 12 Easement Alternative, 2.5 acres of utility easement (approximately 15 feet wide) would be purchased in Rodanthe from adjoining properties (0.48 acres of which also will be used for final grading). Above ground utilities would be approximately 15 feet closer to homes and businesses along NC 12.

The presence of the Bridge within Existing NC 12 Easement Alternative in Rodanthe would prevent homeowners from moving homes endangered by beach erosion.

4.2.2 Visual Impacts

With any of the detailed study alternatives, a new bridge would affect the viewshed within Rodanthe, although the affected views would differ between the alternatives. The visual impacts described below do not represent significant new impacts. These impacts were documented in the 2008 FEIS and 2010 EA, and are generally unchanged.

4.2.2.1 Bridge on New Location Alternative

Aerial representations of the three Bridge on New Location Alternative alignments are shown in Figure 8, Figure 9, and Figure 10. Section 4.3.1.2 of the 2008 FEIS indicated the Bridge on New Location Alternative would result in substantial changes to panoramic and unobstructed views of the Pamlico Sound from homes along the sound's shoreline (and second-story homes farther away from the Sound) in Rodanthe. The distance of a Rodanthe area bridge from the soundside shoreline and the homes located along the shoreline would be as follows (as illustrated in Figure 11):

- 2013 Alignment: 1,500 to 2,300 feet
- 2014A Alignment: 460 feet to 1,350 feet
- 2014B Alignment (preferred): 1,050 feet to 1,400 feet

Exceptions would be two homes that would be adjacent (80 and 150 feet away) to the bridge where it crosses the shoreline in Rodanthe. The design assessed in the 2010 EA was approximately 1,200 to 1,600 feet from the shore. The changed distances from the shoreline since the 2010 EA were an additional outcome of the alignment adjustments made in the Refuge in 2013 and to minimize impacts to SAV in 2014. The relation of the Bridge on New Location Alternative (for all three alignments) to the Pamlico Sound shoreline at Corbina Drive is illustrated in Figure 12. With a greater distance, the bridge would appear thinner and the visual impact would be somewhat less. Closer to the



PHOTOSIMULATION OF THE 2013 BRIDGE ON NEW LOCATION ALTERNATIVE

Figure
8



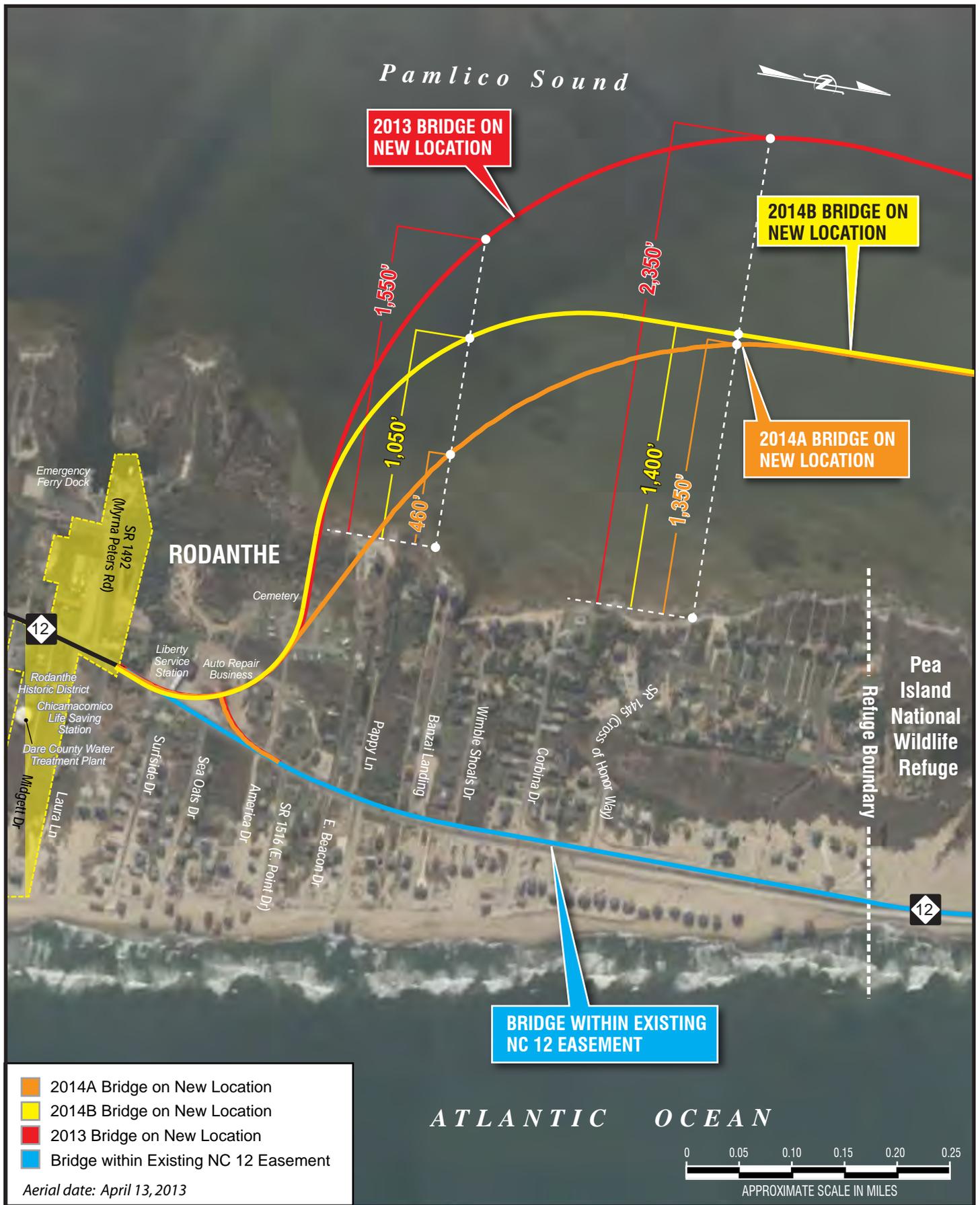
PHOTOSIMULATION OF THE 2014A BRIDGE ON NEW LOCATION ALTERNATIVE

Figure
9



PHOTOSIMULATION OF THE 2014B BRIDGE ON NEW LOCATION ALTERNATIVE

Figure
10



**BRIDGE ON NEW LOCATION ALTERNATIVE
DISTANCE FROM SHORELINE MEASUREMENTS**

Figure
11



Existing View



Photosimulation of 2013 Bridge on New Location Alternative



Photosimulation of 2014A Bridge on New Location Alternative



Photosimulation of 2014B Bridge on New Location Alternative (preferred)

**PHOTOSIMULATIONS OF THE BRIDGE ON NEW LOCATION ALTERNATIVE
ALIGNMENTS AS VIEWED FROM CORBINA DRIVE**

shore, the bridge would appear larger and be a greater visual presence in shoreline views. The 2014B Bridge on New Location Alternative (preferred) is 150 to 200 feet closer to the shore than the design assessed in the 2010 EA.

The intactness and unity of the view would be split by the line of the Rodanthe area bridge across the full 180 degrees of the view. At night, the lights of motor vehicles would be visible. Roadway lighting is not planned for the proposed bridge.

4.2.2.2 *Bridge within Existing NC 12 Easement Alternative*

An aerial representation of the Bridge within Existing NC 12 Easement Alternative is shown in Figure 13. Section 4.3.1.2 of the 2008 FEIS on page 4-29 indicated that the Phased Approach/Rodanthe Bridge Alternative would substantially affect the Rodanthe area, introducing an elevated roadway into the community. This also was true for the revised design assessed in the 2010 EA and is the case for the Phase IIb Bridge within Existing NC 12 Easement Alternative, as illustrated in Figure 14.

Over 50 residential and/or business structures are located along NC 12 between the Refuge boundary and the proposed southern end of the bridge, and all of these structures would have direct views of the bridge. The bridge also would be seen from most homes west of the properties adjacent to NC 12, with sightlines between, and sometimes above, the homes and businesses that line NC 12. The elevated structure would impede the viewshed of the primary viewers looking east towards the Atlantic Ocean and ocean-side viewers looking west toward the sound. Views could be blocked by the bridge as high as a building's second or third story. At an elevation of approximately 30.0 feet above mean sea level (approximately 26.5 feet above ground), the bridge would be a dominating presence at ground level, particularly for those homes and businesses close to it. Despite the slightly lower height compared with the 2008 FEIS and 2010 EA design (see Section 2.5.3), the combination of the bridge's height, length, structural characteristics, and materials would still present a structure not in keeping with the existing character of the area.

As indicated in the 2008 FEIS in Section 4.3.1.2 on page 4-30, the potential for beach erosion is severe in the Rodanthe area. By 2060, as a result of the beach eroding under the bridge, the majority of the bridge would be located in the ocean. It would be a presence within ocean views for properties currently located to the west of NC 12 and ocean views of people using the beach in Rodanthe and in the Refuge.

4.2.3 Cultural Resource Impacts

This section describes the effects of the Phase IIb detailed study alternatives on cultural resources, in accordance with Section 106 of the National Historic Preservation Act of 1966 (36 *Code of Federal Regulations* [CFR] Part 800). The cultural resource impacts described below do not represent significant new impacts. These impacts were documented in the 2008 FEIS and 2010 EA and are generally unchanged. Both detailed



NC DOT ENTERPRISE
Visualization
www.ncdot.gov/it/visualization

Project: B-2500B
County: Dare
Proposed Bridge on NC 12
Aerial View Looking North
Bridge within Existing NC 12 Easement Alternative
Artist Concept - May not reflect final Design

**PHOTOSIMULATION OF BRIDGE
WITHIN EXISTING NC 12 EASEMENT ALTERNATIVE**

Figure
13



Existing View Looking North Up NC 12



Bridge with Existing NC 12 Easement Photosimulation Looking North Up NC 12



Existing View Looking West Towards NC 12



Bridge with Existing NC 12 Easement Photosimulation Looking West Towards NC 12

**PHOTOSIMULATIONS OF THE BRIDGE WITHIN EXISTING NC 12
EASEMENT ALTERNATIVE VIEWED FROM CORBINA DRIVE**

study alternatives would have an Adverse Effect on the Refuge. The nature of the Adverse Effect would be the visual impact on the historic landscape of the Refuge and loss of access to Refuge features. As discussed in Section 4.4.1.2 of the 2008 FEIS (beginning on page 4-36), bridges in the Refuge would be a sizable new, elevated, linear, man-made feature. Although adverse, the impact of Phase IIb would be less with the Bridge on New Location Alternative (all three alignments), in that the bridge would be within the Refuge for approximately 0.4 mile. With the Bridge within Existing NC 12 Easement Alternative, a bridge would be introduced to Refuge views for approximately 1.8 miles.

As indicated in Table 2-1 of the 2010 EA, the Bridge on New Location Alternative (labeled in the table as Road North/Bridge South) and Bridge within Existing NC 12 Easement Alternative (labeled as Phased Approach/Rodanthe Bridge) would have No Adverse Effect on the Rodanthe Historic District and Chicamacomico Life Saving Station since the alternatives would be outside the district. Although the alternatives would be within the view of the resources, this view also includes modern commercial and residential structures. The current designs of the detailed study alternatives also remain outside the district and remain in a view that includes modern commercial and residential structures.

The 2014B Bridge on New Location Alternative (preferred) would cross the southern limits of the remains of a barge that are in Pamlico Sound immediately west of Rodanthe. Although based on past studies the site is not believed at this time to be eligible for the National Register, the new bridge will be designed such that, while the bridge deck will pass over the site, no piles or other parts of the bridge substructure will be located within the site itself, per discussions with the Underwater Archaeology Branch of the Office of State Archaeology. Prior to construction, the construction contractor will buoy the bow and stern of the site to ensure the site's visibility and will not disturb the site during construction. Further underwater archaeological studies of the 2014B alignment will be conducted and reviewed with the Office of State Archaeology prior to construction of the project in this location. If National Register-eligible archaeological remains are found within and will be affected by this alternative, such impacts would be mitigated by either recovering the National Register-eligible archaeological remains, bridging the National Register-eligible archaeological remains (i.e. no bridge piles or other parts of the bridge substructure constructed on top of or through the site itself), or a combination of these methods.

4.2.4 Parks and Recreation Impacts

The parks and recreation resource impacts described below do not represent significant new impacts. These impacts were documented in the 2008 FEIS and 2010 EA and did not substantially change with the design refinements associated with the detailed study alternatives for Phase IIb.

4.2.4.1 *Land Use*

The Phase IIb detailed study alternatives would affect land from the Refuge in a manner similar to the “Bridge South” component of the Road North/Bridge South Alternative and the portion of the Phased Approach/Rodanthe Bridge Alternative within the Phase IIb project area. Impacts would be:

- Bridge on New Location Alternative (all three alignments):
 - 2.79 acres of new permanent NC 12 easement
 - 19.27 acres of existing NC 12 easement returned to the Refuge and restored
 - 0.63 acres of temporary construction easement in the Refuge for a temporary traffic maintenance road to take traffic around the proposed bridge approach

- Bridge within Existing NC 12 Easement Alternative:
 - No new permanent NC 12 easement
 - 2.06 acres of temporary construction easement in the Refuge. In the Refuge, an approximately 5-foot-wide temporary construction easement would be needed for the entire length of the project on the sound side of the existing NC 12 easement. The purpose of this narrow easement would be primarily to provide room for construction workers to erect erosion control measures (fencing) along the edge of the existing NC 12 easement. A pile jetting pipe would be placed between NC 12 and the Pamlico Sound on a 10-foot wide temporary easement at what is currently expected to be three locations in the Refuge. The easement in Rodanthe would be needed to provide room for construction equipment to operate when completing grading in the NC 12 right-of-way.

The Refuge manager in a letter dated July 22, 2013, indicated that a use of Refuge land by the Bridge on New Location Alternative (at that time estimated to be 2.87 acres) could likely be determined a minor modification of the existing NC 12 easement if adequate mitigation can achieve no net loss of habitat quantity and quality. The current estimate of Refuge use as noted above is 2.79 acres.

4.2.4.2 *Recreational Use*

Bridge Within Existing NC 12 Easement Alternative

As with the Road North/Bridge South and Phased Approach alternatives discussed in the 2008 FEIS in Section 4.5.3 (beginning on page 4-44), direct motor vehicle access to the Refuge would be eliminated for the length of the bridge component of the Phase IIb detailed study alternatives (see Figure 3). Sacrificing direct motor vehicle access in favor of eliminating the need for artificial dunes to maintain a surface road is the preference of USFWS, which has indicated in the past that it will provide for some form of

replacement access to the Refuge and its facilities where direct access from a surface road is lost in Phase II and in future phases of the Bonner Bridge Replacement Project (B-2500).

As the beach erodes as a part of natural coastal processes, the Bridge within Existing NC 12 Easement Alternative's bridge would be located first over the beach and then in the ocean. As a result, several recreational activities that occur in this area, including fishing, hiking, surfing, wind surfing, kite boarding, swimming, ocean kayaking, and birding, would be affected both by the presence of the bridge and the loss of direct Refuge access, as discussed in Section 4.5.3.3 of the 2008 FEIS. As with the Phased Approach alternatives discussed in the 2008 FEIS and the Phase IIa Selected Alternative identified in the 2013 Phase IIa ROD, bridge piles in the ocean could change the types of fish that congregate around the shore. To the extent that certain sections of the bridged roadway would be over the beach, beach and water activities would be affected, but not precluded where it is safe, by the presence of the bridge and bridge piles. Once the bridge piles are located in the ocean, the ability to surf in the area affected would be eliminated. Ultimately this would be the case for almost all of the entire 2.27-mile Bridge within Existing NC 12 Easement Alternative bridge. The piles would change how and where the waves break, which would interfere with the swells in such a way that the waves would no longer be conducive to good surfing. In addition, the presence of bridge piles in areas where the bridge would be less than 150 feet from shore would be a safety hazard to surfers and other recreational ocean users.

The economic impact to Dare County of eliminating the paved road access to the Refuge was assessed (2008 FEIS, Section 4.1.5.3, beginning on page 4-12). It was determined that on average, the losses of tourism associated with loss of access to the Refuge "would not have a major economic impact on the Outer Banks/Dare County area." Recreational user surveys conducted for the economic analysis, as documented in Section 3.5.2.4 of the 2008 FEIS (beginning on page 3-43), observed fishing (particularly from the catwalks on Bonner Bridge and the terminal groin/sea walls at Oregon Inlet), birding, surfing, beach use (sunbathing), walking, and kayaking as activities in the Refuge (see Table 3-10 of the 2008 FEIS, page 3-44). Visitors also visited the Refuge's visitor center. As indicated in the 2008 FEIS study, the key question in terms of the economic impact to the Outer Banks economy is what resource/activity is lost, or to which access is reduced or lost, and whether there is no other location on the Outer Banks to participate in the activity. Visitor survey results in Section 4.1.5.3 of the FEIS (page 4-12) found that without any paved road access to the Refuge, 9 percent of Refuge visitors would not visit the Refuge and had no other location on the Outer Banks to conduct their activity. They would thus not visit the Outer Banks and this loss of visitors would have an economic impact.

There are other locations on the Outer Banks, including Hatteras Island, and specifically the Seashore, where one can use a beach (sunbathing), walk, kayak, and go birding

along a beach and other natural habitats. Thus, the loss of use of beach area for these activities because of bridge piles on the beach or offshore is not expected to have a notable economic impact on Dare County beyond the impact associated with changed access.

Regarding surfing, during the Phase IIa scoping comments, the Outer Banks Chapter of the Surfrider Foundation submitted a petition (with 1,148 signatures) in favor of giving consideration to design options that, at a minimum, provide continued, if not improved, access to the Rodanthe 'S' Curves Hot Spot area for surfing. The petition did not indicate support for a particular alternative, but it stated that the 'S' Curves Hot Spot area is a top surfing spot in the United States. It also emphasized the contribution of surfing to the local economy. There are other locations on the Outer Banks, including Hatteras Island, and specifically the Seashore, where one can surf. Therefore, the loss of use of beach area in the Refuge and at the 'S' Curves Hot Spot as a surfing opportunity because of bridge piles on the beach or offshore is not expected to have a notable economic impact on Dare County beyond the impact associated with changed access.

Of the Refuge activities listed above, three can occur only in the Refuge: 1) fishing from the catwalks on Bonner Bridge (under Seashore jurisdiction) and terminal groin/seawalls at Oregon Inlet, 2) birding at the managed impoundments and Oregon Inlet, and 3) visiting the visitor center. The first is a unique place to fish. The managed impoundments are unique in terms of the habitat provided and the diversity and number of bird species using these areas. In addition to the impoundments, both sides of Oregon Inlet and adjacent habitats often attract birds not commonly seen in other places and are targeted by visiting birders. The visitor center enhances the USFWS-Refuge's mission. None of these locations is associated with the beach or specifically the Phase IIb detailed study alternatives.

Fishing from the catwalks was discussed in Section 4.5.3.2 of the 2008 FEIS (beginning on page 4-46) and revisited in Section 2.3.2.1 of the 2010 EA (page 2-17). Phase I of the PBC/TMP Alternative will leave a part of Bonner Bridge in place as a pier that could be used for recreation and provide direct road access to an existing parking lot. This parking lot is used by those who fish at Oregon Inlet, whether from the existing catwalks or terminal groin/seawalls, and those who do birding at Oregon Inlet. Formal consultation with NMFS in 2013 yielded a new concern related to the effect of existing fishing at Oregon Inlet on protected sea turtles. NMFS indicated that there is evidence that at least four sea turtles have been hooked during recreational fishing in Oregon Inlet since 1989 and one hooking occurred from the existing bridge catwalks in 2012. As such, NCDOT will install "no fishing" signs to not allow fishing on the catwalks during Oregon Inlet replacement bridge construction to satisfy NMFS concerns and for safety reasons. To satisfy NMFS concerns, "no fishing" signs also will be installed on the portion of Bonner Bridge that will be left in place as a pier. If and when a decision is made to allow fishing on the pier, FHWA will initiate Section 7 consultation with NMFS

prior to the “no fishing” signs being removed. (See *Protected Species* under Section 3.5.1 of the Phase IIa ROD, pages 25 and 26.) If fishing is not allowed on the pier, there could be an economic impact on Dare County because fishing at Oregon Inlet is a unique fishing opportunity that cannot be found elsewhere in Dare County. That impact, however, is accounted for within the 9 percent loss of Refuge visitors associated with changed access presented in the 2008 FEIS in Section 4.1.5.3.

From the perspective of birding at the impoundments, none of the alternatives assessed in the 2008 FEIS that are a part of the PBC/TMP Alternative would preclude birding at the impoundments, although to the extent direct road access is lost as future phases of the PBC/TMP Alternative are built, users will have to rely on alternate access which USFWS-Refuge has indicated it would provide. This is documented in the second paragraph of page 4-12 of the 2008 FEIS.

The Phase IIa interim bridge project involves the displacement and relocation of a parking lot on the ocean side of NC 12. The parking lot relocation would be completed during the construction of Phase IIb at a site approximately 900 feet north of the northern terminus of Phase IIb. The site was selected by the Refuge manager with input from NCDOT. It would include the same number of spaces as the existing parking lot.

Finally, the visitor center could be moved. Based on the forecasted shoreline position near the visitor center, it will likely eventually be moved because its site is forecast to be in the ocean by 2060.

As noted above, if paved road access to the Refuge were lost completely, such as with the Pamlico Sound Bridge Alternative, 9 percent of Refuge visitors may choose not to come to the Outer Banks, which would have the associated economic impact documented in 2008 FEIS Section 4.1.5.3 (page 4-12). A full 9 percent loss of Refuge visitors would not be the case with the PBC/TMP Alternative, in that it could retain direct road access to at least two locations based on 2060 shoreline forecasts: at Oregon Inlet and the area between Phase IIa and Phase IIb where, based on shoreline forecasts, no improvements to NC 12 are needed. However, at this time there is a possibility that fishing would not be allowed from the part of Bonner Bridge left as a pier because of a past history of protected sea turtles being hooked by fishing at Oregon Inlet. In addition, a new assessment of potential location alternatives for Phase IIa is expected to be completed in early 2017. Study of an alternative that would bypass the portion of NC 12 not threatened by shoreline erosion between now and 2060 will be assessed.

Overall, from the perspective of access, the loss of visitors to the Refuge would be 9 percent or less with the PBC/TMP Alternative.

Bridge on New Location Alternative

As discussed in Section 4.5.4 of the 2008 FEIS, the Bridge South component of the Road North/Bridge South Alternative (now called the Bridge on New Location Alternative)

would create an offshore obstruction for recreational users of the Pamlico Sound, such as wind surfers, kayakers, and kite boarders, as the bridge moves out from shore in Rodanthe. This would limit the area of water available for such uses. There are no businesses serving these types of activities along the shoreline in the area affected. The shoreline is lined with vacation rental cottages.

The distance of a Rodanthe area bridge from the soundside shoreline would be as follows (as illustrated in Figure 11):

- 2013 Alignment: 1,500 to 2,300 feet
- 2014A Alignment: 460 feet to 1,350 feet
- 2014B Alignment (preferred): 1,050 feet to 1,400 feet

The design assessed in the 2010 EA was approximately 1,200 to 1,600 feet from the shore. The 2014B Bridge on New Location Alternative (preferred) is 150 to 200 feet closer to the shore than the design assessed in the 2010 EA. The bridge would have 110- to 120-foot span length between piers and vertical clearance of approximately 17.0 feet above mean high water. The 2008 FEIS described the bridge in the sound as having a 100-foot span length and 10 feet of vertical clearance above mean high water.

4.2.5 Natural Systems Impacts

The natural systems impacts described below do not represent significant new impacts. Similar impacts were documented in the 2008 FEIS and 2010 EA and did not substantially change with the design refinements associated with the Phase IIb detailed study alternatives or with changes in the affected environment that have occurred since the release of those documents.

4.2.5.1 Surface Waters and Water Quality

As discussed in Section 4.7.2 of the 2008 FEIS on page 4-75 and on page 4-82, waters associated with Pamlico Sound are classified as SA waters (Class A saltwaters) with a supplemental classification as High-Quality Waters (HQW). Construction-related water quality impacts to the open water of the sound could result in temporary increases in turbidity and a potential decrease in dissolved oxygen; however, given the dynamic nature of the waters in the sound, a temporary increase in turbidity likely would not be notable as the flux of water through the sound would reduce the potential for any permanent water quality problems. Construction of the entire Bridge within Existing NC 12 Easement Alternative would occur over land except for pumping water from Pamlico Sound for jetting operations; therefore, direct water quality impacts during construction would not occur. Most of the Bridge on New Location Alternative (all three alignments) would be built over water in Pamlico Sound; therefore, direct water quality impacts during construction would occur. Impacts would be minimized by not dredging during bridge construction and by containing pile jetting spoil.

As discussed in Section 4.7.2.2 of the 2008 FEIS beginning on page 4-82, runoff from the bridges would be a potential source of pollutants to the Atlantic Ocean (in the case of the Bridge within Existing NC 12 Easement Alternative, when beach erosion results in its presence in the ocean) or Pamlico Sound (in the case of the Bridge on New Location Alternative). To minimize the potential impact of project pollutants, post-construction stormwater control measures would be implemented according to the Post-Construction Stormwater Program (PCSP), including a stormwater management plan developed in association with NCDEQ-DWR and other state and federal environmental resource and regulatory agencies during final bridge design and in the process of obtaining related permits. NCDOT's stormwater management plan for the Phase IIb bridges is expected to be the same as the stormwater management plan set forth for Phase I (the new Oregon Inlet bridge). Runoff would be collected from the ends of a Phase IIb bridge and piped to a riprap apron, which would drain to roadside swales to promote infiltration. Bridge drainage for the main bridge spans would be from deck drains (openings) at the outer edges of the deck. The bridge would be high enough to allow wind to disperse the deck drain discharge before it reaches the ground or water surface. Best Management Practices (BMPs) discussed in Section 4.7.2.2 of the 2008 FEIS (pages 4-83 to 4-84) would apply to both alternatives.

4.2.5.2 Biotic Communities

Biotic communities in the study area would be impacted permanently and temporarily as a result of project construction. The impacts to biotic communities in the Phase IIb project area are presented in Table 4.

Fill/pile and shading are two types of permanent impacts or effects associated with the project. Permanent fill impacts involve changing the ground surface by earth moving or placement of fill. Piles are a key component of bridge foundations, or bents, upon which bridge spans rest. Permanent pile impacts are the area of land used by the piles if the pile cap that connects the piles together is immediately under bridge spans and above the ground. When the pile cap is at ground level or at the surface of open water, then the area of the pile cap is considered the area of permanent impact. Shading is the area of bridge deck less the pile impacts.

Consistent with the bridge foundation design assumed for the in-easement alternative assessed for the Phase IIa project, pile caps at ground level are assumed for the Phase IIb Bridge within Existing NC 12 Easement Alternative. With the Bridge on New Location Alternative (all three alignments), either location for the pile cap could be used. In the 2010 EA, the pile cap was assumed to be just below the bridge spans in the impact assessment for the Road North/Bridge South Alternative. Thus, the permanent impact of both configurations of the bridge foundation described above is presented for the Bridge on New Location Alternative. This distinction in permanent impacts is shown in Table 4.

Table 4. Impacts to Biotic Communities in the Phase IIb Project Area

Biotic Community	Subject to Section 404 Jurisdictions?	Bridge within Existing NC 12 Easement Alternative			2013 Bridge on New Location Alternative			2014A Bridge on New Location Alternative			2014B Bridge on New Location Alternative (Preferred)		
		Permanent Fill and Pile (acres)	Permanent Shading (acres)	Temporary Easement (acres) ¹	Permanent Fill and Pile (acres) ²	Permanent Shading (acres)	Temporary Easement (acres) ¹	Permanent Fill and Pile (acres) ²	Permanent Shading (acres)	Temporary Easement (acres) ¹	Permanent Fill and Pile (acres) ²	Permanent Shading (acres)	Temporary Easement (acres) ¹
Open water	Yes	0.00	0.00	0.04	0.11 (2.88)	11.23 (8.46)	0.00	0.10 (2.58)	7.49 (9.92)	0.00	0.10 (2.70)	7.92 (10.50)	0.00
Open water-culvert	Yes	0.00	0.00	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00
Open water-ditch	Yes	0.00	0.00	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00
Open water-pool	Yes	0.02	0.00	0.03	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00
Upland beach	No	0.01	0.00	0.05	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00
Upland dune	No	0.44	1.09	0.35	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00
Upland Man-Dominated	No	2.86	7.57	0.37	3.02 (3.05)	0.35 (0.32)	0.00	2.96 (3.03)	0.53 (0.60)	0.00	3.10 (3.13)	0.33 (0.36)	0.00
Upland maritime grassland	No	0.15	1.07	1.13	0.01 (0.15)	0.51 (0.37)	0.45	0.01 (0.15)	0.37 (0.51)	0.45	0.00 (0.11)	0.41 (0.51)	0.45
Upland maritime shrub thicket	No	0.24	0.05	0.06	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00
Upland maritime shrub/grassland	No	0.04	0.27	0.29	0.01 (0.12)	0.44 (0.33)	0.18	0.00 (0.12)	0.28 (0.40)	0.18	0.00 (0.10)	0.35 (0.44)	0.18
Upland reed stand	No	0.00	0.00	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00
Wetland man-dominated	Yes	0.00	0.00	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00
Wetland maritime grassland	Yes	0.00	0.00	0.01	0.43 (0.43)	0.00 (0.00)	0.00	0.40 (0.38)	0.10 (0.10)	0.00	0.40 (0.40)	0.00 (0.00)	0.00
Wetland maritime shrub thicket	Yes	0.00	0.00	0.04	0.00 (0.04)	0.33 (0.3)	0.00	0.00 (0.01)	0.07 (0.08)	0.00	0.01 (0.08)	0.26 (0.34)	0.00
Wetland maritime shrub/grassland	Yes	0.05	0.00	0.05	0.01 (0.01)	0.04 (0.04)	0.00	0.00 (0.00)	0.01 (0.02)	0.00	0.01 (0.03)	0.03 (0.04)	0.00

Table 4 (continued). Impacts to Biotic Communities in the Phase IIb Project Area

Biotic Community	Subject to Section 404 Jurisdictions?	Bridge within Existing NC 12 Easement Alternative			2013 Bridge on New Location Alternative			2014A Bridge on New Location Alternative			2014B Bridge on New Location Alternative (Preferred)		
		Permanent Fill and Pile (acres)	Permanent Shading (acres)	Temporary Easement (acres) ¹	Permanent Fill and Pile (acres) ²	Permanent Shading (acres)	Temporary Easement (acres) ¹	Permanent Fill and Pile (acres) ²	Permanent Shading (acres)	Temporary Easement (acres) ¹	Permanent Fill and Pile (acres) ²	Permanent Shading (acres)	Temporary Easement (acres) ¹
Wetland marsh	Yes	0.00	0.00	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00
Wetland reed stand	Yes	0.00	0.00	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00
Wetland salt grassland	Yes	0.00	0.00	0.00	0 (0.01)	0.08 (0.07)	0.00	0.00 (0.02)	0.07 (0.08)	0.00	0.00 (0.02)	0.07 (0.08)	0.00
Wetland salt shrub thicket	Yes	0.00	0.00	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00
Wetland salt shrub/grassland	Yes	0.00	0.00	0.00	0.00 (0.00)	0.07 (0.07)	0.00	0.00 (0.02)	0.14 (0.16)	0.00	0.00 (0.04)	0.04 (0.07)	0.00
CAMA marsh	Yes	0.00	0.00	0.05	0 (0.03)	0.12 (0.09)	0.00	0.00 (0.03)	0.09 (0.12)	0.00	0.00 (0.01)	0.11 (0.11)	0.00
CAMA wetland maritime grassland	Yes	0.00	0.00	0.03	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00
CAMA wetland maritime shrub thicket	Yes	0.00	0.00	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00
CAMA wetland maritime shrub/grassland	Yes	0.00	0.00	0.04	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00
CAMA wetland salt grassland	Yes	0.00	0.00	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.03)	0.05 (0.08)	0.00	0.00 (0.00)	0.00 (0.00)	0.00
CAMA wetland salt shrub thicket	Yes	0.00	0.00	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00

Table 4 (concluded). Impacts to Biotic Communities in the Phase IIb Project Area

Biotic Community	Subject to Section 404 Jurisdictions?	Bridge within Existing NC 12 Easement Alternative			2013 Bridge on New Location Alternative			2014A Bridge on New Location Alternative			2014B Bridge on New Location Alternative (Preferred)		
		Permanent Fill and Pile (acres)	Permanent Shading (acres)	Temporary Easement (acres) ¹	Permanent Fill and Pile (acres) ²	Permanent Shading (acres)	Temporary Easement (acres) ¹	Permanent Fill and Pile (acres) ²	Permanent Shading (acres)	Temporary Easement (acres) ¹	Permanent Fill and Pile (acres) ²	Permanent Shading (acres)	Temporary Easement (acres) ¹
CAMA wetland salt shrub/grassland	Yes	0.00	0.00	0.00	0.00 (0.00)	0.04 (0.04)	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.04 (0.04)	0.00
CAMA wetland salt/shrub grassland	Yes	0.00	0.00	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00	0.00 (0.00)	0.00 (0.00)	0.00
TOTAL BIOTIC COMMUNITY IMPACTS		3.81	10.05	2.54	3.59 (6.72)	13.22 (10.09)	0.63	3.47 (6.37)	9.21 (12.06)	0.63	3.63 (6.61)	9.55 (12.51)	0.63

¹Impacts within the 2.54 acres of easement for the Bridge within Existing NC 12 Easement Alternative (2.06 temporary construction easement in the Refuge and 0.48 acres of utility easement in Rodanthe used in final grading) and 0.63 acres of temporary construction easement for the Bridge on New Location Alternative only. As indicated in the text above, there also would be temporary impacts within the existing NC 12 easement. The majority of the temporary impacts in the existing NC 12 easement are in upland, previously disturbed/maintained areas in the man-dominated community.

²The numbers not in parentheses assume the pile cap is immediately under the bridge spans. The numbers in parentheses assume the pile cap is a ground level or at the surface of open water.

Note: The total biotic community numbers may not equal the total of the individual community numbers because of rounding of the individual community numbers to the nearest 100th acre.

With the Bridge within Existing NC 12 Easement Alternative, permanent impacts to biotic communities would occur within the existing NC 12 easement. This alternative would permanently impact 3.81 acres of biotic communities with fill and piles and would shade another 10.05 acres. Of the 3.81 acres of permanent impacts, approximately 75.1 percent (2.86 acres) would occur in man-dominated areas. Of the 10.05 acres of shading impacts, 75.3 percent (7.57 acres) would occur in man-dominated areas. Most of temporary impacts (total of 2.54 acres) are in upland (mainly grassland); 0.07 acre are in open water and 0.22 acre are in wetland.

With the Bridge on New Location Alternative, most of the permanent impacts to biotic communities would occur outside of the existing NC 12 easement. This alternative would permanently impact by fill and piles 3.59 acres (2013 alignment), 3.47 acres (2014A alignment), and 3.63 acres (2014B alignment [preferred]) of biotic communities with fill and piles and would shade an additional 13.22 acres (2013 alignment), 9.21 acres (2014A alignment), and 9.55 acres (2014B alignment [preferred]). The fill and pile impact assumes the pile cap would be just under the bridge on new location spans (not in the water and would not result in permanent impact), which was assumed in the 2010 EA in calculating pile impacts for the Road North/Bridge South Alternative. Should the bridge be designed such that the pile cap is at ground and water level, the fill and pile impact to biotic communities would increase to 6.72 acres (2013 alignment), 6.37 acres (2014A alignment), and 6.61 acres (2014B alignment [preferred]), which as indicated above would be a reasonable representation of the fill and pile impact on land and in the sound if during final design, the decision was made to place the pile cap at ground and water level. The larger fill and pile impact would reduce the shading impact to 10.09 acres (2013 alignment), 12.06 acres (2014A alignment), and 12.51 acres (2014B alignment [preferred]).

Of the permanent fill and pile impact of 3.47 to 3.63 acres, approximately 85 percent (2.96 to 3.10 acres) would occur in man-dominated areas and approximately 3 percent (0.10 to 0.11 acres) would occur in open water. The 0.63 acre of temporary easement impacts to biotic communities would occur within upland maritime grassland and upland maritime shrub/grassland.

4.2.5.3 Wetlands and Open Water Habitat

Given that the detailed study alternatives are located similarly to their counterparts in the 2008 FEIS and 2010 EA, their impacts to wetland and open water habitat would be similar.

The Bridge within Existing NC 12 Easement Alternative would permanently impact 0.05 acre of wetlands and 0.02 acre of open waters (pool) with fill and pile; no wetlands or open waters would be impacted by shading. This alternative would temporarily impact 0.01 acre of wetlands (maritime grassland) and 0.03 acre of open waters (pool). Neither permanent nor temporary CAMA wetland impacts would occur.

Wetland, open water, and CAMA wetland impacts would differ in small ways between the three Bridge on New Location Alternative alignments. The Bridge on New Location Alternative would permanently fill wetlands as follows:

- 2013 Alignment: 0.44 acre
- 2014A Alignment: 0.39 acre
- 2014B Alignment (preferred): 0.41 acre

With all three alignments, permanent pile impacts to wetlands would be <0.01 acre with pile caps just under the bridge spans. If the pile caps were placed at ground level, the permanent pile impact would be approximately 0.07 acre. Bridge shading would affect 0.68 acre of wetland or 0.61 acre with the pile caps at ground level.

Depending on whether the pile caps are just under the bridge spans (lower impact) or placed at ground level, CAMA wetland impacts would be:

- 2013 Alignment: <0.01 acre to 0.03 acre
- 2014A Alignment: <0.01 acre to 0.05 acre
- 2014B Alignment (preferred): <0.01 acre to 0.03 acre

Depending on whether the pile caps are just under the bridge spans (higher impact because less direct pile impact) or placed at ground level, CAMA wetland bridge shading impacts would be:

- 2013 Alignment: 0.13 acre to 0.16 acre
- 2014A Alignment: 0.12 acre to 0.15 acre
- 2014B Alignment (preferred): 0.15 acre to 0.16 acre

There are no temporary impacts to wetlands, including CAMA wetlands, currently proposed.

Open water impacts would vary by bridge length over Pamlico Sound: 2.2 miles with the 2013 alignment, 1.97 miles with the 2014A alignment, and 2.06 miles with the 2014B alignment (preferred). Depending on whether the pile caps are just under the bridge spans (lower impact) or placed at water level, open water pile impacts would be:

- 2013 Alignment: 0.11 acre to 2.88 acres
- 2014A Alignment: 0.10 acre to 2.58 acres

- 2014B Alignment (preferred): 0.10 acre to 2.70 acres

Depending on whether the pile caps are just under the bridge spans (higher impact because less direct pile impact) or placed at water level, open water bridge shading impacts would be:

- 2013 Alignment: 8.46 acres to 11.23 acres
- 2014A Alignment: 7.48 acres to 9.92 acres
- 2014B Alignment (preferred): 7.92 acre to 10.50 acres

4.2.5.4 *Protected Species*

Protected species and habitat for protected species addressed in the 2008 BA occur in the Phase IIb project area. Descriptions and details on these species and associated habitat are found in the 2008 FEIS (Section 4.7.9), the 2008 BA, as well as a 2013 technical report on the Atlantic sturgeon (CZR, Incorporated, 2013) and a 2014 technical report on the rufa red knot (FHWA and NCDOT, 2014). Updated information also is found in the 2013 technical memorandum on threatened and endangered species for Phase IIa (FHWA and NCDOT, 2013) and a similar document was prepared for Phase IIb (FHWA and NCDOT, 2016). The current status of consultation under Section 7 of the ESA of 1973 is described in Section 6.3.

Protected Species in an Aquatic Environment. The direct effects common to all sea turtles identified in Section 7.2.1 of the 2008 BA remain applicable. The effects of noise, lighting, and turbidity described in the 2008 BA for construction in Oregon Inlet also would be applicable to the Phase IIb Bridge on New Location Alternative (all three alignments) because this alternative would include a bridge over Pamlico Sound, but because sea turtles occur less frequently in the Bridge on New Location Alternative area, the chance of an effect is less likely. There would be no dredging associated with in-water construction with this alternative. Shading and fill do not have a direct impact on sea turtles because they are mobile organisms and can find other aquatic habitat.

Pamlico Sound open water habitats would be affected by jetting of piles with the detailed study alternatives. In the case of the Bridge on New Location Alternative (all three alignments), open water habitats would be subject to jetting during construction; these effects would be primarily short-term and are not likely to adversely affect sea turtles. Jetting spoil would be contained. For the entire Phase IIb Bridge within Existing NC 12 Easement Alternative and northern end of the Bridge on New Location Alternative (all three alignments), NCDOT would pump water from Pamlico Sound to the NC 12 easement to use in jetting piles on land. The pumping of water would be continuous while the jetting equipment is running, and the volume of water needed to be pumped would be about 1,000 to 1,500 gallons per minute. The internal diameter of the jetting pipes likely would be about 2 to 2.5 inches and at least two pipes likely would

be used. Turtles in the water likely would avoid the area where the water is disturbed by the pumping of water into the jetting pipes.

As documented in Appendix A of the 2008 BA for the Bridge within Existing NC 12 Easement Alternative (then the Phased Approach/Rodanthe Bridge Alternative), the potential impacts with Phase IIb to sea turtles in the aquatic environment also would occur when the Bridge within Existing NC 12 Easement Alternative bridge piles are in the ocean as a result of shoreline erosion. These impacts are because of highway run-off and predation on hatchlings by fish attracted to piling habitat.

The direct effects of the project on the shortnose sturgeon remain largely unchanged from those listed in Section 8.2.1 of the 2008 BA and also would apply to the Atlantic sturgeon. The effects of construction activities in Pamlico Sound with the Phase IIb Bridge on New Location alternative would be similar to the effects of the construction of the Phase I bridge over Oregon Inlet. Both would generate a short-term localized increase in noise, turbidity, and siltation. Again, there would be no dredging associated with in-water construction for Phase IIb, and NCDOT is planning to pump water from Pamlico Sound and, in the case of the Bridge on New Location Alternative, jet piles in Pamlico Sound. However, the rarity of shortnose and Atlantic sturgeon in the Albemarle and Pamlico sounds, and their preference for deep spots during the day and tidal flats at night in the summer and early fall (Jackson et al., 1992), makes the possibility that project construction in Pamlico Sound would adversely affect these species discountable. In addition, any occurrence of these species within the construction area likely would be short-term and in conjunction with annual spring migrations. This further discounts the prospect that project construction in Pamlico Sound would adversely affect these species. As was indicated above for sea turtles, the Phase IIb Bridge on New Location Alternative (all three alignments) would permanently affect open water habitat in the Pamlico Sound by piles or shading (including SAV). Piles would permanently occupy a discountable portion of the potential soft-bottom habitat for the shortnose and Atlantic sturgeon in Pamlico Sound. Piles associated with the Bridge within Existing NC 12 Easement Alternative would ultimately be in the Atlantic Ocean as a result of shoreline erosion. Sturgeon could be affected by highway runoff with bridges over Pamlico Sound or the Atlantic Ocean. Piles and highway runoff in either Pamlico Sound or the Atlantic Ocean are unlikely to have any adverse effects on either of the two sturgeon species because they are mobile organisms and can find other adjacent available aquatic habitat.

NMFS issued a letter on September 30, 2013 (see Appendix D of the Phase IIa ROD) concluding formal consultation with FHWA on sea turtles and sturgeon. The focus of the letter was on Oregon Inlet, where sea turtles and sturgeon are known to occur and the proposed Phase I replacement bridge over Oregon Inlet. The letter did not indicate that a potential for impact to sea turtles or sturgeon existed for Phase IIb with the

detailed study alternatives. No fishing access facilities are planned as part of Phase IIb bridges.

The biological conclusion of May Affect, Not Likely to Adversely Affect for the Bonner Bridge Replacement Project's (B-2500) PBC/TMP Alternative for protected species in an aquatic environment would not change because of the characteristics of the Phase IIb alternatives.

Protected Species on Land. The Phase IIa and Phase I areas include beach habitat suitable for nesting sea turtles. The Phase IIb project area also includes the same type of beach habitat. The effects of those projects and the PBC/TMP Alternative as a whole on nesting sea turtles were described in the documents listed in the first paragraph of this section. Because Phase IIb project impacts to sea turtles and their habitat on land would be similar to those previously described in the documents listed in the first paragraph of this section, there are no changes in the effects determinations for sea turtles for either Phase IIb detailed study alternative.

The Phase IIa and Phase I areas include habitat suitable for seabeach amaranth and the effects of the projects on the plant and its habitat were described in the documents listed in the first paragraph of this section. The Phase IIb project area also includes habitat suitable for seabeach amaranth, and because the project impacts are similar to or less than those previously evaluated in other documents, there is no change in the biological conclusion of May Affect, Not Likely to Adversely Affect. Seabeach amaranth has not been documented in the Phase IIb project area. The Phase IIb Bridge on New Location Alternative would not have any impacts on the plant or its habitat because no construction would occur on the beach. The Phase IIb Bridge within Existing NC 12 Easement would affect 0.01 acre beach habitat with fill and pile and 0.05 acre with temporary impacts, and 0.25 acre of dune with fill and pile and 0.35 acre with temporary impacts. An additional 1.09 acres of dune would be shaded by the bridge.

The Phase IIa area and the Phase I area include open water and adjacent shorelines that include habitat suitable for piping plover nesting. The Phase IIb project area does not include preferred nesting habitat.

Monthly bird surveys have been conducted by NCDOT biologists from January 2013 to July 2015. As of the date of this revised Phase IIb EA, no nests of piping plover have been recorded in the Phase IIb area. While potential nesting and foraging habitat has increased in the vicinity of the Pea Island breach north of Phase IIb since the 2010 ROD, the chance of an incidental take of piping plover nests during construction would not increase because no nests or nesting behavior have been documented in the Phase IIb project area. Therefore, the biological conclusions for the piping plover addressed in the 2008 BA and the Phase IIa EA also are assumed to remain unchanged as a result of the Phase IIb detailed study alternatives.

The biological conclusion for the rufa red knot for the PBC/TMP Alternative, including Phase IIb and supporting information is as follows:

- **Rufa red knot** (*Calidris canutus rufa*) Federal Status – Threatened
State Status -- None

Biological Conclusion:

MAY AFFECT, NOT LIKELY TO ADVERSELY AFFECT

Beaches, pools, and intertidal areas, especially in the vicinity of inlets, are the primary habitats used by rufa red knot in the Bonner Bridge Replacement Project (B-2500) project area. Suitable habitat is present at and near Oregon Inlet, Pea Island breach, and along the ocean shoreline. Since rufa red knots do not breed in North Carolina, only seasonal foraging and roosting habitat is present within the Bonner Bridge Replacement Project (B-2500) project area. Although rufa red knots may be present in coastal North Carolina in every month of the year, the greatest numbers are usually recorded during the spring migration in May and June. The lowest recorded numbers usually occur from January to March (Dinsmore et al. 1998).

Given the transient presence of this species, the number of rufa red knots occurring within the Bonner Bridge Replacement Project (B-2500) project area is difficult to assess. From multiple bird surveys in 2013 (from February 19 to December 18), NCDOT biologists observed 33 rufa red knots within the Bonner Bridge Replacement Project (B-2500) project area (NCDOT 2013). Of the 33 rufa red knots observed during 2013, 30 were observed approximately one-quarter mile north of Pea Island breach on December 18 (K. Herring, NCDOT biologist, personal communication, December 20, 2013). From multiple bird surveys in 2014 (from February 18 to December 11) NCDOT biologists observed 72 rufa red knots within the Bonner Bridge Replacement Project (B-2500) project area (NCDOT 2014). Most of the rufa red knots observed in 2014 occurred on the beach between Oregon Inlet and Pea Island breach. From multiple bird survey in 2015 (from January 21 to 22 July) NCDOT biologists observed 39 rufa red knots within the Bonner Bridge Replacement Project (B-2500) project area, and most were observed between Oregon Inlet and Pea Island breach (K. Herring, NCDOT biologist, personal communication, November 10, 2015). None were observed in the Phase IIb project area.

Impacts to foraging rufa red knot would be the same as the impacts reported for foraging piping plover in the 2008 FEIS and subsequent Section 7 consultation documentation. Temporary impacts to foraging or roosting rufa red knots could occur during construction of Phase IIb from pile placement and other activities within the existing NC 12 easement with the Bridge within Existing NC 12 Easement Alternative and at the northern end of the Bridge on New Location Alternative (all three alignments). However, these temporary impacts are unlikely because the alternatives would be outside of preferred habitat.

As documented in the 2008 BA for the entire Phased Approach/Rodanthe Bridge Alternative (of which the Phase IIb Bridge within Existing NC 12 Easement Alternative is a part), as beach erosion occurs and the beach moves west there would be a period of time when a bridge in the existing NC 12 easement would be over the beach. The area of beach affected by piles with the entire Phased Approach/Rodanthe Bridge Alternative is estimated to be 0.3 acre, and the area under the bridge is estimated to be 9.5 acres. The total impact of the PBC/TMP Alternative resulting from long-term beach erosion would be less with the Phase IIb Bridge on New Location Alternative (all three alignments) because the majority of the Phase IIb Bridge on New Location Alternative would be over the sound and west of the 2060 high-erosion shoreline with no beach impact.

Conservation and reasonable and prudent measures for minimizing impact to the rufa red knot would be the same as those planned for the piping plover. They are:

- To the extent possible, keep all construction equipment and activity within the existing right-of-way. Avoid staging equipment or materials on the beach or adjacent to inlets.
- To the maximum extent practical, while ensuring the safety of the traveling public, limit or avoid the use of road signs or other potential predator perches adjacent to rufa red knot roosting or foraging areas. Where signs or other structures, are necessary, determine if alternative designs would be less conducive for perching on by avian predators (gulls, crows, hawks, etc.). For example, minimize or avoid the use of large cantilever signs in favor of smaller and shorter designs.

These measures are included in the Project Commitments section of this revised Phase IIb EA.

The northern long-eared bat (*Myotis septentrionalis*) is designated as “threatened.” USFWS has developed a programmatic biological opinion (PBO) in conjunction with FHWA, USACE, and NCDOT for the northern long-eared bat in eastern North Carolina. The PBO covers the entire NCDOT program in Divisions 1 to 8, including all NCDOT projects and activities. The programmatic determination for the northern long-eared bat for the NCDOT program is May Affect, Likely to Adversely Affect. The PBO provides incidental take coverage for the northern long-eared bat and will ensure compliance with Section 7 of the Endangered Species Act for five years for all NCDOT projects with a federal nexus in Divisions 1 to 8, which includes Dare County, where the Phase IIb project is located. This level of incidental take is authorized from the effective date of a final listing determination through April 30, 2020.

4.2.5.5 *Essential Fish Habitat*

The potential impacts (short-term, long-term, permanent, and potential species-specific) to EFH addressed in the 2008 FEIS (Section 4.7.6.2) beginning on page 4-104 and the *Essential Fish Habitat Assessment* (CZR, Incorporated, 2008) as it relates to Phase I (replacement of the Bonner Bridge) would be similar for the Phase IIb detailed study alternatives since both areas have the same EFH types. In addition, Phase I and the two Phase IIb detailed study alternatives would involve the same type of activities in those habitats. The Bridge on New Location Alternative (all three alignments) affects EFH in Pamlico Sound. The Bridge within Existing NC 12 Easement Alternative would affect EFH in Pea Island breach (when open). The Bridge within Existing NC 12 Easement Alternative also would affect EFH once shoreline erosion results in the bridge being in the ocean. Permanent EFH impacts would be the result of pile presence and bridge shading.

As indicated in Section 4.1.7, in general in the Phase IIb project area, waters less than 6 feet deep within Pamlico Sound are considered potential SAV habitat. Based on 2014 and 2015 surveys all three Bridge on New Location Alternative alignments contain SAV. The Bridge within Existing NC 12 Easement Alternative would not affect SAV.

EFH, SAV, and SAV habitat impacts in Pamlico Sound would vary by bridge length over the sound: 2.2 miles with the 2013 alignment, 1.97 miles with the 2014A alignment, and 2.06 miles with the 2014B alignment (preferred). Depending on whether the pile caps are just under the bridge spans (lower impact) or placed at water level, open water and EFH pile impacts would be:

- 2013 Alignment: 0.11 acre to 2.88 acres
- 2014A Alignment: 0.10 acre to 2.58 acres
- 2014B Alignment (preferred): 0.10 acre to 2.70 acres

Depending on whether the pile caps are just under the bridge spans (higher impact because less direct pile impact) or placed at water level, open water and EFH bridge shading impacts would be:

- 2013 Alignment: 8.46 acres to 11.23 acres
- 2014A Alignment: 7.48 acres to 9.92 acres
- 2014B Alignment (preferred): 7.92 acre to 10.50 acres

In the 2010 EA, it was assumed the pile cap would be just under the bridge spans when calculating pile impacts. The total area over the sound of the bridge's pile caps, which although not set on the bottom, is a reasonable representation of the pile cap impact to

EFH/SAV/SAV habitat if during final design, the decision was made to place the pile cap at water level. See the introduction to Section 4.2.5.2 for the reasons two different pile and shading impacts are presented for the Bridge on New Location Alternative.

The bridge deck and pile presence impacts listed above would result in some loss of EFH (under the piles) and in changes in light levels of the area underneath the bridge and for some distance surrounding the bridge. Most of the 2014B alignment (preferred) is in an area with fewer dense existing SAV beds. Using the results of SAV surveys conducted in 2014, 6.01 acres of SAV cover would be shaded by the 2014B alignment of the 10.5 acres noted above. Of the 6.01 acres, 3.24 acres would consist of SAV beds with coverage of 50 percent or greater, and 2.77 acres would consist of SAV beds with coverage less than 50 percent. Using 2015 surveys, the total SAV cover shaded is 5.81 acres.

NCDOT and NMFS met on December 1, 2015 to discuss the mitigation of the 2014B alignment's (preferred) SAV impacts. NCDOT's proposal for SAV mitigation for Phase IIb is similar as proposed for Phase I, with a similar concept and post-construction monitoring component. That plan includes a living reef that would serve as a wave break to reduce wave energy and facilitate seagrass growth in the reef shadow; additional SAV plants would be transplanted behind the wave break in order to encourage further propagation within the mitigation site. The location for the Phase IIb mitigation site is to be determined. NMFS has agreed that the 6.01 acres of SAV impact delineated in 2014 was a defensible impact calculation for mitigation planning purposes that could be refined later if the data warranted a change. NCDOT also has agreed to look at what aerial photography is available in attempt to determine the persistence of SAV over time in the Phase IIb project area. The results could potentially be used to refine the SAV impact acres to be mitigated. Also, SAV impacts would be regularly monitored, and updated if necessary, before and during construction of the Phase IIb bridge.

With the Bridge on New Location Alternative (all three alignments), temporary construction-related impacts on marine and estuarine waters could result from noise and turbidity, sediment removal, and burial of organisms. Although some minor adverse impacts to EFH would occur during the construction phases, the impacts would be temporary and are not expected to result in significant short-term or long-term adverse effects on managed species. A primary potential for construction impact within EFH for the Bridge on New Location Alternative would be the pile jetting process, including increased turbidity and burial of organisms by jetting spoil surrounding the pile being jetted into place. Jetting uses high pressure water from pipes adjoining a pile to move the soil away from the tip of the pile, allowing the pile to move into the hole created. When the high pressure water is turned off, the surrounding soil settles around the pile. The soil that is displaced by the pile is referred to as spoil. The water that is used in the jetting process would come from the sound; as the USFWS and other

agencies have previously indicated, the placement of pipes and pumps associated with the jetting process cannot be placed on the ocean beach. Depending upon the size of the pile and the depth at which it needs to be placed, one bridge pile can be jetted into place in approximately 60 minutes. Jetting operations likely would occur over approximately half of the construction period; and they would occur year round. Phase I of the PBC/TMP Alternative also will involve jetting piles within EFH. A mitigation measure agreed to with environmental resource and regulatory agencies in Phase I permit documents that could be considered for the Bridge on New Location Alternative is to require the contractor to minimize turbidity and water quality degradation by containing the jetting spoil. Primary and secondary containment systems could capture as much of the jetting water as possible and re-use it within the jetting operation in SAV and wetland areas.

All spoil will be disposed of in an approved waste area. NCDOT will work with NCDEQ-DCM, USFWS-Refuge, and other agencies as needed on minimizing jetting impacts to EFH, as well as jetting spoil disposal. The construction contractor will develop a plan for containing and disposing of jetting spoils. Disposal of jetting spoil material will not be allowed within SAV or jurisdictional waters/wetlands.

With the Bridge within Existing NC 12 Easement Alternative, jetting water would be taken from the sound, likely at three locations, and would be transported through pipes for use in jetting piles on land. This also would be done at one location at the northern end of the Bridge on New Location Alternative (all three alignments). Jetting spoils will be disposed of within the NC 12 easement unless the Refuge accepts them for Refuge use. With the initial construction of the Bridge within Existing NC 12 Easement Alternative, there would be no other EFH impacts other than those associated with taking jetting water from the sound. Again, NCDOT will work with NCDEQ-DCM, USFWS-Refuge, and other agencies as needed on minimizing jetting impacts to EFH, as well as jetting spoil disposal.

Impacts to EFH from Phase IIb's Bridge within Existing NC 12 Easement Alternative (plus any future phases involving a bridge in the existing NC 12 easement) would eventually occur in the ocean as a result of shoreline erosion placing these alternatives in the ocean. The impacts to EFH from bridge presence in the ocean are described in Section 4.7.6.2 of the 2008 FEIS on page 4-107. These impacts would include changes related to water quality, water flow, sediment grain size and topography, bridge shading, and potential long-term impacts resulting from bridge maintenance activities for portions of the bridge that over time would be located in the surf zone. A Bridge within Existing NC 12 Easement Alternative would result in approximately 11.00 acres of shading area over the Atlantic Ocean by 2060 as a result of shoreline erosion. There is a potential to reduce habitat quality for larval and adult fish, as well as reduce invertebrate species abundance and diversity. In addition, the introduction of bridge piles would provide a type of hard substrate previously unavailable in the surf zone,

thereby increasing habitat complexity. Currently, the only wetland impact associated with the Bridge within Existing NC 12 Easement Alternative would be 0.05 acre of wetland maritime shrub/grassland, and the only open water impacts would be 0.02 pile and fill and 0.03 temporary impact to open water-pool.

4.2.6 Noise Impacts

In accordance with Title 23 *Code of Federal Regulations* Part 772, "Procedures for Abatement of Highway Traffic Noise and Construction Noise" (23 CFR 772) and the NCDOT Traffic Noise Abatement Policy (July 13, 2013), each Type I highway project must be analyzed for predicted traffic noise impacts. In general, Type I projects are proposed federal or federal-aid highway projects that involve any of the following: construction of a highway or interchange on new location; improvements of an existing highway that either substantially changes the horizontal or vertical alignment or increases the vehicle capacity; or projects that involve either new construction or substantial alteration of transportation facilities such as weigh stations, rest stops, ride-share lots or toll plazas. Traffic noise was addressed previously for the Bonner Bridge Replacement Project (B-2500) in Section 4.10 of the 2008 FEIS beginning on page 4-150 and in Table 1 of the 2010 ROD on page 17.

Traffic noise impacts were determined through implementing the current Traffic Noise Model® (TNM®) approved by FHWA (Version 2.5 released in 2004) and by following procedures detailed in 23 CFR 772 and the NCDOT *Traffic Noise Analysis and Abatement Manual*. When traffic noise impacts are predicted, examination and evaluation of alternative noise abatement measures must be considered for reducing or eliminating these impacts. Temporary and localized noise impacts also likely will occur as a result of project construction activities.

4.2.6.1 Traffic Noise Impacts and Noise Contours

Predicted traffic noise impacts for the Phase IIb detailed study alternatives, as well as the No-Build Alternative and existing conditions, are shown in Table 5 (NCDOT, 2013b). The Table 5 findings take into consideration the potential for receptors (persons standing outside) to experience traffic noise impacts by either approaching or exceeding the FHWA noise abatement criteria (NAC) or by a substantial increase in exterior noise levels as defined in the NCDOT Traffic Noise Abatement Policy, for any activity category listed in Table 6. All the impacts indicated in Table 5 result from traffic noise impacts that approach (1 dB(A) below the NAC criteria) or exceed the NAC. For the existing condition, one residential noise receptor was predicted to approach or exceed the FHWA NAC for Activity Category B.

As shown in Table 1 of the 2010 ROD (page 17), the Road North/Bridge South Alternative would have resulted in three residential noise receptors that approach or exceed the FHWA NAC for Activity Category B; substantial noise increases would have occurred at an additional three residential receptors (including one of the three that

Table 5. Predicted Traffic Noise Impacts by Alternative

Alternative	Traffic Noise Impacts ¹			
	Residential (NAC B, 66 dBA or greater)	Churches/ Schools, etc. (NAC C, 66 dBA or greater & D,51 dBA or greater)	Businesses (NAC E, 71 dBA or greater)	Total
Existing Conditions	1	0	0	1
No-Build Alternative (2025)	2	0	0	2
Bridge within Existing NC 12 Easement Alternatives (Build 2025)	6	0	0	6
Bridge on New Location Alternative(Build 2025)				
• 2013 Alignment	2	0	0	2
• 2014A Alignment	3	0	0	3
• 2014B Alignment	3	0	0	3

¹Per TNM®2.5 and in accordance with 23 CFR 772

**Table 6. Noise Abatement Criteria Noise Abatement Criteria
(Hourly Equivalent A-Weighted Sound Level Decibels – dB(A))**

Activity Category	Activity Criteria ¹ L _{eq} (h) ²	Evaluation Location	Activity Description
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B ³	67	Exterior	Residential
C ³	67	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, daycare centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section4(f) sites, schools, television studios, trails, and trail crossings.
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.

**Table 6 (concluded). Noise Abatement Criteria Noise Abatement Criteria
(Hourly Equivalent A-Weighted Sound Level Decibels – dB(A))**

Activity Category	Activity Criteria¹ L_{eq}(h)²	Evaluation Location	Activity Description
E	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A-D or F.
F	--	--	Agriculture, airports, bus yards, emergency services, industrial, logging maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	--	--	Undeveloped lands that are not permitted.

Source: NCDOT *Traffic Noise Abatement Policy*, effective July 20, 2011.

¹The L_{eq}(h) activity criteria values are for impact determination only, and are not design standards for noise abatement measures.

²The equivalent steady-state sound level which in a stated period of time contains the same acoustic energy as the time-varying sound level during the same time period, with L_{eq}(h) being the hourly value of L_{eq}.

³Includes undeveloped lands permitted for this activity category.

exceeds the FHWA NAC for Activity Category B) and 1 business noise receptor (Activity Category E). As indicated in Table 5, the equivalent Bridge on New Location Alternative would result in two to three residential noise receptors that approach or exceed the FHWA NAC for Activity Category B; a substantial increase in noise levels between the existing condition and the design year is not predicted for any noise receptor. Therefore, the Bridge on New Location alternative has a lower or equal traffic noise impact than the Road North/Bridge South Alternative included in the 2010 ROD.

As shown in Table 1 of the 2010 ROD (page 17), the Phased Approach/Rodanthe Bridge Alternative would have resulted in three residential noise receptors that approach or exceed the FHWA NAC for Activity Category B. As indicated in Table 5, the equivalent Bridge within Existing NC 12 Easement Alternative would result in six residential noise receptors that approach or exceed the FHWA NAC for Activity Category B. This higher traffic noise impact is likely the result of changes in the specific homes displaced, including homes formerly displaced that now have noise impacts. No substantial increases in noise levels would occur at any receptors with either the Bridge within Existing NC 12 Easement Alternative or its equivalent in the 2010 ROD.

The maximum extent of the 71 and 66 dB(A)⁴ noise level contours⁵ measured from the center of the proposed roadway is less than 20 and 56 feet, respectively, for the Bridge within Existing NC 12 Easement Alternative. The maximum extent of the 71 and 66 dB(A) noise level contours measured from the center of the proposed roadway is 20 feet and 75 feet, respectively for the Bridge on New Location Alternative (all three alignments).

4.2.6.2 *No-Build Alternative Traffic Noise*

The traffic noise analysis also considered traffic noise impacts for the No-Build Alternative. If the proposed Phase IIb project is not built, two receptors are predicted to experience traffic noise impacts, and the future traffic noise levels will increase by approximately 3 dB(A). Based upon research, humans barely detect noise level changes of 2 to 3 dB(A). A 5 dB(A) change is more readily noticeable. Therefore, most people working and living near NC 12 would not notice this predicted increase.

4.2.6.3 *Traffic Noise Abatement Measures*

Measures for reducing or eliminating the traffic noise impacts were considered for all impacted receptors of each alternative. The primary noise abatement measures evaluated for highway projects include highway alignment changes, traffic system management measures, establishment of buffer zones, noise barriers, and noise insulation (Activity Category D only). For each of these measures, benefits versus allowable abatement measure quantity (reasonableness), engineering feasibility, effectiveness and practicability and other factors are included in the noise abatement considerations.

A highway alignment change is the only viable noise abatement measure of those listed in the previous paragraph. Highway alignment changes for traffic noise abatement involve modifying the alignment of a proposed road to minimize traffic noise at noise sensitive receptors. The selection of alternative alignments for noise abatement purposes must consider the balance between noise impacts and other engineering and environmental parameters. The Bridge on New Location Alternative (all three alignments) reflects a viable option for locating the highway alignment to minimize noise impact, reducing impacts from six receptors (with the Bridge within Existing NC 12 Easement Alternative) to two to three receptors.

⁴ dB stands for decibel. The A-weighted sound level is a measure of sound intensity with frequency characteristics that correspond to human subjective response to noise. For more detail, see the 2008 FEIS, Section 3.10.1.4 on page 3-112.

⁵ The 71 and 66 dB(A) noise contours are lines that illustrate the distance from each detailed study alternative where the noise levels of 71 and 66 dB(A) are expected to occur, and corresponds to the NAC for Activity Category E and B/C receptors, respectively.

Traffic system management measures such as banning truck traffic, limiting times of operation, or lowering the speed limit are not considered viable options since NC 12 is the only through route on Hatteras Island. Costs to acquire buffer zones (essentially displacing the impacted receptors) would exceed the NCDOT base quantity value of \$37,500 per benefited receptor, causing this abatement measure to be unreasonable.

Noise barriers include two basic types: earthen berms and noise walls. These structures act to diffract, absorb, and reflect highway traffic noise. This project would remain an uncontrolled right-of-way access road, meaning that most noise-sensitive land uses would have direct access connections to the proposed project, and intersections would adjoin the project at grade. The traffic noise analysis confirmed that because regular breaks would be required for driveways and street intersections, any potential noise barriers would not be reasonable or feasible as defined by the noise abatement measure feasibility criteria of the NCDOT Traffic Noise Abatement Policy.

4.2.6.4 *Traffic Noise Summary*

The Bridge within Existing NC 12 Easement Alternative would result in six residential noise receptor impacts compared to two for the Phased Approach/Rodanthe Bridge Alternative. This is likely the result of changes in the specific homes displaced, including homes formerly displaced that now have noise impacts. The Bridge on New Location Alternative would result in the same or one less residential noise receptor impact (two to three instead of three) compared to the Road North/Bridge South Alternative, and no substantial noise level increases (compared to three substantial noise level increases for the Road North/Bridge South Alternative). The 2014B Bridge on New Location Alternative (preferred) would impact three receptors.

Based on this preliminary study, traffic noise abatement is not recommended and no noise abatement measures are proposed. This evaluation completes the highway traffic noise requirements of 23 CFR 772. No additional noise analysis will be performed for this project unless warranted by a substantial change in the project scope, vehicle capacity, or alignment.

In accordance with NCDOT Traffic Noise Abatement Policy, the federal and North Carolina governments are not responsible for providing noise abatement measures for new development for which building permits are issued after the Date of Public Knowledge. The Date of Public Knowledge of the proposed highway project will be the approval date of the Phase IIb Record of Decision (ROD). For development occurring after this date, local governing bodies are responsible to insure that noise compatible designs are used along the proposed project.

4.2.6.5 *Construction Noise*

Construction noise was addressed in Section 4.13.3 of the 2008 FEIS beginning on page 4-173. Compared to the Bridge on New Location Alternative (all three alignments), the

Bridge within Existing NC 12 Easement Alternative would have greater construction noise impacts on daily activities in Rodanthe because construction would occur within Rodanthe, adjacent to the numerous homes and businesses lining NC 12. Except where it reaches the shore and enters Rodanthe, construction activities for the Bridge on New Location Alternative would be approximately 460 to 2,350 feet from the soundside shoreline and the homes located along the shoreline (1,050 to 1,400 feet with the 2014B preferred alignment). In addition, the Bridge within Existing NC 12 Easement Alternative would have a greater construction noise impact on the Refuge because it is within the Refuge and not primarily offshore in the sound like the Bridge on New Location Alternative.

The predominant construction activities associated with this project are expected to be pile driving, impact hammers (jack hammer, hoe-ram), earth removal, hauling, grading, and paving. Temporary and localized construction noise impacts likely will occur as a result of these activities.

During daytime hours, the predicted effects of construction activities would be temporary speech interference for passers-by and those individuals living or working near the project. During evening and nighttime hours, steady-state construction noise emissions, such as from paving operations would be audible, and could cause impacts to activities such as sleep. Sporadic evening and nighttime construction equipment noise emissions such as from backup alarms, lift gate closures (“slamming” of dump truck gates), etc., would be perceived as distinctly louder than the steady-state acoustic environment, and would likely cause severe impacts to the general peace and usage of noise sensitive areas – particularly residences.

Extremely loud construction noise activities such as the use of pile-drivers and impact hammers would provide sporadic and temporary construction noise impacts in the near vicinity of those activities. Such an impact could be mitigated by scheduling construction activities that would produce extremely loud noises during times of the day when such noises would create as minimal disturbance as possible.

Generally, low-cost and easily implemented construction noise control measures could be incorporated into the project plans and specifications to the extent possible. These measures include, but are not limited to, work-hour limits, equipment exhaust muffler requirements, haul road locations, elimination of “tail gate banging”, ambient-sensitive backup alarms, construction noise complaint mechanisms, and consistent and transparent community communication.

4.2.7 Air Quality Impacts

Air quality impacts of the Bonner Bridge Replacement Project (B-2500) were assessed in Section 4.9 of the 2008 FEIS beginning on page 4-141. That assessment concluded that the proposed project would not cause or exacerbate a violation of National Ambient Air Quality Standards (NAAQS), as established by the Clean Air Act of 1970 as amended. It

further concluded that the Bonner Bridge Replacement Project (B-2500) conforms to the State Implementation Plan (SIP) and the goals set forth in the Clean Air Act Amendments (CAAA) and the Final Conformity Rule. It further concluded notable changes in the emissions of Mobile Source Air Toxics (MSATs) are not expected. An updated project-level qualitative air quality analysis was prepared for Phase IIb (NCDOT, September 20, 2013). This assessment of air quality impacts follows air quality assessment procedures as they relate to determining compliance with NAAQS and considering MSAT. No notable new air quality impacts were found. Specific findings of the new qualitative air quality assessment for Phase IIb are presented in the following sections.

4.2.7.1 Attainment Status

The project is in Dare County, which complies with NAAQS. The Phase IIb project will not add substantial new capacity or create a facility that is likely to meaningfully increase emissions. Therefore, it is not anticipated to create any adverse effects on the air quality of this attainment area.

4.2.7.2 Mobile Source Air Toxics (MSAT)

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the USEPA regulate 188 air toxics. The USEPA rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) requires controls that will dramatically decrease MSAT emissions of motor vehicles through cleaner fuels and cleaner engines. Based on a FHWA analysis using USEPA's MOVES2010b motor vehicle emissions model (October 30, 2012), even if vehicle-miles traveled (VMT) increase by 102 percent (as assumed nationally from 2010 to 2050), a combined reduction of 83 percent in the total annual emissions for the priority MSAT is projected for the same time period.

The FHWA developed a tiered approach with three categories for analyzing MSAT in NEPA documents, depending on specific project circumstances:

1. No analysis for projects with no potential for meaningful MSAT effects;
2. Qualitative analysis for projects with low potential MSAT effects; or
3. Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

The Phase IIb project falls under Category 2 because it is intended to improve the operations of a highway, transit, or freight facility without adding substantial new capacity or without creating a facility that is likely to meaningfully increase emissions, and because the design year traffic is not projected to meet or exceed the 140,000 to 150,000 AADT criterion.

Qualitative MSAT Analysis. For Category 2 projects, a qualitative assessment of emissions projections is conducted. A qualitative MSAT analysis provides a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various alternatives. For each alternative in this revised Phase IIb EA, the amount of MSAT emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same for the alternative. Average daily VMT in the Phase IIb project area is shown in Table 7.

Table 7. Average Daily VMTs in the Phase IIb Project Area

Alternative	Average Annual Daily Traffic	Length(miles)	Average Daily VMT
2012 Existing	7,300	2.50	18,250
2032 No Build	10,900	2.50	27,250
2032 Bridge within Existing NC 12 Easement Alternative			
• NC 12 on Bridge	10,900	2.50	27,250
• Frontage Road for Local Access	2,300 ¹	0.74	1,702
Total VMT			28,952
Increase in VMT Over No-Build Alternative			6.2%
2032 Bridge on New Location Alternative (all three alignments)			
• NC 12 on Bridge	10,900	2.80 to 3.00	32,700
• Existing NC 12 Used for Local Access	1,700 ¹	0.64	1,088
Total VMT			33,788
Increase in VMT Over No-Build Alternative			24.0%

¹Local traffic volumes would vary over the length of the roads for local access with the greatest volumes at their intersection with NC 12 and the least volumes at the Refuge/Rodanthe border. To reflect that variation it was assumed that one-half the volume at the NC 12 intersection was representative of the average volume over the length of the roads for local access.

Because of changing local traffic patterns, the estimated daily VMT would be 6.2 percent higher than the No-Build Alternative with the Bridge within Existing NC 12 Easement Alternative. The daily VMT would increase by 24.0 percent with the Bridge on New Location Alternative, primarily because of the alternative’s longer length (3.0 miles versus 2.5 miles). It is important to note, however, that with the Bridge on New Location Alternative, NC 12 traffic would for the most part be placed in the sound and away from residences sensitive to MSAT’s. Thus, while MSAT emissions would increase because of the longer NC 12 length and changing local traffic patterns with the Bridge on New Location Alternative, the potential local impact of MSAT’s would be substantially reduced over both the No-Build and the Bridge within Existing NC 12 Easement Alternative because of NC 12’s relocation away from sensitive receptors.

Finally, in the context of the full 15.7-mile length of existing NC 12 in the Bonner Bridge Replacement Project (B-2500) project area, the increase in the length of NC 12 of 0.5 mile that is associated with the Bridge on New Location Alternative represents only a 3 percent increase in the length of existing NC 12, as well as the associated VMT and estimated MSAT emissions.

The three new alternative alignments of NC 12 in Rodanthe with the Bridge on New Location Alternative also would have the effect of moving NC 12 traffic closer to homes and businesses between the sound and its intersection with NC 12, the southern terminus. The Bridge within Existing NC 12 Easement Alternative would bring traffic closer to the upper story living areas of homes along NC 12 and local traffic on at-grade frontage roads closer to the same homes. Therefore, under each alternative there may be localized areas where ambient concentrations of MSAT could be higher.

Regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of USEPA's national control programs that are projected to reduce annual MSAT emissions by over 80 percent from 2010 to 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the USEPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the Phase IIb project area are likely to be lower in the future in virtually all locations.

Incomplete or Unavailable Information for Project-Specific MSAT Health Impacts Analysis. In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts that would result from changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action. Further, because of the limitations in the methodologies for forecasting health impacts, any predicted difference in health impacts between the detailed study alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits.

4.2.7.3 Construction Air Quality Impacts

The 2008 FEIS addressed construction-related impacts on air quality in Section 4.13.2 (page 4-173). Air quality impacts resulting from roadway construction activities are typically not a concern when contractors utilize appropriate control measures. During construction of the proposed project, all materials resulting from clearing and grubbing (removing plant roots), demolition, or other operations would be removed, burned, or otherwise disposed of by the contractor. Any burning done would be done in

accordance with applicable local laws and ordinances and regulations of the North Carolina SIP for air quality in compliance with 15 NCAC 2D.0520. Care would be taken to ensure burning would be done at the greatest distance practicable from dwellings, and would not be done when atmospheric conditions are such as to create a hazard to the public. Operational agreements that would reduce or redirect work or shift times to avoid community exposures can reduce this impact. Burning would be performed under constant surveillance. Also during construction, measures would be taken to reduce the dust generated by construction when the control of dust is necessary for the protection and comfort of motorists or area residents.

4.3 Effect of the Phase IIb Detailed Study Alternatives on the PBC/TMP Alternative

Changes since the findings of the 2010 ROD based on the above analysis of the Phase IIb detailed study alternatives are primarily associated with minor changes in the characteristics of the project area and refinements to the 2010 designs of the detailed study alternatives. Changes in the characteristics of the Phase IIb project area resulted in the following effects:

- Updates to the forecast 2060 high-erosion shoreline, with reduced potential erosion (see Appendix D).
- Altering the location of Hatteras Island habitat types.

Hurricane Irene in August 2011 and Hurricane Sandy in October 2012 introduced few changed environmental elements to the Phase IIb project area. Beach erosion was associated with both storms. Beach erosion is taken into consideration in the 2008 FEIS and subsequent environmental documentation. Hurricane Irene created a breach in the Phase IIb area, which was closed by NCDOT. The 2008 FEIS and subsequent environmental documentation take into consideration the potential for a breach in the Rodanthe area.

The design characteristics of the Phase IIb detailed study alternatives would be similar to what was defined in the 2008 FEIS (as updated in the 2010 EA) as the Bridge South component of the Road North/Bridge South Alternative (a bridge in the sound), and a portion of Phase II of the Phased Approach/Rodanthe Bridge Alternative (a bridge within the existing NC 12 easement). The differences between the designs of the bridge alternatives are described in Sections 2.5.2 and 2.5.3 of this revised Phase IIb EA.

4.3.1 Updated Impacts in the Phase IIb Area

The above changes in the setting and design introduced the following notable changes in potential impacts:

- Reduced residential and business relocations with the exception of the 2014A alignment of the Bridge on New Location Alternative where residential relocations would increase from two to five. The 2014A alignment is not the Preferred Alternative.
- Lessened, but still sizable, visual impacts on the Refuge. Phase IIb bridge height was re-evaluated during design of the Phase IIb detailed study alternatives (see Section 4.2.1) and is now lower than in the 2008 FEIS. Visual impacts contribute to the conclusion that the Phase IIb detailed study alternatives would have an Adverse Effect on the Refuge as a historic resource.
- Changed visual impact with the Bridge on New Location Alternative. The Bridge on New Location Alternative (Road North/Bridge South in the 2010 ROD) was shown in the 2010 ROD as approximately 1,200 to 1,600 feet from the Pamlico Sound shoreline. The 2014B Bridge on New Location Alternative (preferred) at 1,050 feet to 1,400 feet is 150 to 200 feet closer to the shoreline. It would appear somewhat larger and be a greater visual presence in shoreline views.
- Need for easements, including with the Bridge within Existing NC 12 Easement Alternative 2.5 acres of utility easement (0.48 acres of which also will be used for final grading) in Rodanthe and 2.06 acres of temporary construction easement in the Refuge and with the Bridge on New Location Alternative (all three alignments) 0.63 acre of temporary construction easement in the Refuge.
- Identical or lower noise impacts than presented in the 2010 ROD for the Bridge on New Location Alternative (Road North/Bridge South in the 2010 ROD) and higher impacts with the Bridge within Existing NC 12 Easement Alternative (Phased Approach/Rodanthe Bridge in the 2010 ROD). The higher impact is likely the result of changes in the specific homes displaced, including homes formerly displaced that now have noise impacts.

4.3.2 Updated Costs

Phase IIb detailed study alternatives are expected to cost \$162.8 to \$187.4 million for the Bridge within Existing NC 12 Easement Alternative, \$195.1 to \$214.8 million for the 2013 Bridge on New Location Alternative, \$175.0 to \$193.0 million for the 2014A Bridge on New Location Alternative, and \$179.3 to \$198.3 million with the 2014B Bridge on New Location Alternative (preferred).

Details on the costs are shown in Table 1. The detailed study alternatives are similar to alternatives assessed in the 2008 FEIS (as updated in the 2010 EA). Neither the Phase IIb setting nor design for the detailed study alternatives changed substantially since 2010 and thus, did not notably affect the overall cost of the PBC/TMP Alternative. Thus, no notable changes to the overall cost of the PBC/TMP are expected.

4.3.3 Impact of Implementation of All Phases of the PBC/TMP Alternative

This section addresses how the implementation of one of the Phase IIb detailed study alternatives would affect the potential total impact of all phases of the PBC/TMP Alternative. The construction of the 2014B Bridge on New Location Alternative (preferred) would have no potential effect on the environmental impacts of the implementation of remaining phases of the PBC/TMP Alternative (selected for implementation in the 2010 ROD) because both its southern and northern endpoints connect to a portion of existing NC 12 for which no changes are planned or expected to be needed prior to 2060. The northern terminus connects to a portion of NC 12 in the Refuge that is not threatened by shoreline erosion prior to 2060 and where the island is not susceptible to breaching. The southern terminus is at the southern end of the Bonner Bridge Replacement Project (B-2500) project area. Thus, because there is no direct connection between the 2014B alignment and the locations where future phases of the PBC/TMP alternative would occur, the selection of the 2014B Bridge on New Location Alternative (preferred) would place no limits on the choices available for other future phases of the PBC/TMP alternative, including the use of nourishment, road on new location, bridge on new location, bridge within the existing easement, or extending Phase IIb further north within Pamlico Sound.

In general, the PBC/TMP Alternative as described in the 2010 ROD calls for the study and selection of future actions on Hatteras Island beyond the limits of Phase I, and now beyond Phase II, through a comprehensive NC 12 Transportation Management Plan. This approach takes into account the inherent uncertainty in predicting future conditions within the dynamic coastal environment. The PBC/TMP Alternative and the components of its comprehensive NC 12 Transportation Management Plan are described in Section 1.3. The implementation of plan components began in early 2011 and will continue until the PBC/TMP Alternative is completed.

Based on the above considerations, as well as the findings of Section 4.3.1, the expected nature and extent of environmental impacts of the potential future phases of the PBC/TMP Alternative are not expected to change with the implementation of the 2014B Bridge on New Location Alternative (preferred).

4.4 Phase IIb Permits and Approvals

Construction of one of the Phase IIb detailed study alternatives would require the permits and approvals listed below (with some differences between the Phase IIb detailed study alternatives). Federal funding for this project is expressly conditioned upon compliance with all permitting terms and conditions.

US Coast Guard Permit

Under the authority of Section 9 of the Rivers and Harbors Act of 1899 and the General Bridge Act of 1946 (as well as other legislation), the US Coast Guard (USCG) is responsible for approving the locations and plans for bridges and causeways over navigable waterways. NCDOT anticipates a USCG Advance Approval or a USCG Permit under Title 33, Section 115.50 of the *Code of Federal Regulations* will be required for the bridge over Pamlico Sound with the Bridge on New Location Alternative. This permit would not be needed for the Bridge within Existing NC 12 Easement Alternative.

US Army Corps of Engineers Permits

Under Section 404 of the Clean Water Act, USACE is responsible for issuing permits for discharges of dredged or fill material in waters of the United States, including fill placed in connection with bridge and road construction and the disposal of construction debris. The anticipated impacts to wetlands as a result of construction of the detailed study alternatives are discussed in Section 4.1.5.

US Fish and Wildlife Service Permits and Approvals

A special use permit would be required for the temporary construction easements necessary to construct any detailed study alternative and the new permanent easement associated with the Bridge on New Location Alternative (all three alignments). The exact terms and conditions, as well as appropriate compensatory mitigation, will be determined during the permitting process.

National Park Service Permits and Approvals

A special use permit could be required for the temporary construction easement and the new permanent easement necessary to construct the Bridge within Existing NC 12 Easement Alternative because this alternative is near the ocean just north of Rodanthe and could be outside USFWS jurisdiction but within NPS jurisdiction. A special use permit could be required with the Bridge on New Location Alternative (all three alignments) for the proposed Pamlico Sound Bridge between the shoreline and the end of NPS's ownership 150 feet from the shoreline. The exact terms and conditions, as well as appropriate compensatory mitigation, will be determined during the permitting process.

Coastal Area Management Act Permit

A CAMA permit is required from NCDEQ-DCM since the detailed study alternatives would involve construction in AEC. NCDEQ-DCM, in their comments on the 2013 Phase IIb EA, said "It appears from the subject EA that based on current coastal conditions the Bridge on New Location alternative would meet the erosion setbacks for oceanfront construction, but that the Bridge within Existing NC 12 Easement alternative, including the associated frontage roads, would not meet the erosion setbacks for oceanfront construction. At the time of construction, the final project will need to adhere to the

applicable oceanfront setbacks.” This is not an issue with the Bridge on New Location Alternative (all three alignments) and one reason the 2014B Bridge on New Location Alternative is listed in this revised Phase IIb EA as the Preferred Alternative.

NCDEQ-Division of Water Resources Certification

A 401 Water Quality Certification (as mandated under Section 401 of the Clean Water Act) would be required from NCDEQ-DWR. The 401 certification process is coordinated with the 404 and CAMA processes and would be required with any detailed study alternative.

NCDEQ-Division of Water Resources Stormwater Permit

Effective August 1, 2013, NCDOT is no longer required to submit State Stormwater permit applications for projects discharging stormwater runoff in High Quality Waters (HQW) and Outstanding Resource Waters (ORW) watersheds, because NCDOT is regulated under its National Pollutant Discharge Elimination System (NPDES) permit.

Other Permitting/Approval Actions and Consultations

FHWA and NCDOT will continue to coordinate with the permitting agencies throughout the Phase IIb final design and permitting process and during construction. FHWA also will coordinate with USFWS and NMFS on any Section 7 of the ESA of 1973 concerns that arise during final design and construction; consultation under Section 7 will be re-initiated with either of these agencies if it becomes necessary. FHWA and NCDOT also will carry out the stipulations of the Section 106 National Historic Preservation Act Programmatic Agreement (Appendix D of the 2010 ROD and Appendix E of the Phase IIa ROD [first amendment]) and will coordinate with the other Signatory and Concurring Parties, as necessary, during the final design, permitting, and construction processes.

5.0 Section 4(f) Evaluation for Phase IIb

The purpose of this chapter is to assess whether the detailed study alternatives being considered for Phase IIb of the Bonner Bridge Replacement Project (B-2500) in the Rodanthe area affect the findings of the October 2009 Revised Final Section 4(f) Evaluation (Revised 4(f) Evaluation) related to the entire PBC/TMP Alternative. This chapter reflects updates in the detailed study alternatives since the 2013 Phase IIB EA. This chapter evaluates whether the Phase IIb detailed study alternatives, including the Preferred Alternative, would use Section 4(f) property, and further provides the information and analysis necessary for FHWA to approve any such use. The Revised 4(f) Evaluation was included in the 2010 EA as Appendix B, and its findings are summarized below in Section 5.1. The Phase IIb detailed study alternatives are described in Section 5.2.

Section 4(f) of the USDOT Act of 1966, as amended (49 U.S.C. § 303), states that USDOT may not approve the use of land from a significant publicly owned park, recreation area, or wildlife and waterfowl refuge, or any significant historic site, unless a determination is made that the project will have a *de minimis* impact, or unless a determination is made that:

1. There is no feasible and prudent avoidance alternative, as defined in 23 CFR 774.17, to the use of land from the property; and
2. The action includes all possible planning, as defined in 23 CFR 774.17, to minimize harm to the property resulting from such use.

The following sections are included in this chapter:

- October 2009 Revised Final Section 4(f) Evaluation Findings
- Proposed Detailed Study Alternatives for Phase IIb
- Section 4(f) Properties in the Phase IIb Project Area
- Impact to Section 4(f) Properties
- Analysis of Avoidance Alternatives
- Effect on the Least Harm Analysis
- Effect on All Possible Planning to Minimize Harm

5.1 October 2009 Revised Final Section 4(f) Evaluation Findings as Updated in the Phase IIa EA

As discussed in Section 4.0 of the 2010 ROD, the Revised 4(f) Evaluation determined that all six of the Parallel Bridge Corridor alternatives, including the PBC/TMP Alternative, would require a use of the Refuge. Section 4(f) applies to the Refuge both as a wildlife refuge and as a historic property. The Revised 4(f) Evaluation determined that Phase I would use approximately 3.2 acres of Refuge land. In addition, it was determined that for future phases, all of the Parallel Bridge Corridor alternatives considered may have a use of Refuge lands (see Table 1 of the 2010 ROD).

The Revised 4(f) Evaluation also determined that all six of the Parallel Bridge Corridor alternatives, including the PBC/TMP Alternative, would use approximately 6.3 acres from the Seashore, but that Section 4(f) is not applicable to this impact because the road [now called NC 12] was concurrently and jointly planned and developed with the establishment of the Seashore (see page B-12 of the Revised Section 4(f) Evaluation in Appendix B of the 2010 EA).

In addition to reaching the conclusions noted above, the Revised 4(f) Evaluation identified the location and characteristics of the Section 4(f) properties in the project area, described the applicability of Section 4(f) to these properties, discussed avoidance alternatives, presented a least overall harm analysis, and addressed the measures taken to minimize harm.

Based upon the Revised 4(f) Evaluation, FHWA determined in the 2010 ROD that there was no feasible and prudent alternative to the use of land from the Refuge for the construction of Phase I of the project, and that the PBC/TMP Alternative would cause the least overall harm and includes all possible planning to minimize harm to the Refuge. Based upon the Revised 4(f) Evaluation and Chapter 5 of the Phase IIa EA, FHWA re-affirmed this finding in the Phase IIa ROD that there was no feasible and prudent alternative to avoid the use of the Refuge and that the PBC/TMP Alternative (including the Phase IIa Selected Alternative presented in the ROD) causes the least overall harm. In addition, it was concluded that the PBC/TMP Alternative (including the Phase IIa Selected Alternative presented in the ROD) includes all possible measures to minimize harm.

This chapter addresses, for Phase IIb, the Section 4(f) considerations related to the Refuge, the Chicamacomico Life Saving Station, and the Rodanthe Historic District. No changes in the characteristics of these resources that alter their eligibility for inclusion in the NRHP have occurred since the Revised 4(f) Evaluation, including the effects of Hurricane Irene (August 2011) and Hurricane Sandy (October 2012).

5.2 Proposed Detailed Study Alternatives for Phase IIb

FHWA and NCDOT propose to advance Phase IIb of the PBC/TMP Alternative as a long-term solution to a section of NC 12 damaged by Hurricane Irene and that regularly has been affected by overwash. The Phase IIb detailed study alternatives are consistent with the objectives for later phases of the PBC/TMP Alternative as described in Section 3.3.2 of the 2010 ROD.

The Bridge on New Location Alternative, when selected for detailed study in 2012, was defined as being approximately 3.0 miles in length with a bridge component of approximately 2.6 miles. The reasons the Bridge on New Location Alternative was selected as a detailed study alternative are: it would span the entire area considered geologically susceptible to breaches in the Phase IIb project area (see Figure 3), it would be less vulnerable to potential future changes in Hatteras Island resulting from shoreline erosion, it would minimize visual impacts and impacts to businesses and property, and it would remove NC 12 and its effects for 1.8 miles in the Refuge. Three alignments are assessed in this revised Phase IIb EA. They vary primarily by their location in Pamlico Sound, and are refinements to the Bridge on New Location Alternative concept. They are described in detail in Section 2.5.1 and Section 2.5.2. Their characteristics are:

- 2013 Alignment: 3.00 miles long with a bridge component of approximately 2.60 miles
- 2014A Alignment: 2.76 miles long with a bridge component of approximately 2.39 miles
- 2014B Alignment: 2.83 miles long with a bridge component of approximately 2.46 miles

The reasons the Bridge within Existing NC 12 Easement Alternative was selected as a detailed study alternative are: it would span the entire area considered geologically susceptible to breaches in the Phase IIb project area (see Figure 3) and it would not require a change in the existing NC 12 easement within the Refuge.

The characteristics of the two Phase IIb detailed study alternatives are described in detail in Chapter 3.0.

5.3 Section 4(f) Properties in the Phase IIb Project Area

5.3.1 Description of Properties

There are four Section 4(f) properties in the Phase IIb project area: the Seashore, the Refuge, the Rodanthe Historic District, and the Chicamacomico Life Saving Station.

5.3.1.1 *Cape Hatteras National Seashore*

The Seashore stretches north to south across three islands: Bodie, Hatteras, and Ocracoke. The Seashore contains 30,319 acres of land and 70 miles of open, virtually unspoiled beach. The State of North Carolina donated approximately 10,000 acres of the Seashore's land in 1937. The characteristics of the Seashore are described in detail in Section 3.5.1 of the 2008 FEIS. The Revised 4(f) Evaluation determined that Section 4(f) is not applicable to impacts to the Seashore because the Seashore and the transportation facility now called NC 12 were concurrently and jointly planned and developed by the federal and state governments working together to preserve land for wildlife, while maintaining a means for safe and efficient vehicular transportation (see the Revised Section 4(f) Evaluation in Appendix B of the 2010 EA on page B-12).

5.3.1.2 *Pea Island National Wildlife Refuge*

The Refuge is located within the Seashore on Hatteras Island north of Rodanthe. The primary purpose of the Refuge is to serve as a refuge and breeding ground for migratory birds and other wildlife. The Refuge is comprised of ocean beach, dunes, upland, fresh and brackish water ponds, salt flats, and salt marsh. The objectives of the Refuge are to:

- Provide nesting, resting, and wintering habitat for migratory birds, including the greater snow geese and other migratory waterfowl, shorebirds, wading birds, raptors, and neotropical migrants.
- Provide habitat and protection for endangered and threatened species, such as Loggerhead sea turtles.
- Provide opportunities for public enjoyment of wildlife and wildlands resources. (Pea Island National Wildlife Refuge web site, February 10, 2016.)

In addition to being a wildlife refuge, the Refuge also is a significant historic site eligible for inclusion in the NRHP.

The characteristics of the Refuge are described in detail in Section 3.5.2 of the 2008 FEIS. The Phase IIb project area is partially within the Refuge. Section 4(f) applies to the Refuge both as a wildlife refuge and as a historic property.

5.3.1.3 Rodanthe Historic District

The Rodanthe Historic District boundaries are shown in Figure 6. The following six buildings and associated resources are included in the Rodanthe Historic District: the Levene W. (or Levine) Midgett House; the J. Frank Meekins Fish House; the (former) Rodanthe School; the Chicamacomico Life Saving Station; the Cornelius P. Midgett (or Payne) House, on its new site minus its boathouse and cemetery; and the John Allen Midgett House. The components of the district generally line the east and west sides of NC 12, in the Myrna Peters Road and Midgett Drive area. The principal access for most of these resources is NC 12. The Phase IIb detailed study alternatives would be north of the Rodanthe Historic District. Based on the finding of “No Adverse Effect” under Section 106, FHWA determined that the PBC/TMP Alternative would not use this property under Section 4(f) (see the Revised Section 4(f) Evaluation in Appendix B of the 2010 EA on page B-16 and B-17).

5.3.1.4 Chicamacomico Life Saving Station

The Chicamacomico Life Saving Station is a National Register-listed resource contained within the Rodanthe Historic District, and is illustrative of a property type unique to the Outer Banks. The Station is the most complete of any of the life saving stations built along the North Carolina barrier islands. In addition to its original 1874 board-and-batten station and 1911 shingle-style facility, the Station contains a detached frame kitchen, cisterns, a flag tower, and several frame boathouses, all of which are well-preserved. The Phase IIb detailed study alternatives would be north of the Station. Based on the finding of “No Adverse Effect” under Section 106, FHWA determined that the PBC/TMP Alternative would not use this property under Section 4(f) (see the Revised Section 4(f) Evaluation in Appendix B of the 2010 EA on page B-16 and B-17).

5.3.2 Effect of Hurricane Irene and Hurricane Sandy on Section 4(f) Properties in the Phase IIb Project Area

A breach was created within the Phase IIb project area by Hurricane Irene immediately north of Rodanthe at the southern limit of the Refuge. Sand was used to close the Rodanthe breach in order to re-build the NC 12 roadbed. In addition, Hurricanes Irene and Sandy both destroyed a sandbag dune built in the Phase IIb project area to prevent high tides from overwashing NC 12 and damaging the road. This sandbag dune was first built in 2006. The sandbag dune is mostly within the NC 12 easement. Repair of storm damage to NC 12 in the portion of the Refuge within the Phase IIb project area and elsewhere in the Refuge did not change the Refuge’s NRHP eligibility or the features contributing to this eligibility. Likewise, these repairs did not substantively change the characteristics that allow the Refuge to function as a wildlife refuge.

Hurricanes Irene and Sandy had little or no effect on the Rodanthe Historic District and Chicamacomico Life Saving Station, including the structures and other features associated with these resources’ NRHP eligibility and listing.

5.4 Impact to Section 4(f) Properties

The three potential uses of the Refuge are: permanent incorporation of land, temporary use, and constructive use as defined in regulations (23 CFR 774.17). Permanent incorporation of land would occur when land is permanently incorporated into a transportation facility. Temporary use is defined as a temporary occupancy of land that is adverse in terms of the statute's preservation purpose as determined by the criteria within 23 CFR 774.13(d). Constructive use is determined by the criteria within 23 CFR 774.15. A constructive use of a Section 4(f) property is only possible in the absence of a permanent incorporation of land or a temporary occupancy of the type that constitutes a Section 4(f) use. Constructive use occurs when the proximity impacts of a project on an adjacent or near-by Section 4(f) property, after incorporation of impact mitigation, are so severe that the activities, features, or attributes that qualify the property for protection under Section 4(f) are substantially impaired. Substantial impairment occurs when the protected activities, features, or attributes of the Section 4(f) property are substantially diminished. As a general matter, this means that the value of the resource, in terms of its Section 4(f) purpose and significance, will be meaningfully reduced or lost.

5.4.1 Pea Island National Wildlife Refuge

5.4.1.1 *Permanent Incorporation of Land*

The Bridge on New Location Alternative (all three alignments), once completed, would require permanent incorporation of land for the short section of the alternative (1,300 feet) that would be on a bridge outside the NC 12 existing easement until that bridge is over Pamlico Sound and outside the Refuge's property. The right-of-way for this relocation would use 2.79 acres of Refuge land. Permanent loss of wildlife habitat in the new easement would be 0.01 acre of pile impact (0.30 acre if assuming the larger pile cap area). The bridge in the new easement would shade approximately 1.13 acres in the Refuge (0.84 acre if assuming the larger pile cap area). The introduction of a bridge in the Refuge also would have visual impacts that were found to be an Adverse Effect on the Refuge under Section 106 of the Historic Preservation Act of 1966, as described below in Section 5.4.1.3.

Although a part of the Phase IIa interim bridge project under the terms of its Special Use Permit from the Refuge, the parking lot replacement agreed to for Phase IIa will be built during construction of Phase IIb at a site approximately 900 feet north of the northern terminus of Phase IIb. The site was selected by the Refuge manager with input from NCDOT. It would include the same number of spaces as the existing parking lot. The existing parking lot site will be restored to the surrounding natural condition.

The Bridge within Existing NC 12 Easement Alternative would be confined to the existing NC 12 easement. Thus, there would be no permanent incorporation of land for this alternative.

5.4.1.2 *Temporary Occupancy*

With the Bridge within Existing NC 12 Easement Alternative, it is currently expected that a Special Use Permit for 2.06 acres of temporary construction easement would be requested from the Refuge. This is expected to be comprised primarily of a narrow temporary easement for the entire length of the Phase IIb project on one side. The easement would be approximately 5 feet wide. The primary purpose of this narrow easement would be to provide room for construction workers to erect erosion control measures (fencing) along the edge of the existing NC 12 easement. In addition, pile jetting pipes would be placed between NC 12 and the Pamlico Sound on a 10-foot wide easement at what is currently expected to be three locations. Construction staging is expected in the Refuge at one location, the site of the Phase IIa replacement parking lot described in the previous section.

With the Bridge on New Location Alternative (all three alignments), a temporary easement of 0.63 acre would be needed for a temporary traffic maintenance road to take traffic around the northern end of the new bridge. A Special Use Permit would be requested from the Refuge.

A temporary occupancy does not constitute a Section 4(f) use when all of five conditions listed in 23 CFR 774.13(d) are satisfied. The five conditions and evidence that all five are met in the case of the Phase IIb detailed study alternatives are:

1. Duration must be temporary, i.e., less than the time needed for construction of the project, and there should be no change in ownership of the land.

Although the Special Use Permit would be for the duration of Phase IIb construction, no one part of the permitted temporary construction easement would be used for the entire duration of the project. For the Bridge within Existing NC 12 Easement Alternative, the narrow 5-foot-wide easement would be used primarily during the installation and removal of erosion control fencing at the beginning and end of the construction period. The jetting pipe easements would be used only during bridge pile placement. For the Bridge on New Location Alternative (all three alignments), the temporary easement would be needed primarily near the end of the construction period when the Bridge on New Location Alternative is being connected into existing NC 12.

2. Scope of the work must be minor, i.e., both the nature and the magnitude of the changes to the Section 4(f) property are minimal.

The scope of work for the 0.63 to 2.06 acres of temporary construction easement, depending on the alternative, is expected to be confined to use for the movement of construction personnel, placement of jetting pipes, or traffic maintenance. No features that substantively contribute to the Refuge's standing as a wildlife refuge or

that contribute to the eligibility of the Refuge as a historic resource would be affected.

3. There are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of the property, on either a temporary or permanent basis.

No features that contribute to the eligibility of the Refuge as a historic resource would be adversely affected physically either on a temporary or permanent basis.

The area used is small and adjacent to NC 12. The wildlife habitat used would be restored as per the conditions of the Refuge and its Special Use Permit. Thus, there are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of the Refuge as a wildlife refuge, on either a temporary or permanent basis.

Coordination with the Refuge and the SHPO on the temporary easement will ensure this occurs.

4. The land being used must be fully restored, i.e., the property must be returned to a condition which is at least as good as that which existed prior to the project.

The wildlife habitat used would be restored as per the conditions of the Refuge and its Special Use Permit.

5. There must be documented agreement of the officials with jurisdiction over the Section 4(f) resource regarding the above conditions (in this instance, Refuge and the North Carolina State Historic Preservation Officer [SHPO]).

This documentation is pending and will be resolved prior to the release of a ROD for the Phase IIb Project. With Phase IIa, the Refuge and SHPO agreed that a similar type of temporary impact was not a Section 4(f) use.

Therefore, once the fifth condition is met, the temporary construction easement associated with the construction of either of the two Phase IIb detailed study alternatives would not constitute a Section 4(f) use. If the fifth condition is not met, a Section 4(f) evaluation will be prepared for this temporary impact.

5.4.1.3 Constructive Use

Since the Bridge on New Location Alternative (all three alignments) would permanently incorporate Refuge lands, a constructive use of Section 4(f) property would not occur.

In the Revised 4(f) Evaluation, FHWA concluded that the Parallel Bridge Corridor with Phased Approach/Rodanthe Bridge Alternative would constructively use the Refuge. The Bridge within Existing NC 12 Easement Alternative has similar characteristics to

part of Phase II of the Parallel Bridge Corridor with Phased Approach/Rodanthe Bridge Alternative, in that it is a bridge within the existing easement. The only difference between the two designs in the Refuge is the bridge height (the Phase IIb bridge would be lower).

As indicated in the Revised 4(f) Evaluation on page 17 (page B-17 in the 2010 EA), FHWA based its conclusions on review of available documentation pertaining to why the Refuge is eligible for the NRHP: its significance, what elements of the historic landscape were constructed by the Civilian Conservation Corps (and the extent to which those elements still exist and have not been altered), and the proximity of the alternative to the significant elements of the historic landscape that are still extant. FHWA also considered the extent to which the visual impact of the alternative could be lessened through mitigation measures, such as by requiring careful attention to the design details of the bridge structure, or through landscaping. FHWA found that: the historic landscape of the Refuge is a rare example of its type; it is nationally significant; a number of contributing elements are extant and in fair condition; although threatened by weather, the historic landscape is protected from development because of its location within the Seashore and Refuge; and the introduction of a bridge structure up to 33 feet in height across the entire length of the Refuge in a location nearly adjacent to most of the significant contributing elements that still exist (dikes and dunes) would be a substantial visual intrusion for which little mitigation is possible. Thus, the proximity impacts from this alternative would be so severe that the protected activities, features, or attributes that qualify the property for protection under Section 4(f) would be substantially impaired.

As noted above, the Revised 4(f) Evaluation assumed a bridge deck height of 33 feet. However, bridge heights were re-evaluated during design of the alternative; as a result, the bridge deck would be approximately 23 feet high for much of the Bridge within Existing NC 12 Easement Alternative for the 1.8 miles it is within the Refuge.

Despite the lower elevation of the Bridge within Existing NC 12 Easement Alternative's bridge, the still-tall bridge structure would still stand in contrast with the natural character of the Refuge and its historic landscape. A relatively tall bridge has never previously been a part of Refuge views. The bridge would dominate views from the dunes lining the beach and, as the dunes naturally reduce in size, migrate with the shoreline, or disappear over time, it would also dominate views of the beach and ultimately, the ocean. It would be uncharacteristic of the existing undeveloped and protected setting of the Refuge that makes it rare along the eastern US seaboard in terms of views and a resource for recreational activities. Therefore, the Bridge within Existing NC 12 Easement Alternative would be a constructive use of the Refuge, just as was found for the Parallel Bridge Corridor with Phased Approach/Rodanthe Bridge Alternative in the Revised 4(f) Evaluation.

5.4.1.4 Other Impacts to the Refuge

In addition to impacts associated with the use of the Refuge lands, all of the detailed study alternatives would result in the loss of direct road access to the Refuge for 1.8 miles. Sacrificing direct motor vehicle access in favor of eliminating the need for artificial dunes to maintain a surface road is the preference of USFWS, which has indicated in the past that it will provide for some form of replacement access to the Refuge and its facilities where direct access from a surface road is lost in Phase II and in future phases of the Bonner Bridge Replacement Project (B-2500). With the Bridge within Existing NC 12 Easement Alternative only, with shoreline erosion, beach and offshore recreation ultimately would be affected by bridge pier presence first on the beach and then off-shore. (See Section 4.2.4.2 for details related to these impacts.)

5.4.2 Rodanthe Historic District and Chicamacomico Life Saving Station

The southern termini of both the Bridge within Existing NC 12 Easement and Bridge on New Location alternatives (all three alignments) are located outside the Rodanthe Historic District and the Chicamacomico Life Saving Station property. This is consistent with the alternatives assessed in the Revised Section 4(f) Evaluation, the Phased Approach/Rodanthe Bridge and the Bridge South component of the Road North/Bridge South alternatives, respectively. Thus, there is no use of these properties by the detailed study alternatives.

The location and design of the Bridge on New Location Alternative (all three alignments) within the viewshed of the Rodanthe Historic District and Chicamacomico Life Saving Station would be virtually identical to the Bridge South component of the Road North/Bridge South Alternative. The Bridge within Existing NC 12 Easement Alternative within the viewshed of the Rodanthe Historic District and Chicamacomico Life Saving Station would be substantially lower than that of the Phased Approach/Rodanthe Bridge. The Phased Approach/Rodanthe Bridge design maintained a bridge 33.5 feet above the existing ground elevation (mean sea level) to a point approximately 400 feet from the Rodanthe Historic District and Chicamacomico Life Saving Station boundaries. A slip ramp parallel to the 33.5-foot high bridge was used to bring traffic down to grade just before the boundaries. The Bridge within Existing NC 12 Easement Alternative would begin to drop from a height of 30 feet above the existing ground elevation approximately 1,180 feet from the Rodanthe Historic District and Chicamacomico Life Saving Station boundaries. (See Section 2.5.3 regarding the reasons for the change in bridge height from 33.5 to 30 feet.) The roadway would reach the existing ground elevation approximately 110 feet from the Rodanthe Historic District and Chicamacomico Life Saving Station boundaries. The changes in the design of the bridge at the southern terminus reduce the visual impact on the District and Life Saving Station.

The Revised Section 4(f) Evaluation indicated that the SHPO, the Advisory Council on Historic Preservation (ACHP), and consulting parties concluded “No Adverse Effect” for all of the Parallel Bridge Corridor bridging alternatives on the Rodanthe Historic District and the Chicamacomico Life Saving Station. Given that the visual impact on the views from these two resources would be unchanged or less with the Phase IIb detailed study alternatives than their counterparts assessed in the Revised Section 4(f) Evaluation, the Phase IIb detail study alternatives also would have “No Adverse Effect.” Neither of the Phase IIb detailed study alternatives would constructively use the Rodanthe Historic District and the Chicamacomico Life Saving Station.

Phase IIb is at the southern end of the Bonner Bridge Replacement Project (B-2500) project area. South of the Phase IIb and overall project area, NC 12 is not threatened by shoreline erosion between now and 2060, as indicated by the current 2060 high erosion shoreline shown in Figure D-1. Therefore, future phases of the Bonner Bridge Replacement Project (B-2500) are not expected to affect the Rodanthe Historic District or the Chicamacomico Life Saving Station.

5.5 Analysis of Avoidance Alternatives

Circumstances have not changed such that feasible and prudent avoidance alternatives exist. This section addresses the avoidance alternatives considered in the 2008 Final Section 4(f) Evaluation (see Chapter 5 of the 2008 FEIS), in the Revised 4(f) Evaluation for the Bonner Bridge Replacement Project (B-2500), and in the Phase IIa EA; an additional potential avoidance alternative applicable to Phase IIb only; and the No-Build Alternative. The focus of this analysis of avoidance alternatives is on the Seashore and Refuge, since the Phase IIb detailed study alternatives avoid the Rodanthe Historic District and the Chicamacomico Life Saving Station.

5.5.1 Alternatives Previously Considered that are Not Avoidance Alternatives

A ferry from Bodie Island at Oregon Inlet to Rodanthe or a bridge or ferry from Stumpy Point to Rodanthe would not be a Section 4(f) resource avoidance alternative. A mainland bridge terminal at Stumpy Point would cause environmental impacts to Alligator River National Wildlife Refuge (ARNWR) because of the anticipated upgrades to US 264 and SR 1100, such as wider lanes and shallower curves that would be required to safely accommodate increased traffic volumes. Such upgrades also would be required to accommodate increased traffic volumes traveling to a ferry terminal at Stumpy Point. (See Section 5.3.2 of the 2008 FEIS.)

The development of a ferry terminal on Bodie Island at Oregon Inlet would require land from the Seashore, but as indicated in the 2009 Revised Section 4(f) Evaluation (see Appendix B of the 2010 EA beginning on page B-9) Section 4(f) is not applicable to the Seashore because there is a history of concurrent and joint planning between the

Seashore and provisions for transportation facilities. However, ferry service is not a feasible and prudent alternative (as indicated in Section 2.3.2.6 of the Phase IIa EA on page 2-12) because:

- A Ferry Alternative that accommodates the current annual traffic demand, 2 million vehicles per year, would still diminish convenience to motorists because of vessel travel speeds and loading logistics. Motorists wishing to access Hatteras Island and Bodie Island would be forced to alter timing of trips or even forgo travel between the islands at times. The provision of basic emergency, medical, and public services also would be adversely affected.
- Dredging that would be needed to construct and maintain an 18-mile-long route from the Oregon Inlet Marina Complex (Bodie Island) to Rodanthe would substantially and permanently impact SAV, shallow water habitat, primary and secondary nursery areas, and shell bottom habitat.
- A Ferry Alternative would be far more expensive than any other transportation alternatives under consideration.

5.5.2 Avoidance Alternatives Previously Considered

Section 5.5.1 of the Phase IIa EA re-considered avoidance alternatives addressed in the 2008 Final Section 4(f) Evaluation and the 2009 Revised Section 4(f) Evaluation, including the Rehabilitate Bonner Bridge Avoidance Alternative, Bridge from Rodanthe to Roanoke Island Avoidance Alternative, and Pamlico Sound Bridge Alternative. The FHWA concluded that its previous determinations on these alternatives remain valid; they would not be a feasible and prudent avoidance alternative as defined in 23 CFR 774.17. Comments on these conclusions were addressed in the Phase IIa ROD. No events have occurred since the release of the Phase IIa EA and ROD nor the 2013 Phase IIb EA that would change FHWA's conclusions in the Phase IIa EA related to these alternatives.

5.5.3 Potential for Additional Phase IIb Avoidance Alternatives

The use of the Refuge described above in Section 5.4.1.1 with the Bridge on New Location Alternative (all three alignments) would result from altering the alignment of NC 12 so that it would leave the existing NC 12 easement within the Refuge at a point approximately 1.8 miles north of the Refuge boundary with Rodanthe and enter Pamlico Sound. This would require 2.79 acres of new Refuge use for NC 12 easement and would result in the return of approximately 19.27 acres of existing NC 12 easement to the Refuge. The re-aligned NC 12 would be on a bridge, which would be a visual impact to the Refuge.

The constructive use of the Refuge described above in Section 5.4.1.3 for the Bridge within Existing NC 12 Easement Alternative results from a substantial visual intrusion.

That visual intrusion would be associated with the height of the bridge that makes up the Bridge within Existing NC 12 Easement Alternative.

In order for an avoidance alternative to be feasible and prudent, it must first meet the project's purpose and need. The third purpose presented in Section 1.2 on page 1-6 of the 2008 FEIS applies the Phase IIb project. It states: "Provide a replacement crossing that will not be endangered by shoreline movement through year 2050." There are four ways to meet the third project purpose:

1. Relocate all of NC 12 outside the Refuge.
2. Relocate NC 12 outside the existing easement and west of the forecast high erosion shoreline on a bridge that spans the areas geologically susceptible to breaching.
3. Relocate NC 12 on a bridge within the existing NC 12 easement that spans the areas geologically susceptible to breaching and the portions of the easement that are forecast to be in ocean as a result of shoreline erosion.
4. Beach nourishment.

All four of these strategies have been considered. The first is not feasible and prudent as re-affirmed above in Section 5.5.2. The other three are not avoidance alternatives, as they would all involve a use (either permanent or constructive) of Refuge land. Therefore, there are no new avoidance alternatives that can be considered specifically for Phase IIb.

5.5.4 No-Build Alternative

With the No-Build Alternative, NCDOT would continue to keep NC 12 open within the existing NC 12 easement in the Phase IIb project area by maintaining and rebuilding the sandbag dune as needed and close any breaches that could open. Such an alternative would not be feasible and prudent because it would not meet the third project purpose presented in Section 1.2 of the 2008 FEIS: "Provide a replacement crossing that will not be endangered by shoreline movement through year 2050." The status quo would leave NC 12 in the Phase IIb project area under regular threat from shoreline erosion and severance during storm events. Further, the sandbag dune is permitted under North Carolina's Coastal Area Management Act as a temporary activity until a long-term improvement can be built; therefore, it cannot be maintained indefinitely.

5.5.5 Avoidance Alternatives Conclusion

Therefore, based on the determinations from the 2008 FEIS/Final Section 4(f) Evaluation, the 2009 Revised 4(f) Evaluation, Chapter 5.0 of the Phase IIa EA, Chapter 5.0 of the 2013 Phase IIb EA, and the above findings, there is no feasible and prudent avoidance alternative to the use of the Section 4(f) property needed to construct Phase IIb of the PBC/TMP Alternative.

5.6 Effect on the Least Harm Analysis

The 2008 FEIS, the 2010 EA, and the 2009 Revised 4(f) Evaluation all assessed the entire Bonner Bridge Replacement Project (B-2500) from the south end of Bodie Island to Rodanthe. The least harm analysis presented on pages 22 to 27 of the 2009 Revised 4(f) Evaluation (pages B-22 to B-27 of the 2010 EA) concluded on page B-27 that the PBC/TMP Alternative was the alternative that causes the least overall harm. That least harm analysis uses seven factors to reach a determination as to least overall harm. These factors are:

1. The ability of the alternatives to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property);
2. The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection;
3. The relative significance of each Section 4(f) property;
4. The views of the official(s) with jurisdiction over each Section 4(f) property;
5. The degree to which each alternative meets the purpose and need for the project;
6. After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f); and
7. Substantial differences in costs among the alternatives.

As stated in Section 5.6 of the Phase IIa EA, no changes have occurred in the Bonner Bridge Replacement Project (B-2500) project area or its potential PBC/TMP Alternative phases related to those seven factors since the Revised 4(f) Evaluation was issued that would alter FHWA's findings. The least harm analysis here focuses on whether the least harm to the Refuge would result from a Bridge on New Location Alternative or the Bridge within Existing NC 12 Easement Alternative, or whether the two alternatives would result in substantially equal harm. The least harm analysis in the 2013 Phase IIb EA concluded that the detailed study alternatives offer the lesser harm on some impact considerations and greater harm on other impact considerations. Further, FHWA and NCDOT concluded that the views of the official(s) with jurisdiction over the management of the Refuge, USFWS under Section 7 of the Endangered Species Act, and the NMFS and FMCs under Magnuson-Stevens Fishery Conservation and Management Act, as well as the residents, business owners, property owners of the section of Rodanthe affected, and other members of the public were important to finalizing a decision of least harm. The views of these stakeholders, as well as the SHPO, were solicited by the distribution of the 2013 Phase IIb EA and were taken into consideration in reaching the conclusion on least harm in this revised Phase IIb EA.

Each of the seven factors listed above is re-evaluated for the Phase IIb detailed study alternatives in the sections that follow.

5.6.1 Factor #1: The ability of the alternatives to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property)

The primary impact of the Phase IIb detailed study alternatives on the activities, attributes, or features that qualify the Refuge for Section 4(f) protection as a historic resource would be the visual presence of the bridge. In addition, the two alternatives differ in terms of changes in the NC 12 easement. The Bridge on New Location Alternative (all three alignments) would impact the activities, attributes, or features that qualify the Refuge for Section 4(f) protection as a wildlife refuge by the requirement of 2.79 acres of new NC 12 easement and changes in Refuge access.

5.6.1.1 Visual Impacts

In terms of visual impact, as indicated in Section 5.4.1.3, this bridge would stand in contrast with the natural character of the Refuge and its historic features of dikes and dunes. It would be uncharacteristic of the existing undeveloped and protected setting of the Refuge that makes it rare along the eastern US seaboard in terms of views and a resource for recreational activities. The visual impact of the Bridge within Existing NC 12 Easement Alternative on the historic landscape would extend through the Refuge for 1.8 miles. The same visual impact would be present with the Bridge on New Location Alternative (all three alignments) for 0.4 mile.

There are limited opportunities to directly mitigate the visual impact because the only complete mitigation would be to place NC 12 at grade or completely outside the Refuge, which is not feasible and prudent, as discussed in Section 5.5. Further, lowering the bridge below storm surge elevation also would not be prudent, because it would put the bridge spans at risk of damage during storms. NCDOT, FHWA, and SHPO have agreed in the 2013 first amendment to the 2010 Section 106 Programmatic Agreement (PA) (see Appendix E of the Phase IIa ROD), to using a bridge rail with a bridge rail parapet height of 30 inches high for Phase I and 36 inches high for Phase IIa. The original PA in Appendix D of the 2010 ROD includes other mitigation stipulations related to management of NC 12, providing USFWS and NPS with copies of cultural resource technical reports, installing signs directing people to the Refuge's visitor center and points of historic interest in the Refuge, and providing exhibits and kiosks about the historic significance of the Civilian Conservation Corps' work efforts in the Refuge.

5.6.1.2 Changes in NC 12 Easement and Access

The Bridge on New Location Alternative (all three alignments) would require permanent incorporation of land for the short section of the alternative (1,300 feet) that would be on a bridge outside the NC 12 existing easement until that bridge is over Pamlico Sound and outside the Refuge's property. An easement for this relocation

would use 2.79 acres of Refuge land. NC 12 would be on a bridge in this easement. Permanent loss of wildlife habitat would be 0.01 acre of pile impact (0.30 acre if assuming the larger pile cap area). The bridge would shade approximately 1.13 acres (0.84 acre if assuming the larger pile cap area). However, 19.27 acres of the existing NC 12 easement would be returned to the Refuge and restored to a natural state (including pavement removal) under the direction of the Refuge, resulting in a net gain in Refuge land of 16.48 acres.

With the Bridge within Existing NC 12 Easement Alternative, no permanent changes would be made to the location of the existing NC 12 easement. There would be no net gain in Refuge land.

All of the detailed study alternatives would result in the loss of direct road access to the Refuge for 1.8 miles. Sacrificing direct motor vehicle access in favor of eliminating the need for artificial dunes to maintain a surface road is the preference of USFWS.

5.6.2 Factor #2: The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection.

The primary impact of the Phase IIb detailed study alternatives on the activities, attributes, or features that qualify the Refuge for Section 4(f) protection as a historic resource would be the visual presence of the bridge. This impact could not be directly mitigated for the reasons noted in Section 5.6.1. Also as indicated in Section 5.6.1, the severity of harm would be less with the Bridge on New Location Alternative (all three alignments) on the Refuge as a historic resource because a bridge would be in the Refuge for 0.4 mile rather than 1.8 miles. This 1.4-mile difference would remain even if additional bridges were built beyond that associated with Phase I, Phase IIa, and the Bridge on New Location Alternative.

With the Bridge on New Location Alternative (all three alignments), the return of 19.27 acres of NC 12 easement to the Refuge combined with placing NC 12 on a bridge in the new 2.79-acre easement would result in a benefit to the Refuge and its activities, attributes, and features. The Bridge within Existing NC 12 Easement Alternative would neither require a new permanent use of Refuge lands nor result in the return of NC 12 easement. The benefit offered by the Bridge on New Location Alternative (all three alignments) would not occur.

5.6.3 Factor #3: The relative significance of each Section 4(f) property

The Refuge is the only Section 4(f) property used by the Phase IIb detailed study alternatives. Thus, this factor does not influence this least harm analysis.

5.6.4 Factor #4: The views of the official(s) with jurisdiction over each Section 4(f) property

The State Historic Preservation Office (HPO) representative on the project's NEPA/Section 404 Merger Team, whose jurisdiction over the Refuge relates to its eligibility for the National Register of Historic Places, did concur at the November 14, 2012 Merger Team meeting with the selection of the two Phase IIb detailed study alternatives. The HPO representative also concurred on June 17, 2015 that the Bridge on New Location Alternative using the 2014B alignment was the LEDPA (see Section 6.2).

Responsible officials for the Refuge (represented by the Refuge manager) in a letter dated July 22, 2013, indicated that a 2.87-acre use of the Bridge on New Location Alternative could likely be determined a minor modification of the existing NC 12 easement if adequate mitigation can achieve no net loss of habitat quantity and quality. The current estimate of Refuge use is 2.79 acres. The Refuge manager also indicated that the return and restoration of 18.68 acres of existing easement and nourishment of estuarine shoreline (later dropped from consideration after discussions with the Merger Team on July 15, 2013 [see Section 6.2]) would be appropriate for mitigation. The current estimate of existing easement that could be returned is 19.27 acres. The Refuge representative on the project's NEPA/Section 404 Merger Team concurred on June 17, 2015 that the Bridge on New Location Alternative using the 2014B alignment was the LEDPA (see Section 6.2). In concurring, the Refuge representative indicated that in terms of use of Refuge land by NC 12, the Bridge on New Location Alternative would be a net benefit to the Refuge.

5.6.5 Factor #5: The degree to which each alternative meets the purpose and need for the project

The Phase IIb detailed study alternatives meet the purpose and need for the project to the same degree. Thus, this factor does not influence this least harm analysis.

5.6.6 Factor #6: After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f)

A comparison of key impacts to resources not protected by Section 4(f) is presented in Table 8.

For the Phase IIb detailed study alternatives, FHWA has considered the magnitude of adverse impact after mitigation for these resources, including adverse impacts to wetlands, the open waters of the Pamlico Sound, the community of Rodanthe, protected species as regulated by Section 7 of the Endangered Species Act, and essential fish habitat:

- For all Phase IIb detailed study alternatives, less than 1 acre of jurisdictional wetland would be filled.

Table 8. Comparison of Key Impacts of the Phase IIb Alternatives

Impact Type	Bridge within Existing NC 12 Easement Alternative	2013 Bridge on New Location Alternative	2014A Bridge on New Location Alternative	2014B Bridge on New Location Alternative (Preferred)
Rodanthe				
Residential Relocation	5	2	5	2
Business Relocation	4	4	4	4
Local Access Changes	Local one-way frontage roads to serve homes and businesses currently served by NC 12; community bisected by bridge	Between the project terminus and the Refuge boundary, existing NC 12 would serve homes and businesses	Between the project terminus and the Refuge boundary, existing NC 12 would serve homes and businesses	Between the project terminus and the Refuge boundary, existing NC 12 would serve homes and businesses
Visual Impacts	Bridge substantial visual presence, including homes less than 100 feet from bridge with traffic seen from third floor windows. Also, frontage roads for local traffic at edge of existing right-of-way	Bridge in views of Pamlico Sound and on the south truncates the existing 180 degree panorama. The distance between the Bridge and the Pamlico Sound shoreline would be approximately 1,550 to 2,350 feet except when approaching shore.	Bridge in views of Pamlico Sound and on the south truncates the existing 180 degree panorama. The distance between the Bridge and the Pamlico Sound shoreline would be approximately 460 to 1,350 feet except when approaching shore.	Bridge in views of Pamlico Sound and on the south truncates the existing 180 degree panorama. The distance between the Bridge and the Pamlico Sound shoreline would be approximately 1,050 to 1,400 feet except when approaching shore.
Recreation impacts	With shoreline erosion, beach and offshore recreation on the Atlantic Ocean ultimately affected by bridge presence, including fishing, hiking, surfing, wind surfing, kite boarding, swimming, ocean kayaking, and birding	Water recreation use limited by bridge presence in Pamlico Sound, particularly wind surfers and kite boarders. Approximately 550 acres of open water would remain between the bridge and the shore.	Water recreation use limited by bridge presence in Pamlico Sound, particularly wind surfers and kite boarders. Approximately 334 acres of open water would remain between the bridge and the shore.	Water recreation use limited by bridge presence in Pamlico Sound, particularly wind surfers and kite boarders. Approximately 357 acres of open water would remain between the bridge and the shore.
Noise Sensitive Receptors Affected	6 homes	Traffic noise in 2025 approaches or exceeds the FHWA noise abatement criteria of 67 dBA at 2 homes	Traffic noise in 2025 approaches or exceeds the FHWA noise abatement criteria of 67 dBA at 3 homes	Traffic noise in 2025 approaches or exceeds the FHWA noise abatement criteria of 67 dBA at 3 homes
Cemetery	No impact	Bridge adjacent to cemetery	Bridge moved away from cemetery	Bridge adjacent to cemetery
Natural Resources				
Jurisdictional Wetlands: Permanent Fill	0.05 acres	0.44 acre	0.39 acre	0.41 acre
Jurisdictional Wetlands: Permanent Piles	0 acres	< 0.01 acre	< 0.01 acre	<0.01 acre

Table 8 (concluded). Comparison of Key Impacts of the Phase IIb Alternatives

Impact Type	Bridge within Existing NC 12 Easement Alternative	2013 Bridge on New Location Alternative	2014A Bridge on New Location Alternative	2014B Bridge on New Location Alternative (Preferred)
CAMA Wetlands Permanent Fill and Pile Shading	0 acres	<0.01to 0.03 acre 0.13 to 0.16 acre	<0.01 to 0.05 acre 0.12 to 0.15 acre	<0.01to 0.03 acre 0.15 to 0.16 acre
Protected Species	Lights from the bridge are likely to adversely affect sea turtle hatchlings; could be mitigated by a 36-inch bridge rail parapet and construction lighting type, which will be considered during Section 7 consultation for this project.	Lights from the bridge are likely to adversely affect sea turtle hatchlings; could be mitigated by a 36-inch bridge rail parapet and construction lighting type, which will be considered during Section 7 consultation for this project.	Lights from the bridge are likely to adversely affect sea turtle hatchlings; could be mitigated by a 36-inch bridge rail parapet and construction lighting type, which will be considered during Section 7 consultation for this project.	Lights from the bridge are likely to adversely affect sea turtle hatchlings; could be mitigated by a 36-inch bridge rail parapet and construction lighting type, which will be considered during Section 7 consultation for this project.
Essential Fish Habitat (EFH)/Submerged Aquatic Vegetation (SAV)	Minor impact associated with pumping pile jetting water from Pamlico Sound, mitigated by screening if needed. In 2060, when the bridge could be over the ocean, there would be approximately 11.00 acres of EFH shading.	Pamlico Sound is EFH and contains SAV or SAV habitat; would construct bridge from work bridge and contain jetting spoils to minimize impact. There would be a permanent EFH impact of 11.23 acres, almost all associated with the bridge deck shading EFH, SAV, and/or SAV habitat. Most of alignment is in an area of dense existing SAV beds.	Pamlico Sound is EFH and contains SAV or SAV habitat; would construct bridge from work bridge and contain jetting spoils to minimize impact. There would be a permanent EFH impact of 9.92 acres, almost all associated with the bridge deck shading EFH, SAV, and/or SAV habitat. Most of alignment is in an area with fewer dense existing SAV beds.	Pamlico Sound is EFH and contains SAV or SAV habitat; would construct bridge from work bridge and contain jetting spoils to minimize impact. There would be a permanent EFH impact of 10.50 acres, almost all associated with the bridge deck shading EFH, SAV, and/or SAV habitat. Most of alignment is in an area with fewer dense existing SAV beds. 2015 surveys of this alignment indicate 5.81 acres of SAV cover affected.
Engineering Considerations				
Sight Distance	Adequate sight distance for speed up to 60 mph.	Adequate sight distance for speed up to 60 mph.	Adequate sight distance for speed up to 60 mph.	Sight distance on southern –most curve over sound is adequate for vehicles traveling at 46 mph. Bridge rail on inside of curve limits sight distance. Inside shoulder of 25 feet needed for 60 mph.

- In Rodanthe, the community impacts of the Bridge within Existing NC 12 Easement Alternative would involve: bisecting the community, changing local property access patterns, being a substantial visual presence in the midst of the community, displacing five homes and two businesses, and affecting six noise sensitive receptors. In the long-term, beach and off-shore recreation would be affected by bridge presence as a result of shoreline erosion. The community impacts of the Bridge on New Location Alternative would involve being within views of Pamlico Sound at a location 460 to 2,350 feet from the shore (1,050 to 1,400 feet with the 2014B alignment [preferred]), displacing two to three homes (two with the 2014B alignment [preferred]) and two businesses, and affecting two noise sensitive receptors. In addition, the bridge's presence in the sound would limit recreation use, particularly windsurfers and kite boarders. At the December 2011 public meeting in Rodanthe those commenters indicating a preference for one of the two now detailed study alternatives were close to evenly divided, as documented in Section C.1.1 of Appendix C of this Phase IIb EA. At the January 2014 public hearings, 12 commenters expressed a preference for the Bridge within Existing NC 12 Easement Alternative citing as reasons: lower natural resource impacts, lower cost, avoidance of impact to Pamlico Sound recreation activities and sound views, it makes use of the existing easement, and the belief that permits and right-of-way would be easier to obtain for this alternative than for the other detailed study alternative. At the January 2014 public hearings, 33 commenters and 64 petition signers expressed a preference for the Bridge on New Location Alternative emphasizing the position that this alternative's environmental and community impacts would be less than the Bridge within Existing NC 12 Easement Alternative. Reasons included that the Bridge on New Location Alternative: avoids visual impacts along NC 12 in Rodanthe, does not interfere with the character/appeal/safety of the beach, has less recreation impact, does not fragment the Rodanthe community, causes less disturbance to shoreline processes, minimizes property value impacts, is less inconvenient to local traffic, does not displace the Island Convenience Store, reduces NC 12's footprint in the Refuge, avoids building on an eroding beach, and is in the calmer sound as opposed to the ocean, thereby reducing risk. Five commenters preferred whichever of the detailed study alternatives could be built more quickly. The comments are summarized in Section F.1 in Appendix F.
- The Bridge on New Location Alternative (all three alignments) would require 2.79 acres of new permanent NC 12 easement in the Refuge. The loss of habitat within the new easement would be minimized because NC 12 would be entirely on a bridge within the new easement; there is no other permanent fill of wetlands or other habitat within the proposed new easement. As mitigation, NCDOT would return approximately 19.27 acres of existing NC 12 easement to the Refuge, removing the pavement and restoring the habitat of the former easement per the direction of the USFWS. In a letter dated July 22, 2013, the Refuge manager indicated that the 2.87-acre use (later revised to 2.79 with design refinements) of the Bridge on New

Location Alternative could likely be determined a minor modification of the existing NC 12 easement if adequate mitigation can achieve no net loss of habitat quantity and quality.

The Bridge within Existing NC 12 Easement Alternative would be confined to the existing NC 12 easement. No new permanent easement would be required. Both alternatives would result in the loss of direct road access to the Refuge for 1.8 miles. No Refuge facilities are in this area. As a result of long-term shoreline erosion, the Bridge within Existing NC 12 Easement Alternative would ultimately affect beach and off-shore recreation in this 1.8-mile-long portion of the Refuge. This impact could not be mitigated. This impact to Atlantic Ocean beach and off-shore recreation would not occur with the Bridge on New Location Alternative (all three alignments).

As indicated above, the Refuge representative on the project's NEPA/Section 404 Merger Team concurred on June 17, 2015 that the Bridge on New Location Alternative using the 2014B alignment was the LEDPA (see Section 6.2). In concurring, the Refuge representative indicated that in terms of use of Refuge land by NC 12, the Bridge on New Location Alternative would be a net benefit to the Refuge.

- The USFWS has previously indicated that the vehicle headlights from the bridge in proximity to the ocean beach necessitate a May Affect, Likely to Adversely Affect for several species of sea turtles. In mitigation for this effect, NCDOT has agreed that Phase IIb will include a 36-inch high bridge rail parapet in order to minimize the impact of vehicle headlights on nesting sea turtles and sea turtle hatchlings. In addition, NCDOT will use a type of construction lighting that minimizes the impacts to nesting sea turtles, per commitment #26 in the Project Commitments presented in this revised Phase IIb EA. SHPO also has agreed to the bridge rail height in association with the consideration of its contribution to the visual impacts described above under Factors #1, #2, and #4.
- Construction impacts, including jetting, would affect EFH for the entire length of the Bridge on New Location Alternative (all three alignments) when it is in Pamlico Sound. Impacts would be minimized by not using dredging during bridge construction, but instead using a work bridge in areas too shallow for a work barge, and by containing pile jetting spoil.

The Bridge on New Location Alternative also would permanently affect 10.1 to 11.3 acres (10.6 acres with the preferred 2014B alignment) of EFH, SAV, and/or SAV habitat, primarily by shading. Pile presence may result in changes to: water quality, water flow, sediment grain size and topography, underneath the bridge and for some distance surrounding the bridge.

As a result of shoreline erosion, much of the Bridge within Existing NC 12 Easement Alternative would eventually be over the ocean, affecting EFH habitat, including again impacts related to water quality, water flow, sediment grain size and topography, and bridge shading.

Best Management Practices (BMPs) would be used to mitigate water quality impacts for the detailed study alternatives. NCDOT's proposal for SAV and EFH mitigation for the 2014B Bridge on New Location Alternative (preferred) includes a living reef that will serve as a wave break to reduce wave energy and facilitate seagrass growth in the reef shadow; additional SAV plants would be transplanted behind the wave break in order to encourage further propagation within the mitigation site. NMFS agreed that the 6.01 acres of SAV impact delineated in 2014 was a defensible impact calculation for mitigation planning purposes that could be refined later if the data warranted a change. Specifics are under discussion with NMFS. Additional detail on this proposal and agreements as of December 1, 2015 are presented in Section 4.2.5.5. The NCDEQ-DCM and NMFS representative on the project's NEPA/Section 404 Merger Team concurred on June 17, 2015 that the Bridge on New Location Alternative using the 2014B alignment was the LEDPA (see Section 6.2). NMFS concurred with the understanding that the SAV and EFH impacts would be mitigated.

5.6.7 Factor #7: Substantial Differences in costs among the alternatives

The Bridge on New Location Alternative would cost \$175.0 to \$214.8 million (the preferred 2014B alignment would cost \$179.3 million to \$198.3 million) and the Bridge within Existing Easement Alternative would cost \$162.8 to \$187.4 million. (See Table 1.) Thus, the 2014B Bridge on New Location Alternative (preferred) would cost 6 to 10 percent more than the Bridge within Existing NC 12 Easement Alternative.

5.6.8 Conclusion

The least harm analysis presented in the 2009 Revised 4(f) Evaluation concluded that the PBC/TMP Alternative was the alternative that causes the least overall harm. The least harm analysis presented in this Section 5.6 focuses on whether the least harm to the Refuge would result from one of the Bridge on New Location Alternative alignments (use) or Bridge within Existing NC 12 Easement Alternative (constructive use). Based on consideration and balancing of the seven factors above, FHWA and NCDOT have concluded that the 2014B Bridge on New Location Alternative (preferred) would result in the least overall harm for the following reasons:

- It would (along with the other Bridge on New Location Alternative alignments) be within the Refuge for 0.4 mile rather than 1.8 miles, minimizing the visual change and resulting in a net decrease in NC 12 easement within the Refuge of 16.48 acres.

- The project’s NEPA/Section 404 Merger Team, including the HPO and Refuge representatives, concurred on June 17, 2015 that the Bridge on New Location Alternative using the 2014B alignment was the LEDPA.
- It would minimize community impacts to Rodanthe by placing the bridge structure in Pamlico Sound rather than in midst of the community.
- When over Pamlico Sound, the 2014B alignment is in an area with fewer dense existing SAV beds. Impacts to EFH and SAV would be mitigated.
- Differences in other impacts between the alternatives generally are small.

5.7 Effect on All Possible Planning to Minimize Harm

The Revised 4(f) Evaluation identified project-specific minimization of harm efforts for Phase I and future phases of the Bonner Bridge Replacement Project (B-2500). Section 5.7 of the Phase IIa EA updated or re-affirmed the impacts and mitigation for Phase I and documented impacts and mitigation for Phase IIa. These findings related to minimizing harm generally have not changed since the release of the Phase IIa EA with the following exceptions: bridge rail design, Refuge parking lot replacement, and replacement or maintenance of access to the Refuge boat ramp. The current status of these mitigation items is as follows:

- Bridge Rail Design – The USFWS, SHPO, FHWA, and NCDOT agreed to a bridge rail with a 36-inch high solid parapet as a Section 7 of the ESA of 1973 conservation measure related to a May Affect, Likely Adversely Affect on protected nesting sea turtles.
- Refuge Parking Lot Replacement – After completion of a new Phase IIa interim bridge (see Section 2.6.2.4), the existing parking lot on the east side of the NC 12 and closest to the Pea Island breach site would be fully removed along with all construction materials, including concrete, asphalt, contaminated soils, and any other material not naturally belonging on the site. A replacement parking lot would be built and the existing kiosk would be relocated or reconstructed at a new site near the northern terminus of the Phase IIb project during Phase IIb construction.
- Refuge Boat Ramp Access or Replacement – Should the Phase IIa Bridge within Existing NC 12 Easement Alternative (selected for implementation in the Phase IIa ROD) be selected for implementation after the completion of a report on a Phase II Extension Alternative and subsequent revised Phase IIa environmental impact documentation, the New Inlet boat ramp/parking lot on the west side of NC 12 would be used for construction staging and be fully restored by NCDOT following construction. An access road with a turnaround would be constructed from the southern terminus of the new Phase IIa bridge to the boat ramp parking lot, within

the existing NC 12 easement to the greatest extent possible. The only part of the completed access road that would be outside the existing NC 12 easement would be part of the intersection of the access road and NC 12.

Table 7 of the Phase IIa EA summarized the measures to minimize harm that are also listed on pages 27 to 34 of the Revised 4(f) Evaluation (pages B-27 to B-34 of the 2010 EA) for Phase I. These commitments have been finalized within the context of the permit application process, including use of Cape Hatteras National Seashore and Refuge land, access to Seashore facilities during construction, impacts to the campground and Oregon Inlet Marina during construction, maintenance of parking access, construction staging, and wetland mitigation. All permits for the construction of Phase I project have been obtained, including Special Use permits from the NPS and Refuge. A portion of Bonner Bridge will be maintained, but at this time to minimize impacts to protected sea turtles, FHWA has agreed that no fishing will be allowed. If and when a decision is made to allow fishing on this part of existing Bonner Bridge, FHWA will initiate Section 7 consultation with NMFS prior to the “no fishing” signs being removed. NCDOT is implementing design and construction mitigation commitments made in the Programmatic Agreement (PA) as amended that was signed by NCDOT, FHWA, SHPO, and ACHP.

To the extent that the specific commitments to minimize harm apply to Phase IIb, they will be implemented by NCDOT and FHWA, including:

- Under Section 106 of the Historic Preservation Act of 1966, stipulations in the PA presented in Appendix D of the 2010 ROD and its 2013 first amendment presented in Appendix E of the Phase IIa ROD, in particular the bridge rail (stipulation #IIA).
- Under Section 7 of the ESA of 1973, commitments included in the Project Commitments contained in this document related to night-time lighting (#11), manatee protection (#12), sea turtle and sawfish protection (#13), and protected species conservation measures (#20, #24, #25, #26, and #27).
- Related to EFH, commitments included in the Project Commitments contained in this document for the protection of SAVs (#3 and #28) and sedimentation and erosion control (#24).
- Related to minimizing impact to the Refuge, the commitment in the Project Commitments contained in this document related to design coordination (#8).

NCDOT plans to minimize harm in relation to the Phase IIb Preferred Alternative (2014B Bridge on New Location Alternative) by:

- Confining bridge approach construction and traffic maintenance to the existing NC 12 easement and limited temporary easements, and confining bridge construction to the new easement from NC 12 to the sound.
- Adhering to the coastal and environmental monitoring commitment through the coastal monitoring program (Project Commitment #17 in the Project Commitments in this revised Phase IIb EA).
- Adhering to permit requirements with respect to dewatering and stormwater discharges (and not pumping to wetlands and beach).
- Minimizing discharge of contaminants and trash.
- Working with USFWS, NMFS, and NCDEQ-DCM to minimize the impacts of the spoil that would be generated from jetting the bridge piles (impacts, water source, and spoil disposal).
- Minimizing temporary wetland impacts to the extent practicable. NCDOT will work with the regulatory agencies on the location and scope of any post-construction monitoring of the temporary wetland impact sites.
- Coordinating with NCDEQ-DWR and other agencies on the bridge stormwater management plan.
- Finalizing with NMFS and other agencies the SAV mitigation plan.
- Completing underwater archeological surveys and coordinating with the Office of State Archaeology on National Register eligibility and avoidance, minimization, and mitigation as needed.
- Coordinating with the Refuge on the parking lot relocation associated with the Phase IIa interim bridge.

Table 9 summarizes impacts and mitigation measures for the Phase IIb detailed study alternatives, and their current implementation status.

In addition to the general commitments listed above and in Table 9 for Phase IIb, FHWA and NCDOT will work with the appropriate agencies to develop and implement specific commitments that may come from planned additional consultation as the Phase IIb design and permit processes progress. Therefore, all possible planning to minimize harm has and will continue to be done for Phase IIb.

Table 9. Phase IIb Impacts, Mitigation Measures, and Current Status

Impacts/Mitigation Measures	Status
General	
Coordination with USFWS will be conducted throughout the final design process.	NCDOT has actively coordinated with USFWS since Hurricane Irene in relation both to temporary repairs to NC 12 and the development of Phase IIa and Phase IIb (see Sections 6.2, 6.3, and 6.4 of the Phase IIa EA, as well as Section 3.6 of the Phase IIa ROD, and Sections 6.2 and 6.3 of this revised Phase IIb EA). Coordination will continue through final design and the permit process.
Use of Refuge Lands	
<u>Bridge on New Location Alternative (all three alignments)</u>	
Total Acres Used	This alternative would have a permanent use of 2.79 acres of Refuge land and a temporary use of 0.63 acre.
Total Acres Returned	19.27 acres of the NC 12 easement would be restored and returned to the Refuge.
<u>Bridge within Existing NC 12 Easement Alternative</u>	
Total Acres Used	This alternative would have no new permanent use of Refuge lands and a temporary use of 2.06 acres.
Total Acres Returned	Not applicable since no permanent use of Refuge lands
Mitigate wetlands acres filled	The permanent wetland impact would be 0.05 acre. No mitigation is required.

6.0 Comments and Coordination

6.1 Public Meetings and Activities

6.1.1 Citizens Informational Workshops for Scoping

As a part of scoping for Phase II, three Citizens Informational Workshops were held in December 2011 and January 2012 to provide the public with an opportunity to review and revisit the alternatives considered in the 2008 FEIS and the 2010 EA for the locations that were later breached by Hurricane Irene (Pea Island and Rodanthe) and to obtain scoping feedback from the public regarding ideas, thoughts, and suggestions about those alternatives and other alternatives that might be considered. A summary of these workshops is presented in Section 6.1.1 of the Phase IIa EA, beginning on page 6-1.

6.1.2 Phase IIa Public Hearings

Three Combined (Corridor and Design) Public Hearings were held on:

- March 11, 2013 at the Dare County Administration Building in Manteo.
- March 12, 2013 at the Rodanthe-Waves-Salvo Community Center in Rodanthe.
- March 13, 2013 at the Ocracoke Community Center in Ocracoke.

The primary purpose of the public hearings was to receive public comment on the findings of the 2013 Phase IIa EA. Each public hearing used an informal open-house format with no formal presentation. Opportunities were provided for making both oral and written comments. The same project information was presented at all three meetings. A total of approximately 382 people attended the hearings.

The public hearings updated the public on the status of the project since the release of the 2010 ROD and presented the Preferred Alternative for long-term improvements in the Pea Island breach area (Phase IIa). A slideshow and handouts were provided. The meeting room included multiple stations where project staff responded to questions and comments from the public. The primary station focused on the proposed Phase IIa Preferred Alternative design (Selected Alternative in the Phase IIa ROD). In anticipation of a high level of public interest, informational stations on other aspects of NC 12 were also provided, including: the status of Phase IIb (now the focus of this revised Phase IIb EA), the status of the Oregon Inlet Bridge replacement (Phase I), other future NC 12 improvement projects south of Rodanthe, and ferry service. Other stations included a social media table and an area to submit comments.

The public comment period for the Phase IIa EA ended March 28, 2013. A total of 4,209 comments were received during the comment period; in addition, a petition was received containing 1,700 signatures. The comments covered a range of issues,

including the need for the project, the proposed new bridge at Pea Island breach (Phase IIa Preferred Alternative), the long-term plans at Rodanthe, other needs along NC 12, and recreational use of the area. There also were comments about whether a long bridge (either a Pamlico Sound Bridge [Bodie Island to Rodanthe] or a bridge from the mainland or Roanoke Island to Rodanthe) should be considered. NCDOT received 150 individual written comments, and one oral comment was recorded during the public hearings. Most comments received were form e-mails sent at the request of either the Defenders of Wildlife in opposition to the project (1,597) or The Citizens Action Committee to Replace the Herbert C. Bonner Bridge in favor of the project (2,461). The North Carolina Conservation Network submitted a petition in opposition to the project containing 1,700 signatures. Many of the form emails included additional comments explaining the commenter's position. Of the 4,209 comments received, most comments expressed support for a long-term solution for NC 12, although they offered differing opinions about what the solution should be.

A full discussion of and response to comments received from members of the public, in addition to comments received from non-governmental organizations and from federal and state environmental resource and regulatory agencies are presented in the Phase IIa ROD. Public comments and responses related directly to Phase IIb are repeated in Appendix C of this revised Phase IIb EA in Section C.3.

6.1.3 2013 Phase IIb Public Hearings

Three Combined (Corridor and Design) Public Hearings were held on:

- January 7, 2014 at the Ocracoke Community Center in Ocracoke.
- January 8, 2014 at the Rodanthe-Waves-Salvo Community Center in Rodanthe and Cape Hatteras Secondary School in Buxton.
- January 9, 2014 at the Dare County Administration Building in Manteo.

The primary purpose of the public hearings was to receive public comment on the long-term improvements to NC 12 within the southern part of the Refuge and northern part of Rodanthe. The public hearing in Ocracoke used an informal open-house format with no formal presentation. The public hearing in the Rodanthe area consisted of an open house in Rodanthe followed by a formal presentation in Buxton. The hearing in Manteo was an open house followed by a formal presentation. Opportunities were provided for making both oral and written comments. Citizens were able to comment and ask questions following the two formal presentations and the opportunity to record oral comments was provided in Ocracoke. The same project information was presented at all three meetings. A total of approximately 218 people attended the hearings.

The public hearings presented detailed study alternatives for long-term improvements in the Phase IIb project area. A slideshow and handouts were provided. The meeting

room included multiple stations where project staff responded to questions and comments from the public. The primary station focused on the proposed Phase IIb detailed study alternatives, including hearing maps and visualizations. In anticipation of a high level of public interest, informational stations on other NC 12 projects and concerns were also provided, including: the status of NC 12 Pea Island long-term improvements (Phase IIa), the status of the Oregon Inlet Bridge replacement (Phase I) and Bonner Bridge repairs, other future NC 12 improvement projects south of Rodanthe, and right-of-way acquisition. Other stations included a social media table and an area to submit comments.

The public comment period for Phase IIb ended January 24, 2014. A total of 91 comments were received during the comment period; in addition, three petitions were received. Commenters expressed their preferences for one of the detailed study alternatives (the Bridge within Existing NC 12 Easement Alternative and the Bridge on New Location Alternative) or expressed a preference for another solution.

A full discussion of and response to comments received from members of the public, in addition to comments received from non-governmental organizations and from federal and state environmental resource and regulatory agencies are presented in Appendix F.

6.1.4 Newsletters

NCDOT issued a Bonner Bridge Update newsletter in February 2013. The newsletter was mailed to everyone on the Bonner Bridge Replacement Project's (B-2500) mailing list, which includes Hatteras Island property owners, individuals on the Refuge's mailing list, and individuals who attended past Citizens Informational Workshops. This newsletter discussed the availability of the Phase IIa EA and described the Preferred Alternative (Bridge within Existing NC 12 Easement Alternative) in the Pea Island breach area. The newsletter also informed the public of the public hearings that were scheduled to be held March 11, 12, and 13, 2013, and indicated how to contact the study team, including the toll-free telephone number (see below). A copy of this newsletter is included in Appendix B.

NCDOT issued an additional Bonner Bridge Update newsletter in December 2013. It also was mailed to the mailing list described in the previous paragraph. This newsletter discussed the availability of the 2013 Phase IIb EA and described the then Preferred Alternative (Bridge within Existing NC 12 Easement Alternative). The newsletter also informed the public of the public hearings that were scheduled to be held January 7, 8, and 9, 2014, and indicated how to contact the study team, including the toll-free telephone number (see below). A copy of this newsletter also is included in Appendix B.

Another newsletter will be mailed prior to planned public meetings regarding this revised Phase IIb EA.

6.1.5 Toll-Free Telephone Number

The project's toll-free telephone number was provided in the February 2013 and December 2013 newsletters. It is answered by a senior member of NCDOT's consultant team (led by Parsons Brinckerhoff), and provides a means for citizens to obtain answers to questions about the Bonner Bridge Replacement Project (B-2500) and to make individual comments at any time during the study. The phone number is 1-866-803-0529, and it has been available throughout the 2005 SDEIS, 2007 SSDEIS, 2008 FEIS, 2010 EA, 2010 ROD, Phase IIa EA, Phase IIa ROD, 2013 Phase IIb EA, and revised Phase IIb EA preparation portions of the study. This toll-free telephone number will continue to be open at least until the NEPA process associated with Phase IIb and any future Phase IIa studies is completed.

6.1.6 Web Sites

The newsletter provided a web site and social media resources by which those interested could view information about the damage to NC 12 caused by Hurricane Irene, Hurricane Sandy, and other storm events as well as NCDOT's efforts to temporarily restore NC 12 to service. The web sites and other social media resources are:

- NC 12 Rodanthe Bridge Web Site – <http://www.ncdot.gov/projects/NC12Rodanthe/>
- Bonner Bridge Phase II Project Documents Web Site (including Rodanthe Bridge documents)-- <http://www.ncdot.gov/projects/bonnerbridgephase2/documents.html>
- NC 12 Projects Web Site – <http://www.ncdot.gov/nc12/>. (Note that this web page includes links to all NC 12-related NCDOT projects, including the Phase II link above and a link to information on Phase I, the new Oregon Inlet bridge.)
- NC 12 Twitter Feed – http://twitter.com/NCDOT_NC12
- NC 12 Facebook Page – <https://www.facebook.com/NCDOTNC12>

6.2 NEPA/Section 404 Merger Team Meetings and Outcomes

The NEPA/Section 404 Merger Process is a streamlining effort that helps to avoid duplication of effort between the NEPA and the Clean Water Act Section 404 processes, since USACE must meet the requirements of NEPA in order to issue a dredge and fill permit under the Clean Water Act. Stakeholders can reach concurrence or agreement; or the Merger Process also may involve instances of non-concurrence or abstention.⁶ The

⁶ The Merger Process guidelines define abstention as follows: "... abstain means that a team member does not actively object to a concurrence point but the agency representative does not

goal of the Merger Process is to obtain stakeholder concurrence on key issues during the NEPA study so that those decisions do not need to be revisited during application for a USACE permit. The current Merger Team members are: NCDOT; FHWA; USACE; USEPA; USFWS (Raleigh Office); USFWS (Refuge); NMFS; NPS—Cape Hatteras National Seashore; NCDEQ-DCM; NCDEQ-DWR; NCWRC; NCDNCR-SHPO; and the Albemarle Rural Planning Organization (RPO). USCG is not a signatory member, but is sent information before and following all NEPA/Section 404 Merger Team meetings.

The Merger Process includes the following concurrence points:

1. Concurrence on purpose and need;
2. Concurrence on the alternatives to be evaluated in detail in the environmental document;
 - 2A. Concurrence on the approximate length of any proposed bridges to minimize impacts to wetlands and streams, and preliminary alignment review for each detailed study alternative;
3. Concurrence on the Least Environmentally Damaging Practicable Alternative (LEDPA);
 - 4A. Concurrence that all efforts were made to avoid and minimize harm to USACE jurisdictional resources (streams and wetlands) to the maximum extent practicable;
 - 4B. Concurrence on the 30 percent complete hydraulic design; and
 - 4C. Concurrence on permit drawings after the hydraulic design is complete and prior to Section 404 permit application.

For more details on the Merger Process, see Section 8.3.1 of the 2008 FEIS.

The following Merger Team Meetings have been held to date for Phase II of the Bonner Bridge Replacement Project (B-2500):

- August 31, 2011 Merger Team Meeting: This meeting was held to determine issues and discuss response strategies for the emergency repair of the damage caused by

sign the concurrence point form. The process may continue and the agency representative agrees not to revisit the concurrence point. Written justification for abstaining from a concurrence point should be provided to the project team within 5 days of the concurrence meeting.”

Hurricane Irene to NC 12 on Hatteras Island in order to re-open NC 12 to traffic as early as possible.

- October 18, 2011 Merger Team Meeting: This was an informational/scoping meeting for Phase II. The purpose of the meeting was for NCDOT to inform the Merger Team members about the start of the Phase II studies of long-term repairs at the two areas along NC 12 that were breached by Hurricane Irene in August 2011 (i.e., Pea Island breach and Rodanthe). Agency representatives were asked to provide scoping comments related to impact issues and alternatives related to the two breach sites prior to NCDOT's initiation of these studies.
- December 15, 2011 Merger Team Meeting: This meeting was the initial Concurrence Point (CP) 2/2A meeting for Phase II of the Bonner Bridge Replacement Project (B-2500). The purposes of the meeting were to determine the alternatives to be studied in detail (CP 2) for Phase II at the two breach areas (i.e., Pea Island breach and Rodanthe), as well as to discuss any additional bridging decisions associated with the detailed study alternatives (CP 2A).
- March 21, 2012 Merger Team Meeting: The purpose of this meeting was for the Merger Team to discuss consensus on CP 2/2A, 3, and 4A for the Phase IIa project and CP 2/2A for the Phase IIb project. Concurrence was not reached at this meeting. Further studies were undertaken to address concerns raised by USACE and other merger team members. The USACE indicated that NCDOT needed to complete a re-evaluation of the cost of the Pamlico Sound Bridge Corridor to determine if the conclusion reached in the 2010 EA – that this alternative was not practicable from the perspective of Section 404 of the Clean Water Act or feasible and prudent from the perspective of Section 4(f) of the Department of Transportation Act of 1966 – remained valid. Also discussed with the Merger Team was the agreement at the December 15 Merger Team meeting to look at the merits of a Seven-Mile Bridge, as suggested by USFWS, that would address both parts of the Phase II study area.
- May 16, 2012 Merger Team Meeting: The purpose of the meeting was informational. NCDOT discussed with the Merger Team agencies, and received feedback regarding, a design for NCDOT's proposed Preferred Alternative for Phase IIa. The design issues discussed would likely affect the permit applications for the proposed project and would apply to the Phase IIb detailed study alternatives. These issues include the use of temporary construction easements, utility placement, and use of retaining walls, jetting, and other design-related issues.
- November 14, 2012 Merger Team Meeting: This meeting occurred after the completion of additional studies requested at the March 21, 2012 meeting. The updated cost analysis requested was completed in October 2012. The analysis reaffirmed that NCDOT is unable to fund a Pamlico Sound bridge. The USACE indicated their agreement with this conclusion at a meeting between NCDOT,

FHWA, and USACE on October 29, 2012. At the November Merger Team meeting, FHWA, NCDOT, USACE, NCDENR-DWR, NCDNCR-SHPO, and NCDEQ-DCM signed the Phase IIa concurrence forms for CP2, CP2A, and CP3, as well as the Phase IIb concurrence form for CP2A. USEPA, USFWS, USFWS-Refuge, NMFS, NPS, NCDEQ-DMF, and NCWRC abstained. Issues related to CP4A were also discussed. Concurrence was reached at this meeting that the Bridge within Existing NC 12 Easement Alternative would be the sole detailed study alternative and LEDPA for Phase IIa, and that the detailed study alternatives analyzed for Phase IIb: would be the Bridge on New Location Alternative and the Bridge within Existing NC 12 Easement Alternative. Prior to this merger meeting, NCDOT met with FHWA and USACE on October 29, 2012 to discuss the re-evaluation of alternatives for Phase II, including the financial feasibility of the Pamlico Sound Bridge Corridor.

- January 30, 2013 Merger Team Meeting: This meeting was held in order to finalize concurrence on CP4A and to discuss CP4B and CP4C for Phase IIa. All members of the Merger Team signed the CP4A concurrence form except for USEPA, which abstained.
- July 25, 2013 Merger Team Meeting: NCDOT met with members of the Merger Team to discuss potential mitigation for impacts in the Refuge with the Bridge on New Location Alternative for Phase IIb. The USFWS-Refuge had indicated that the Bridge on New Location Alternative likely could be considered a minor modification of the existing NC 12 easement. It was stated that NCDOT and USFWS have agreed that the section of existing NC 12 easement that is bypassed by the Bridge on New Location Alternative would be restored and returned to the Refuge as mitigation. NCDOT noted that in previous mitigation discussions with the Refuge, an idea also had been proposed by the Refuge to “nourish” the estuarine (soundside) shoreline in order to build up and support the natural migration of Hatteras Island. The following concerns were raised by Merger Team members regarding this idea: it would impact SAV habitat, it would be costly and risky in terms of unknown benefits and impacts, and it was not needed from a USACE jurisdictional impacts perspective. The Merger Team agreed that a soundside nourishment program could be considered as an option for disposal of jetting spoils, but only after further coordination with the appropriate agencies. The Refuge representative urged NCDOT to “think outside the box” on means that might be used in the context of the Phase IIb project to facilitate accretion on the sound side of Hatteras Island.
- September 11, 2014 Merger Team Meeting: The purpose of this meeting was informational. Updates on the status of Phase IIb were provided and the Merger Team reviewed the detailed study alternatives under consideration, including two new alignments for the Bridge on New Location Alternative. A potential future extension concept for the Phase IIb Bridge on New Location Alternative was

discussed. The concept included a bridge from the north end of the Phase IIb Bridge on New Location Alternative to the northern end of the Phase IIa project area.

- July 15, 2015 Merger Team Meeting: NCDOT met with members of the Merger Team to discuss the proposed SAV mitigation for Phase I of B-2500.
- June 17, 2015 Merger Team Meeting: The purpose of this meeting was to reach concurrence on the LEDPA for Phase IIb. The Merger Team concurred that the LEDPA for Phase IIb was the 2014B Bridge on New Location Alternative. All members of the Merger Team signed the CP3 concurrence form. In concurring, the USFWS-Refuge representative indicated that in terms of use of Refuge land by NC 12, the Bridge on New Location Alternative would be a net benefit to the Refuge. The NCDEQ-DWR also concurred, but noted that stormwater runoff mitigation should be addressed during the permit process. The NMFS concurred with the understanding that the SAV and EFH impact would be mitigated.
- January 14, 2016 Merger Team Meeting: The purpose of this meeting was to reach concurrence on avoidance and minimization measures associated with the LEDPA. The Merger Team concurred with one abstention that impacts to jurisdictional resources and other community, cultural, and natural resources have been avoided and minimized to the extent practicable in the design of the 2014B Bridge on New Location alignment, selected as the LEDPA at the June 17, 2015 CP3 meeting. Further, the Project's Merger Team concurred that the following avoidance, minimization, and mitigation items will continue to be pursued as project development advances:
 - Section 404 Avoidance and Minimization – Minimize temporary wetland impacts to the extent practicable. NCDOT will work with the regulatory agencies on the location and scope of any post-construction monitoring of any temporary wetland impact sites.
 - Other Resource Avoidance and Minimization
 - Coordinate with the NCDEQ-DWR and other agencies on the bridge stormwater management plan.
 - Regarding SAV's, any avoidance, minimization, and mitigation issues will be resolved with the NEPA/404 Merger Team prior to final permit application.
 - Complete underwater archeological surveys and coordinate with the Office of State Archaeology on National Register eligibility and avoidance, minimization, and mitigation as needed.
 - Coordinate with the Refuge on the parking lot relocation.

- Following completion of new bridge construction, NCDOT will return the portion of the existing NC 12 easement within the Refuge not needed for transportation purposes to the USFWS – Refuge.

The summaries and concurrence forms for the meetings through November 14, 2012 were presented in the Phase IIa EA in Appendix A. The summary and the concurrence form for the meeting on January 20, 2013 were presented in Appendix D of the Phase IIa ROD. The summaries of the July 25, 2013, September 11, 2014, July 15, 2015, June 17, 2015, and January 14, 2016 meetings, as well as the concurrence forms from the June 17, 2015 and January 14, 2016 meetings, are included in Appendix A of this revised Phase IIb EA. Summaries of additional meetings held with various agencies are included in Section 6.2 of the Phase IIa EA (beginning on page 6-3) and in Section 3.6 of the Phase IIa ROD (beginning on page 25).

6.3 Endangered Species Act Consultation

As a part of finalizing the Phase II alternatives for implementation, including the Phase IIb project that is the subject of this revised Phase IIb EA, FHWA has consulted with USFWS and NMFS in compliance with Section 7 of the ESA of 1973.

During the planning and permitting processes for Phase I and IIa, NCDOT coordinated with the USFWS and SHPO regarding specific design and construction issues, in keeping with the existing Section 7 and Section 106 agreements. To minimize impacts to nesting sea turtles, NCDOT has committed (based on letters received from USFWS dated January 22, 2013 and August 14, 2014) to using approved lighting sources during construction of bridges within the Refuge, which include either white or amber-colored LED lights (preferred) or low-pressure sodium-vapor lights. Additionally, NCDOT, FHWA, USFWS, and SHPO agreed to a bridge rail design that is intended to shield sea turtle hatchlings from car headlights on bridges. The bridge rail design is illustrated in Figure 3 of the Phase IIa EA. The lighting and bridge rail commitment would apply to the Phase IIb detailed study alternatives, including the Preferred Alternative. The railing design would be reviewed by USFWS and SHPO in compliance with the commitments. FHWA also has completed formal consultation with NMFS on potential impacts to sturgeon and sea turtles. Formal consultation concluded with the receipt of a letter from NMFS on September 30, 2013 (see Appendix D of the Phase IIa ROD).

Section 7 consultation was reinitiated with USFWS in December 2014 to account for the listing of the rufa red knot as a federally threatened species. USFWS issued an addendum to their July 2008 Biological Opinion in a letter dated February 9, 2015. It included a non-jeopardy opinion. NCDOT agreed to avoid disturbing foraging and roosting rufa red knots and avoid or minimize opportunities for avian predator perches, as previously agreed to for the piping plover.

Additional consultation with the USFWS and NMFS related to the Phase IIb Preferred Alternative under Section 7 is ongoing and will be completed prior to the completion of the NEPA process.

6.4 Essential Fish Habitat Coordination

As a part of finalizing the Phase II alternatives for implementation, including Phase IIb, FHWA has coordinated with NMFS regarding EFH. The Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq.) requires federal agencies to consult with the US Secretary of Commerce on all actions or proposed actions authorized, funded, or undertaken by the agency that might adversely affect EFH. This is done through NMFS. NMFS is represented on the NEPA/Section 404 Merger Team. As part of on-going coordination with NMFS for Phase IIb, NCDOT is developing an EFH Assessment Addendum. This report focuses on the potential for EFH impacts associated with the Bridge on New Location Alternative (all three alignments), which was not evaluated in the 2008 EFH Assessment, but is similar to the Bridge South component of the Road North/Bridge South alternative evaluated in the 2008 FEIS. The Bridge within Existing NC 12 Easement Alternative, which was considered as a part of the Phased Approach Alternative in the 2008 EFH Assessment, also is addressed. In the Phase IIb project area (the southern end of the Refuge and the Rodanthe area), there has been no substantial change in EFH habitat since the 2008 FEIS. While Hurricane Irene created a breach in the Rodanthe area in August 2011, the breach was filled by NCDOT and no new EFH was established in this area.

At a meeting in February 2014, NCDOT and FHWA reviewed the 2014A and 2014B Bridge on New Location Alternative alignments with the NMFS and USFWS-Refuge. NMFS agreed that the 2014B alignment was preferable to the 2013 alignment, but requested more information on the SAV impacts. On December 2, 2014, NCDOT and FHWA met with NMFS to review the results of a 2014 SAV survey for the 2014B alignment. NMFS agreed, based on these survey results, that they could support the 2014B alignment as the LEDPA. SAV mitigation for Phase I was discussed with members of the Merger Team, including NMFS representatives, on July 15, 2015. At the June 17, 2015 Merger Team meeting, NMFS concurred that the 2014B alignment was the LEDPA with the understanding that the SAV and EFH impact would be mitigated. NCDOT discussed SAV and EFH mitigation for the 2014B alignment at a meeting with NMFS on December 1, 2015. Detail on mitigation plans as of December 1, 2015 is presented in Section 4.2.5.5.

Additional coordination with NMFS related to the Phase IIb Preferred Alternative under the Magnuson-Stevens Fishery Conservation and Management Act is ongoing and will be completed prior to the completion of the NEPA process.

6.5 National Historic Preservation Act Coordination

Section 106 of the National Historic Preservation Act of 1966 as amended (16 U.S.C. § 470f) affords consideration of those properties that are listed or eligible for listing in the NRHP. The Phase IIb detailed study alternatives are similar in characteristics to alternatives previously described in the 2008 FEIS and in the 2010 EA; the Bridge within Existing NC 12 Easement Alternative is similar to the Phased Approach/Rodanthe Bridge Alternative, and the Bridge on New Location Alternative is similar to the Bridge South component of the Road North/Bridge South Alternative. Both of the Phase IIb detailed study alternatives would have an Adverse Effect on the NRHP-eligible Refuge. The nature of the Adverse Effect is the visual impact on the historic landscape of the Refuge. This impact is described in Section 4.2.3 of this revised Phase IIb EA.

As discussed in Project Commitment #23 in the Project Commitments presented in this revised Phase IIb EA, FHWA, SHPO, ACHP, and NCDOT, along with the consulting parties (Dare County, the North Carolina Aquarium Society, USFWS, NPS, and the Chicamacomico Historical Association), developed a Programmatic Agreement (PA) stipulating measures that FHWA will ensure are carried out during the design and construction of the PBC/TMP Alternative to mitigate adverse impacts to the historic cultural resources. NCDOT, FHWA, ACHP and SHPO signed the Programmatic Agreement (PA) on historic resource impacts and mitigation in November 2010 (see Appendix D of the 2010 ROD). It was amended in 2013 to include a final agreement on the characteristics of bridge rails in the Refuge for Phases I and IIa (see the paragraph at the end of this section). NCDOT is in the process of fulfilling the commitments made in the PA, as amended. The PA is applicable to the entire Project, and Stipulation #VI of the PA requires further consultation for future phases if there is:

- A change in the historic status of properties.
- Identification of a new alternative.
- Change in an existing alternative that would result in a different “effects determination” for a historic property.
- Selection of a new Preferred Alternative.

None of these conditions apply to Phase IIb or to its current setting. A representative of SHPO (from NCDNCR), who serves on the NEPA/Section 404 Merger Team, concurred with the detailed study alternatives and the LEDPA for Phase IIb (2014B Bridge on New Location Alternative).

Stipulation #IIA of the PA discusses bridge design within the Refuge, in particular the design of the bridge rail. In accordance with this stipulation, further coordination about the bridge rail occurred in 2013 between NCDOT, USFWS, NPS, and SHPO. The

agencies agreed on a parapet design of 30 inches high for Phase I and a maximum 36-inch high parapet for the bridge railing through the Refuge with Phase IIa, which shields sea turtle hatchlings from headlight glare. This agreement resulted in the amendment to the PA presented in Appendix E of the Phase IIa ROD. NCDOT has also agreed to use a 36-inch bridge rail parapet with Phase IIb.

6.6 List of Agencies, Organizations, and Persons to Whom Copies of the Environmental Assessment are Sent

The agencies and interest groups listed below will be sent a copy of this revised Phase IIb EA with a request for comments. Most of these agencies and interest groups also were sent a copy of the 2008 FEIS, 2010 EA, 2010 ROD, Phase IIa EA, Phase IIa ROD, and the 2013 Phase IIb EA. Those marked with an asterisk submitted comments on the 2013 Phase IIb EA. The availability of the revised Phase IIb EA will be announced via a newsletter sent to those on the project’s mailing list and in advertisements within local media outlets. The revised Phase IIb EA also will be available on the project web site (<http://www.ncdot.gov/projects/bonnerbridgephase2/>). Public meetings will be held to gather additional comments on the revised Phase IIb EA. Comments on the revised Phase IIb EA will be addressed in subsequent documentation.

Federal Agencies

Advisory Council on Historic Preservation	US Department of Health and Human Services
Federal Emergency Management Agency	US Department of Housing and Urban Development
US Army Corps of Engineers	US Department of the Interior—Office of the Secretary*;
US Coast Guard—5th District	US Fish and Wildlife Service (Pea Island National Wildlife Refuge and Raleigh Field Office)*;
US Department of Agriculture—Natural Resources Conservation Service	Keeper of the National Register; and National Park Service (Cape Hatteras National Seashore)
US Department of Commerce—National Oceanic and Atmospheric Administration—National Marine Fisheries Service*	US Environmental Protection Agency, Region IV (Environmental Review Branch)*

State Agencies

<p>North Carolina Department of Administration—State Clearinghouse and State Publications Clearing House (State Library)</p> <p>North Carolina Department of Crime Control and Public Safety, Division of Emergency Management*</p> <p>North Carolina Department of Natural and Cultural Resources—Division of Archives and History; State Historic Preservation Office*</p>	<p>North Carolina Department of Environmental Quality—Division of Air Quality; Division of Coastal Management*; Division of Land Resources; Division of Marine Fisheries; Division of Parks and Recreation; Division of Water Resources*; Washington Regional Office*</p> <p>North Carolina Wildlife Resources Commission*</p>
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Local Governments and Agencies

<p>Albemarle Regional Planning and Development Commission (Albemarle Rural Planning Organization)</p> <p>County of Dare—Chair, Dare County Commissioners*; Dare County Manager; Emergency Management Agency</p> <p>Mayor of Duck</p> <p>Mayor of Kill Devil Hills</p>	<p>Mayor of Kitty Hawk</p> <p>Mayor of Manteo</p> <p>Mayor of Nags Head</p> <p>Mayor of Southern Shores</p> <p>Oregon Inlet and Waterways Commission</p>
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Local Interest Groups

<p>Audubon North Carolina</p> <p>Carolina Electric Cooperatives</p> <p>Center for Biological Diversity</p> <p>Citizens Action Committee to Replace Herbert C. Bonner Bridge*</p> <p>Coastal Wildlife Refuge Society</p> <p>Conservation Council of North Carolina</p> <p>Dare County Tourist Bureau</p>	<p>Defenders of Wildlife</p> <p>Eastern Surfing Association, Outer Banks District</p> <p>Environmental Defense Fund</p> <p>Hatteras Village Civic Association</p> <p>Hatteras Island Property Management Group*</p> <p>National Parks Conservation Association</p>
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North Carolina Coastal Federation
North Carolina Fisheries Association
Outer Banks Chamber of Commerce
Pamlico – Tar River Foundation
Sierra Club, North Carolina Chapter
Southern Albemarle Association

Southern Appalachian Biodiversity
Project
Southern Environmental Law Center*
Surfrider Foundation, Outer Banks
Chapter*

Public Review Locations

Dare County Libraries in Hatteras
Village, Kill Devil Hills, and Manteo,
North Carolina
Dare County Planning and Inspections
Satellite Office in Frisco, North Carolina

Fessenden Recreation Center in Buxton,
North Carolina
NCDOT Resident Engineer’s Office in
Manteo, North Carolina
Ocracoke School and Community
Library in Ocracoke, North Carolina

7.0 Conclusion

This revised Phase IIb Environmental Assessment (EA) documents changes associated with the Bonner Bridge Replacement Project (B-2500), as well as changes to the project environment, as they relate to the planned Phase IIb.

- From the analysis contained in Chapter 4.0, FHWA believes that the Phase IIb detailed study alternatives, including the Preferred Alternative (2014B Bridge on New Location), do not result in new, significant impacts to the human and natural environments not previously identified in the 2008 FEIS, 2010 EA, and 2013 Phase IIb EA. This is the case because these alternatives represent portions of the Road North/Bridge South, All-Bridge, and Phased Approach alternatives assessed in their entirety in the 2008 FEIS and 2010 EA.
- From the analysis contained in Chapter 5.0, FHWA believes that the conclusions in the 2009 Revised Final Section 4(f) Evaluation (included as Appendix B in the 2010 EA) remain valid for the PBC/TMP Alternative and the analysis in Chapter 5.0 does not suggest any new, significant impacts not previously identified in the 2008 FEIS, 2010 EA, Phase IIa EA, and 2013 Phase IIb EA. It also concludes that the 2014B Bridge on New Location Alternative (preferred) would offer the least overall harm. In reaching this conclusion, FHWA and NCDOT considered the assessment of the least harm to the Refuge both as a historic resource and a wildlife refuge in Factor #4; the views of official(s) with jurisdiction over the management of the Refuge, SHPO, USFWS under Section 7 of the Endangered Species Act, and the NMFS and FMCs under Magnuson-Stevens Fishery Conservation and Management Act; and comments on the 2013 Phase IIb EA from residents, business owners, property owners of the section of Rodanthe affected, and other members of the public.

Based on this analysis and in coordination with state and federal environmental resource and regulatory agencies, FHWA believes that the changes identified and assessed in this revised Phase IIb EA for the Phase IIb detailed study alternatives, including the Preferred Alternative (2014B Bridge on New Location Alternative), would not result in new, significant impacts not previously identified in the 2008 FEIS, 2010 EA, 2010 ROD, Phase IIa EA, or 2013 Phase IIb EA.

FHWA now seeks input on the content and tentative conclusions identified in this revised Phase IIb EA. Once public and agency input have been received and considered, FHWA will determine whether a Supplemental EIS will be prepared.

8.0 List of References

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- North Carolina Department of Transportation. 2013. *Air Quality Analysis, NC 12 Long-Term Improvements in Rodanthe, Dare County*.
- North Carolina Department of Transportation. 2013. *Traffic Noise Analysis, NC 12 Long-Term Improvements in Rodanthe, Dare County*.
- Overton, M. F. January 2013. *Coastal Monitoring Program, NC 12 Transportation Management Plan, TIP Project B-2500, 2015 Update*. Prepared for the North Carolina Department of Transportation.
- Overton and Fisher. June 2005. *Parallel Bridge Corridor with NC 12 Maintenance – Shoreline Change and Stabilization Analysis*. Prepared for the North Carolina Department of Transportation.

Appendix A

**NEPA/404 Concurrence
Forms, Merger Team Meeting
Minutes, and Agency
Correspondence**

A. NEPA/404 Concurrence Forms, Merger Team Meeting Minutes, and Agency Correspondence

NEPA/404 CONCURRENCE FORMS

Concurrence Point 2 And 2A Signed Form	A-2
Concurrence Point 3 Signed Form	A-3
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MERGER TEAM MEETING MINUTES

February 25, 2013 Merger Team Meeting Minutes	A-11
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June 17, 2014 Merger Team Meeting Minutes	A-32
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CORRESPONDENCE WITH NORTH CAROLINA DIVISION OF COASTAL MANAGEMENT REGARDING CONCURRENCE POINT 3.....	A-56
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CORRESPONDENCE WITH PEA ISLAND NATIONAL WILDLIFE REFUGE REGARDING PHASE IIB MINOR MIFICATION	A-57
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**Section 404/NEPA Merger Project Team Agreement
 Concurrence Point No. 2: Alternatives to be Studied in Detail and
 Concurrence Point 2A: Bridging Decisions and Alignment**

Project No./TIP No./Name/Description:

Federal Project Number: BRS-2358(15)

WBS No.: 32635

TIP Project Number: B-2500B

Description: Replacement of the Herbert C. Bonner Bridge (Bridge No. 11) over Oregon Inlet in Dare County (Phase II of the Parallel Bridge Corridor with NC 12 Transportation Management Plan)

The Project's Merger Team has concurred on this date of October 24, 2012 that the following alternatives will be evaluated further for the Rodanthe breach component of Phase II of the subject project:

- Bridge on New Location
- Bridge within Existing NC 12 Easement

USACE William J. Billmore

NCDOT Elizabeth A. Smyre

USEPA Abstain OK

USFWS Abstain df

NCDWQ Paul Wang

NCWRC Abstain SW

SHPO Renee Medkell-Earley

FHWA Clarence W. Cole, Jr.

NMFS Abstain FR

NCDMF Abstain Kit

NPS Abstain TB

NCDCM Joseph V. Haggitt

USFWS-PINWR Abstain AS

**Section 404/NEPA Merger Project Team Agreement
Concurrence Point No. 3: Least Environmentally Damaging
Practicable Alternative**

Project No./TIP No./Name/Description:

Federal Project Number: BRNHF-0012(56)

WBS No.: 32635

TIP Project Number: **B-2500B**

Description: **NC 12- Rodanthe Breach Long-Term Improvements (Phase IIb of the Bonner Bridge Replacement Project), Dare County**

The Project's Merger Team has concurred on this date of June 17, 2015 that the following alternative is the Least Environmentally Damaging Practicable Alternative for the subject project:

- Bridge on New Location Alternative (2014B Alignment)

USACE Tracy Wheel NCDOT B. [Signature]

USEPA Cynthia F. Vander Weide USEWS [Signature]

NCDWR [Signature] NCWRC [Signature]

SHPO Rene Mackill-Early FHWA [Signature]

NMFS Fitz White RPO _____

NPS _____ NCDCM [Signature]

USFWS-PINWR [Signature]

**Section 404/NEPA Merger Project Team Agreement
Concurrence Point No. 3: Least Environmentally Damaging
Practicable Alternative**

Project No./TIP No./Name/Description:

Federal Project Number: BRNHF-0012(56)

WBS No.: 32635

TIP Project Number: **B-2500B**

Description: **NC 12- Rodanthe Breach Long-Term Improvements (Phase IIb of the Bonner Bridge Replacement Project), Dare County**

The Project's Merger Team has concurred on this date of June 17, 2015 that the following alternative is the Least Environmentally Damaging Practicable Alternative for the subject project:

- Bridge on New Location Alternative (2014B Alignment)

USACE _____

NCDOT _____

USEPA _____

USFWS _____

NCDWR _____

NCWRC _____

SHPO _____

FHWA _____

NMFS _____

RPO _____

NPS How Thompson NCDCM _____

USFWS-PINWR _____

Section 404/NEPA Merger Project Team Agreement Concurrence Point No. 3: Least Environmentally Damaging Practicable Alternative

Project No./TIP No./Name/Description:

Federal Project Number: BRNHF-0012(55)

WBS No.: 32635

TIP Project Number: B-2500E

Description: NC 12- Rodanthe Breach Long-Term Improvements (Phase IIb of the Bonner Bridge Replacement Project), Dare County

The Project's Merger Team has concurred on this date of June 17, 2015 that the following alternative is the Least Environmentally Damaging Practicable Alternative for the subject project:

- Bridge on New Location Alternative (2014B Alignment)

USACE _____

NCDOT _____

USEPA _____

USFWS _____

NCDWR _____

NCWRC _____

SHPO _____

FHWA _____

NMFS _____

RFO *Gela M. Welsh*

NPS _____

NCDCM _____

NEPA/404 Merger Project Team Meeting Agreement Concurrence Point No. 4A: Avoidance and Minimization

Project No./TIP No./Name/Description:

Federal Project Number: BRNHF-0012(56)

WBS No.: 32635

TIP Project Number: B-2500B

Description: **NC 12- Rodanthe Breach Long-Term Improvements (Phase IIb of the Bonner Bridge Replacement Project), Dare County**

Avoidance and Minimization: The Project's Merger Team has concurred on this date of January 14, 2016 that impacts to jurisdictional resources and other community, cultural, and natural resources have been avoided and minimized to the extent practicable in the design for the 2014B Bridge on New Location alignment that was selected as the LEDPA at the June 17, 2015 Concurrence Point No. 3 meeting. Further, the Project's Merger Team concurs that the following avoidance, minimization, and mitigation items will continue to be pursued as project development advances:

- Section 404 Avoidance and Minimization
 - Minimize temporary wetland impacts to the extent practicable. NCDOT will work with the regulatory agencies on the location and scope of any post-construction monitoring of any temporary wetland impact sites.
- Other Resource Avoidance and Minimization
 - Coordinate with the NCDEQ-DWR and other agencies on the bridge stormwater management plan.
 - Regarding SAV's, any avoidance, minimization, and mitigation issues will be resolved with the NEPA/404 Merger Team prior to final permit application.
 - Complete underwater archeological surveys and coordinate with the Office of State Archaeology on National Register eligibility and avoidance, minimization, and mitigation as needed.
 - Coordinate with the Refuge on the parking lot relocation.
 - Following completion of new bridge construction, NCDOT will return the portion of the existing NC 12 easement within the Refuge not needed for transportation purposes to the USFWS - Refuge.

USACE	<u>Tracey L. Wheelin</u>	NCDOT	<u>[Signature]</u>
USEPA	<u>Cynthia F. VanderWiele</u>	USFWS	<u>Harry Jordan</u>
NCDWR	<u>Greg Ward</u>	NCWRC	<u>[Signature]</u>
SHPO		FHWA	<u>Ronald Lee</u>
NMFS	<u>Fritz Bolde</u>	RPO	
NPS	<u>Christine Stevenson</u>	NCDCM	<u>Douglas V. Hargrett</u>
USFWS-PINWR			

USACE

Tracey L. Wheelin

NCDOT

[Signature]

USEPA

Cynthia F. Vander Weide

USFWS

Gary Jordan

NCDWR

Gary Ward

NCWRC

[Signature]

SHPO

Rene Medkell-Easley

FHWA

Ronald [Signature]

NMFS

Fritz Bolde

RPO

NPS

NCDCM

Douglas V. Hayzlett

USFWS-PINWR

USACE

Tracey Wheel

NCDOT

[Signature]

USEPA

Cynthia F. VanDerWeide

USFWS

Gary Jordan

NCDWR

Gary Ward

NCWRC

[Signature]

SHPO

FHWA

Ronald Lee

NMFS

Fritz Bolde

RPO

[Signature]

NPS

NCDCM

Douglas V. Huggitt

USFWS-PINWR

USACE	<u>Tracey Whalen</u>	NCDOT	<u>Ronald [unclear]</u>
USEPA	<u>Cynthia F. Vander Weide</u>	USFWS	<u>Gary Jordan</u>
NCDWR	<u>Greg Ward</u>	NCWRC	<u>[unclear]</u>
SHPO	<u>[unclear]</u>	FHWA	<u>Ronald [unclear]</u>
NMFS	<u>Fritz Bolde</u>	RPO	<u>[unclear]</u>
NPS	<u>[unclear]</u>	NCDCM	<u>Joseph V. Haggott</u>
USFWS-PINWR	<u>Mike Bryant</u>		



Note: Attachments referenced in these minutes already included in this EA are not included with this summary.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

MEMO TO: July 25, 2013 B-2500B Meeting Attendees
FROM: Beth Smyre, PE
DATE: July 31, 2013
SUBJECT: Meeting Summary- July 25, 2013 Meeting for Phase IIb of the Bonner Bridge-NC 12 Transportation Management Plan (TIP No. B-2500B)

**July 25, 2013 Mitigation Meeting:
Discussion and Conclusions**

A meeting was held at 1:00 pm on July 25 in the Roadway Design Conference Room at NCDOT Century Center for the subject project. The purpose of the meeting was to discuss potential mitigation options for the use of Pea Island National Wildlife Refuge land associated with the Bridge on New Location Alternative associated with Phase IIb of the Bonner Bridge Replacement Project (B-2500B). The following people attended:

- | | |
|-------------------------------------|-----------------------------------|
| Bill Biddlecome | USACE – Washington Field Office |
| Tracey Wheeler | USACE – Washington Field Office |
| David Wainwright | NC Division of Water Quality |
| Doug Huggett | NC Division of Coastal Management |
| Cathy Brittingham | NC Division of Coastal Management |
| Ron Lucas | FHWA |
| Kevin Hart (via teleconference) | NC Division of Marine Fisheries |
| Fritz Rohde (via teleconference) | National Marine Fisheries Service |
| Dennis Stewart (via teleconference) | USFWS – PINWR |
| Scott Lanier (via teleconference) | USFWS – PINWR |
| Thayer Broili (via teleconference) | NPS |
| Steve Thompson (via teleconference) | NPS |
| Beth Smyre | NCDOT – PDEA |
| Brian Yamamoto | NCDOT – PDEA |
| Bob Capehart | NCDOT – Division 1 |
| Pablo Hernandez | NCDOT – Division 1 |
| Leilani Paugh | NCDOT – NES |
| Kathy Herring | NCDOT – NES |
| Morgan Weatherford | NCDOT – NES |
| Chris Rivenbark | NCDOT – NES |

Michael Valiquette
John Page
Elise Bielen

NCDOT- Geotechnical Engineering Unit
Parsons Brinckerhoff
Parsons Brinckerhoff

Beth Smyre opened the meeting by updating the group on the current progress of Phase IIb; she explained that the Phase IIb Environmental Assessment (EA) is currently underway and that two detailed study alternatives are under consideration: the Bridge within Existing NC 12 Easement Alternative and the Bridge on New Location Alternative (Figure 1). Beth stated that NCDOT is working towards a decision on which of these alternatives will be presented in the EA as the Preferred Alternative, and that each alternative has issues to be considered. Beth mentioned that the Bridge within Existing NC 12 Easement Alternative carries construction concerns, while the Bridge on New Location Alternative goes outside of the existing NC 12 easement in the Pea Island National Wildlife Refuge (Refuge). The USFWS-Refuge must determine whether the new easement can be considered a minor modification of the existing NC 12 easement. If the new easement is considered a minor modification, then NCDOT must provide the appropriate mitigation for the use of Refuge land. The USFWS-Refuge has indicated in a letter (attached) that the Bridge on New Location Alternative likely could be considered a minor modification of the existing easement. The remainder of the meeting focused primarily on the appropriate mitigation options for the use of Refuge lands.

Beth indicated that NCDOT and USFWS have agreed that the section of existing NC 12 easement that is bypassed by the Bridge on New Location Alternative would be restored and returned to the Refuge. The new easement is estimated to require approximately 2.87 acres of new Refuge lands; approximately 18.68 acres of the existing NC 12 easement would be returned to the Refuge. Restoration of the existing easement will serve as a major portion of the mitigation required for the new easement.

Beth informed the group that in previous mitigation discussions with the Refuge, an idea also had been proposed to “nourish” the estuarine (soundside) shoreline in order to build up and support the natural migration of Hatteras Island. Beth presented the current estimated fill, pile, and SAV impacts of the Bridge on New Location Alternative (see attached table) and noted that the wetland fill impacts shown in the table occur entirely at the southern terminus of the new bridge, outside of the Refuge. NC 12 would be entirely on a bridge within the new easement; therefore, any wetland impacts in the new easement would be due to the placement of bridge piles. Beth requested that the group discuss and give opinions on the possibility of soundside nourishment as mitigation for impacts to the refuge.

The group discussed the following agency concerns with the nourishment proposal:

- The National Marine Fisheries Service is concerned about impacts to SAV habitat and is against filling good SAV habitat with a nourishment program. Based on previous NCDOT surveys, the SAV habitat in near the Refuge terminus is patchy, and most of the SAV in the area is at the southern end of the Bridge on New Location Alternative. The water bottom in the area near the Refuge terminus is hard-packed sand, which is

not good SAV habitat. Staff at the National Marine Fisheries Service Beaufort lab may have expertise that could assist with this proposal.

- The USFWS-Refuge explained to the group that the islands are eroding from both the ocean and the soundside, and that the Refuge is running out of options for mitigating the impacts of NC 12. The nourishment idea was proposed as an innovative, experimental way to see if building up the land mass on the western shore could be encouraged. Offsite mitigation efforts do not help with the Refuge's issue of eroding land mass.
- If the CAMA impacts remain as shown in the draft impact table (.03 acres of CAMA marsh impacted by piles), then DCM would not require compensatory mitigation for that type of impact.
- Several NCDOT staff expressed concerns that a nourishment program of this nature would be costly and risky, considering the unknown benefits and potential impacts. Because the wetland impacts are relatively small in this area, it was suggested that the wetland acreage lost as a result of Phase IIb could be rolled into the planned mitigation for Phase I of the project.
- The USACE agreed that SAV habitat should not be filled for the sake of a soundside nourishment program, but that it could be done if the area is hard-packed and not good SAV habitat. The USACE questioned what, from a jurisdictional wetlands standpoint, is driving this discussion, considering the small number of wetlands impacts and the low level of mitigation required. There are two issues at hand: mitigation for use of the Refuge and mitigation for wetlands. The USACE noted that a permit would not be required for the pile impacts in Refuge wetlands, but only the fill impacts in Rodanthe.

There was some discussion of using fill from dredging at the emergency ferry terminal in Rodanthe for a potential soundside nourishment program. The use of jetting spoils associated with B-2500B bridge construction or ocean sand gathered during the planned short-term nourishment program at the Rodanthe 'S' Curves Hot Spot was also discussed.

In summary, the group felt that the soundside nourishment program could be considered as an option for disposal of jetting spoils, but only after further coordination with the appropriate agencies. However, there may not be enough of a benefit to consider it as a mitigation measure. The nourishment program idea does not necessarily need to be tied into the Phase IIb project, and the group agreed to put the proposal aside for now and focus instead on wetlands mitigation. Dennis Stewart urged NCDOT to think outside the box on means that might be used in the context of the Phase IIb project to facilitate the accretion on the sound side of Hatteras Island.

Note: NCDOT staff conducted an SAV survey of the Bridge on New Location Alternative alignment on July 30, 2013. The updated design of the alternative involved shifting the bridge west of its previously proposed location, farther into potential SAV habitat. Preliminary results of the survey indicate more SAV present within the corridor, with patchy to thick

coverage (greater than 60% coverage, on average) noted throughout the alignment. NCDOT will conduct additional surveys of the corridor, and the results of the surveys will be discussed in the upcoming B-2500B EA.

If anyone has any additions or corrections to this summary, please contact John Page at PB at (919) 836-4076 or by e-mail at pagej@pbworld.com.

Attachments



Figure 1

PHASE IIb DETAILED STUDY ALTERNATIVES



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Coastal North Carolina National Wildlife Refuges Complex

Post Office Box 1969

Manteo, North Carolina 27954

(252) 473-1131 473-1668 (fax)

July 22, 2013

Gregory J. Thorpe, Manager
North Carolina Department of Transportation
Project Development and Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548

Subject: Request for a response on suggested Minor Modification of NC 12 Easement for Phase IIb of Bonner Bridge Replacement Project (TIP No. B-2500B), Dare County, North Carolina

Dear Mr. Thorpe:

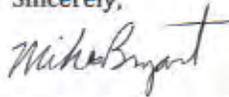
In your July 11, 2013 letter to me concerning the need for a new easement for the Rodanthe-Bridge on New Location alternative for Phase IIb of the Bonner Bridge Replacement Project (TIP No. B-2500B) in Dare County North Carolina on Pea Island National Wildlife Refuge you asked for my views on determining whether the alternative is a minor modification of the existing NC 12 easement and on the scale and nature of any mitigation that may be related to such a determination. You requested comments by July 31, 2013.

The proposed new easement requires 2.87 acres of easement west of existing NC 12 at the proposed bridge's northern terminus. The location and design was developed in consultation with my staff and it appears that the designed alignment minimizes impacts to the Refuge to the greatest extent possible while conforming to NCDOT's design standards. It could likely be determined a minor modification of the existing NC 12 easement if adequate mitigation can achieve no net loss of habitat quantity and quality. It appears to be necessary for safety reasons.

As you note, we met with Ms. Beth Smyre, NCDOT Project Planning Engineer, on June 25, 2013 at which time we discussed three conceptual mitigation measures. I appreciate that NCDOT would restore the approximately 18.68 acres of existing NC 12 easement that would no longer be needed for NC 12 once the new bridge is open for traffic. You describe the restoration as removing pavement and sandbags and conducting any additional grading work or planting of native species as directed by my office. This form of restoration on these acres would be appropriate mitigation. I also appreciate that NCDOT is exploring the nourishment of estuarine shoreline on the Refuge and my staff will call in to the July 25, 2013 at 1:00 pm scheduled meeting on this subject with the appropriate permitting agencies. This form of nourishment would be appropriate mitigation especially for wetland impacts. I'm less inclined to think that improvements to the former NCDOT wetland mitigation site on the west side of NC 12 would be appropriate. The Refuge is narrowing in width from loss on both shores. Blowing sand, and, possibly, over-wash sand are trapped in the wetland mitigation site changing it over time to an upland site, thus losing the wetland mitigation values. Unimpeded, the natural coastal process would bypass sand to the sound side shore and grow sound side shore line as the ocean shore line erodes – adding wetland acres to the Refuge. I would need more information to convince me that reworking an NC 12 relocation, former wetland mitigation site would lead to a sustainable, no net loss of quantity and quality of habitat.

In my judgment we need the sound side shore line to grow west to mitigate for loss on the ocean shore line. Thank you for your attention to my response. If you have questions about this response, please contact either Dennis Stewart, Refuge Wildlife Biologist (ext 231), Scott Lanier, Deputy Refuge Manager (ext 223), or me at (252) 473-1131.

Sincerely,



Michael R. Bryant, Project Leader

Cc: (electronic copy):
Victor Barbour, NCDOT Technical Services
Jerry Jennings, NCDOT - Division 1
Beth Smyre, Project Planning Engineer
Pete Jerome, FWS, Refuge Supervisor
David Viker, FWS, Regional Chief of Refuges - Southeast Region

Rodanthe- Bridge on New Location Alternative

New Easement Needed	Easement to be Returned
2.87 acres	18.68 acres

Fill Impacts	Acres
Wetland maritime grassland	1.29
Wetland maritime shrub/grassland	0.11
CAMA Wetlands	0
Total	1.40
Pile Impacts	
Wetland maritime shrub thicket	0.04
Wetland maritime shrub/grassland	0.00
Wetland salt grassland	0.01
Wetland salt shrub/grassland	0.00
CAMA marsh	0.03
Total	.08
Open Water Shading SAV Impact*	8.56
Open Water Pile SAV Impact*	1.76

*Total open water impact multiplied by 0.63



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

MEMO TO: September 11, 2014 Bonner Bridge Merger Team Meeting Attendees
FROM: Brian Yamamoto, PE *B. SY*
Project Development and Environmental Analysis Unit
DATE: February 5, 2015
SUBJECT: Meeting Minutes –September 11, 2014 NEPA/Section 404 Merger Team Meeting for Phase IIb of the Bonner Bridge – NC 12 Transportation Management Plan (TIP No. B-2500B)

**September 11, 2014 Merger Team Informational Meeting
on Phase IIb of the Bonner Bridge Replacement Project (B-2500B)**

The following people were present:

Merger Team Members:

Gary Jordan	USFWS – Raleigh Field Office
Dennis Stewart	USFWS – Pea Island National Wildlife Refuge <i>(by phone)</i>
Pete Benjamin	USFWS <i>(by phone)</i>
Chris Militscher	US Environmental Protection Agency <i>(by phone)</i>
Pace Wilber	National Marine Fisheries Service <i>(by phone)</i>
Fritz Rohde	National Marine Fisheries Service <i>(by phone)</i>
Cathy Brittingham	NC DENR – DCM
Michelle Havens	National Park Service <i>(by phone)</i>
Doug Huggett	NC DENR – DCM
David Wainwright	NC DENR – DWR
Renee Gledhill-Earley	NC DCR – SHPO <i>(by phone)</i>
Tracey Wheeler	US Army Corps of Engineers
Angela Welsh	Albemarle Rural Planning Organization <i>(by phone)</i>
Travis Wilson	NC Wildlife Resources Commission
Beth Smyre	NC DOT – PDEA
Ron Lucas	FHWA

Support Staff:

Clarence Coleman	FHWA
Greg Daisey	NCDENR – DCM (Elizabeth City)
David Hering	NCDOT – Transportation Program Management
Byron Kyle	NCDOT – Transportation Program Management
Jamie Shern	NCDOT
Shelley Blake	NCDOT
Rodger Rochelle	NCDOT
Richard Hancock	NCDOT – PDEA
Rob Hanson	NCDOT – PDEA
Brian Yamamoto	NCDOT – PDEA
Debbie Barbour	NCDOT - Preconstruction
LeiLani Paugh	NCDOT – Natural Environment Section (<i>by phone</i>)
Kathy Herring	NCDOT – Natural Environment Section
Chris Rivenbark	NCDOT – Natural Environment Section
Michael Turchy	NCDOT – Natural Environment Section
Gary Lovering	NCDOT – Roadway Design Unit
Christopher H. Lee	NCDOT – Roadway Design Unit
Mike Holder	NCDOT
Pablo Hernandez	NCDOT – Division 1 (<i>by phone</i>)
Shawn Mebane	NCDOT – Division 1
Jerry Jennings	NCDOT – Division 1
Kevin Fischer	NCDOT – Structures Management Unit

Consultant Project Team:

John Page	Parsons Brinckerhoff
Elise Bielen	Parsons Brinckerhoff

Meeting Purposes

The purposes of the meeting were to:

1. Provide an update from NCDOT on the status of the B-2500B project (Phase IIb).
2. Discuss two alternative variations to the Bridge on New Location Alternative created in response to National Marine Fisheries Service (NMFS) comments on the B-2500B Environmental Assessment (EA).
3. Discuss a potential Future Extension Concept.

The meeting opened at 10:15 am.

Discussion

Beth Smyre (NCDOT) opened the meeting by reviewing the project history for Phase IIb (B-2500B) project, updating the Merger Team on the project's status since the team last met in January 2013, and briefly summarizing public comments received during the comment period associated with public hearings held in January of 2014. Ms. Smyre explained that in response to concerns of several agencies, two alternative adjustments have been made to the

Bridge on New Location Alternative alignment within the study corridor. These alignment adjustments include:

- 2014A (Orange line on attached graphic): Concerns from NMFS about the impacts the Bridge on New Location Alternative (as depicted in the 2013 EA) would have on dense SAV areas prompted a proposed shift of bridge east of its 2013 EA location, out of the area which aerial infrared photography and field surveys revealed to be dense SAV beds. This alignment would maintain the same northern landing as the 2013 EA alignment, so as to not increase impacts to the Pea Island National Wildlife Refuge (Refuge), which was a concern of USFWS. The 2014A alignment shifts the angle of the southern terminus north in order to avoid the dense SAV beds while retaining the design speed (60 mph) of the curve just offshore at Rodanthe. This change would increase residential relocations in Rodanthe from two to five.
- 2014B (Yellow line on attached graphic): To eliminate the additional relocation impacts associated with the 2014A alignment, the bridge alignment in Rodanthe was retained in its 2013 EA location and the radius of the curve just off-shore at Rodanthe was reduced to avoid dense SAV areas. A tighter curve would reduce the design speed on this part of the Bridge on New Location Alternative. This alignment would also maintain the same northern terminus within the Refuge as the 2013 EA alignment.

In addition to the relocation change noted for the orange line (2014A), the two new alignments would reduce the distance between homes adjacent to the Pamlico Sound shoreline and the bridge, which would affect the visual change associated with the bridge in the sound. Wetland impacts associated with the alternative would change from 0.44 acre (2013 EA) to 0.40 acre, and the estimated shading of SAV/EFH habitat would decrease from 11 acres (2013 EA) to between 9 and 10 acres.

FHWA commented that these two alignment adjustments (as well as the adjustment from the green line assessed in the 2010 EA as the “Bridge South” to the red line assessed in the 2013 EA) resulted from an effort to minimize impacts for this detailed study alternative. None of the alignment adjustments shown constitute new significant impacts from what was studied in the 2008 FEIS/ 2010 EA and the 2013 Phase IIb EA.

Ms. Smyre indicated that at this time, if the Bridge on New Location Alternative was determined to be the LEDPA, NCDOT prefers the yellow (2014B) alignment for this alternative.

Ms. Smyre directed the discussion to the Merger Team members and asked for their opinions and concerns regarding the Phase IIb alignment alternatives. Responses were as follows:

- USFWS-Refuge stated that these alternatives present no change for the Refuge’s concerns; the Bridge on New Location Alternative has the least effect on the Refuge and would be the best for minimizing impacts. Ms. Smyre asked whether the new easement required for the Bridge on New Location (at the north terminus) would require a compatibility determination from the Refuge. USFWS-Refuge verified that it

would, in addition to the full easement assessment process and special use permit; the same process would be required for the Bridge within Existing NC 12 Easement Alternative, which would have temporary construction easement impacts in the Refuge. USFWS stated that despite the loss of approximately 3 acres of new easement required for the Bridge on New Location Alternative, in light of the benefits that the Refuge would get from the removal of 19 acres of existing NC 12 easement, the Bridge on New Location Alternative could still be found compatible.

- USFWS-Raleigh stated that moving the alignment of the Bridge on New Location closer to the shore could have an effect on the sea turtle nesting impact assessment. (A question was raised by USFWS about the bridge-to-shoreline measurement that was presented to the Merger Team in the March 2014 CP 3 packet [that was distributed only electronically prior to the postponement of that meeting]. The distance questioned was the reduction from 1,550-2,350 feet to 460-1,350 feet between the bridge and the shore. It was clarified that these numbers are the measurement of the distance from the bridge centerline to the sound-side shoreline, not the ocean-side shoreline). In general, an alternative in the sound versus the Bridge within Existing NC 12 Easement Alternative would have much less impact to sea turtles because of the greater distance from the beach where they nest. Also, impacts to the rufa red knot and piping plover would be avoided with a bridge in the sound.
- USEPA stated that they had no comments.
- NMFS stated that they would still need to receive specific acreage impacts to SAV beds for each alternative. They also noted that Section 7 consultation with NMFS would need to occur for the sea turtles and sturgeon. NMFS stated that they are encouraged by the reduction in SAV bed impact reflected in the adjustments to the Bridge on New Location Alternative alignment, but that they cannot really comment on the 2014A and 2014B alignments without having the acres of impact on SAV beds. (Ms. Smyre indicated that SAV beds need to be delineated to determine the extent of plant coverage, and that those numbers would be provided to NMFS when available.)
- USACE stated that they could issue a Section 404 permit for any of the detailed study alternatives. USACE stated that in conversations with the US Coast Guard (USCG), they understand that this project could potentially get Advance Approval, but that if concerns are raised during the permitting process, it would be elevated to a full USCG permit. They stated that a similar process could happen for the USACE permit; currently, the Section 404 resource impacts would be below the threshold for the Nationwide Permit, but the project could be elevated to an Individual Permit if significant concerns about the project are raised during the review process. USACE stated that this is a unique project for USACE. Either alternative could be issued a Section 404 permit, but at this time DCM has indicated that the Bridge within Existing NC 12 Easement Alternative, including the associated frontage roads, would not meet CAMA erosion setback requirements for oceanfront construction. If this is the case, NCDOT would have to petition the Coastal Resources Commission for a variance to receive a CAMA permit, following which a Section 404 permit could be issued (See DCM comments in the next bullet point). USACE favors the Bridge on New Location Alternative, which would require Section 404 permitting only at the bridge termini

(for impacts due to fill within wetlands), not for the portion of the bridge within the sound. Any SAV mitigation for the Bridge on New Location Alternative that involves fill in waters of the US would require a USACE permit.

- NCDENR – DCM favors the Bridge on New Location Alternative. DCM stated that permitting the Bridge within Existing NC 12 Easement would be difficult for DCM because the ocean setback requirements would not be met, therefore requiring a variance. Whether NCDOT would receive a variance is uncertain. They stated that they could work with the other permitting agencies on the Bridge on New Location Alternative and would want to make sure that fisheries impacts are minimized as much as possible. DCM also would need to be assured that the landing at the north end of the Bridge on New Location Alternative would meet the ocean setback requirement. It is likely okay, but that would need to be verified with a full review. They stated that their preference is the Bridge on New Location Alternative, assuming that no dredging would be used during construction. (Ms. Smyre stated that construction methods would be discussed further in Avoidance and Minimization [CP 4A], but that it is currently assumed that work bridges would be used instead of dredging.)
- NCDENR – DWR stated that they prefer an alternative that goes out into the sound, as opposed to an alternative that would eventually be in the ocean. The biggest concern of DWR is stormwater runoff, which would happen with either the Bridge on New Location or the Bridge within the Existing NC 12 Easement. They acknowledged that catching the runoff on long bridges as opposed to direct discharge is not reasonable. They stated that it appears that the 2014B alignment would be a shorter bridge, which would mean reduced discharge.
- NCDENR – DCR had no comment on these alternatives.
- NCWRC had no comment on these alternatives.

After discussing the detailed study alternatives for Phase IIB, Ms. Smyre presented an update on the litigation status of the B-2500 project. The 4th Circuit Court of Appeals issued a ruling in August 2014; the ruling affirmed the District Court’s ruling on the NEPA analysis, but the Section 4(f) component was sent back to the lower court for reconsideration. She stated that while no stop work orders have been issued, NCDOT has temporarily suspended construction of Phase IIA while it reviews the ruling.

Ms. Smyre shared with the Merger Team that internal discussions at NCDOT have resulted in an idea they are calling the a “Future Extension Concept” (see the attached graphic). The Future Extension Concept would be a potential bridge extension of the Bridge on New Location Alternative leading from the northern-most point of the Bridge on New Location Alternative before it curves east to connect back to NC 12 in the Refuge. The extension would continue north from this point and rejoin NC 12 several miles to the north (near the northern terminus of the current Phase IIA Bridge within Existing NC 12 Easement), resulting in a total bridge length of approximately seven miles. Ms. Smyre presented slides and scrolls with figures depicting the Future Extension Concept, in addition to the Phase IIB alternatives (including the 2013, 2014A, and 2014B Bridge on New Location alignments). The figures depicted both the Phase IIB alternatives and the

Future Extension Concept on aerial and infrared photography in order to demonstrate the location of the alternatives relative to dense SAV beds in Pamlico Sound. It was stated that the extension would not be a part of Phase IIb, but rather would come at a later date per the process outlined in the NC 12 Transportation Management Plan.

Ms. Smyre directed the discussion to the Merger Team members and asked for their opinions and concerns regarding the Future Extension Concept. Responses were as follows:

- USFWS- Refuge was supportive of innovative thinking along these lines. The Future Extension Concept would minimize impacts to the Refuge. They assumed that a spur would be incorporated into the Bridge on New Location Alternative so that this extension could be tied into it in the future. Ms. Smyre stated that structure changes would be discussed, but emphasized that at this point in time, the Future Extension Concept is simply an idea that has not gone through any level of design.
- USFWS-Raleigh noted that the extension combined with the Bridge on New Location is similar to the “Seven-Mile Alternative” USFWS- Refuge suggested in the past. They stated that this concept would be worthy of consideration, but that details need to be developed. They also asked what would happen to Phases IIa and IIb in that case of using the extension. Ms. Smyre indicated she did not know.
- USEPA did not express any opinions about the Future Extension Concept.
- NMFS stated that they had nothing positive to say about the extension concept. They thought that the cost could be prohibitive; by the time it was built, there might not be much island left; and that it is not a good idea. They stated that the potential for the Future Extension Concept would increase their preference for the Bridge within NC 12 Existing Easement Alternative. Ms. Smyre indicated that issues related to the cost of this alternative have been raised in the past and would be reconsidered if this concept is pursued.
- USACE questioned whether the serious consideration of the extension concept would derail the Concurrence Point 3 process. NCDOT responded that the extension would be a separate, future phase of the project, and therefore would not change the procedures for Phase IIb. USACE responded that the fact that there is a possibility of the extension being pursued in the future would have an impact on the choice between the two Phase IIb alternatives. If future consideration of the extension also were to apply to the Bridge within Existing NC 12 Easement Alternative, before it could be selected as the LEDPA for Phase IIb, the additional impacts of connecting the Bridge within NC 12 Existing Easement Alternative into an extension in the sound would need to be understood. The Merger Team would need to know whether the extension is on the table with both alternatives before CP 3 can happen.
- NCDENR– DCM stated that this concept would be worthy of additional discussion, and that DCM would be willing to work with NCDOT if this concept were considered practicable.

- NCDENR – DWR did not express any opinions or concerns about the Future Extension Concept at this time.
- NCDCCR stated that more alternative development and information is needed.
- NCDENR-WRC asked whether Phase IIa would continue as planned if the extension concept were to be pursued, to which Ms. Smyre responded that the answer is unclear at this time. NCWRC also wondered whether, if the extension concept were pursued, an interim measure could be used in the Phase IIa area, similar to the beach nourishment has been used in the Rodanthe area. Ms. Smyre responded that this would be a possibility.

Ms. Smyre discussed the next steps for the Phase IIb process, including: the CP 3 (LEDPA) Meeting; CP 4A (Avoidance and Minimization) Meeting; Section 106, Section 7, and EFH Coordination; issuance of any additional environmental analysis documents; and awarding the design-build contract for construction. No dates or timelines are available at this time. In reference to the potential additional documentation, Ms. Smyre clarified that may depend upon what is required by the courts as part of the current litigation.

Ms. Smyre concluded the meeting by thanking the Merger Team for their input, and by announcing her departure from NCDOT to accept a job as a private consultant. She stated that questions and concerns about this project should be directed to Mr. Brian Yamamoto at NCDOT (byamamoto@ncdot.gov or (919) 707-6051).

The meeting was adjourned at approximately 11:30 am.

Attachments



NC 12 – Rodanthe Breach Long-Term Improvements Merger Team Meeting

September 11, 2014



- ## Phase IIb Status
- Concurrence Point 2/2A signed in November 2012
 - Alternatives to be studied in detail:
 - Bridge on New Location
 - Bridge within Existing NC 12 Easement



- ## Phase IIb Status
- EA signed on December 2013
 - Public Hearings Held in January 2014
 - Meetings in Ocracoke, Rodanthe/Buxton, and Manteo
 - Comment Period ended January 24

- ## Public Hearing Comments
- Received 12 oral comments and 78 written comments
 - Commenters asked to state alternative preference, reasons why, and suggestions for design improvements to both alternatives

Public Hearing Comments

- Preferences:
 - Bridge within Existing NC 12 Easement: 12
 - Bridge on New Location: 33, plus 64 petition signatures
- Other:
 - Alternative that can be built sooner: 3
 - Beach Nourishment/ No Bridges: 26, plus 208 petition signatures

Local Government/ NGO

- Dare County- Prefer Bridge in Easement
- Citizens Action Committee to Replace the Bonner Bridge
- Hatteras Island Property Management Group
- Southern Environmental Law Center
- Surfrider Foundation, Outer Banks Chapter- Prefer Bridge on New Location

Phase IIb- Bridge on New Location

- DOI Comments- Preference for Bridge on New Location
 - Minimize Impacts to T&E species
 - Management of Refuge resources
- NMFS Comments- Preference for Bridge within Existing NC 12 Easement
 - Impacts to SAV habitat

Phase IIb- Bridge on New Location

- Shift alignment east to minimize amount of bridge within SAV habitat
 - Dense SAV areas along southern end of 2013 bridge alignment
- Alignment change should not increase impacts within Refuge

Phase IIb- Bridge on New Location



Phase IIb- Bridge on New Location



Phase IIb- Bridge on New Location



Phase IIb- Bridge on New Location

- Residential Relocations
- Visual Impacts
- Jurisdictional Wetland Impacts
- Essential Fish Habitat/ Submerged Aquatic Vegetation

Phase IIb Alignments



Permit Requirements

- | | |
|---|---|
| <p>Bridge within Existing NC 12 Easement</p> <ul style="list-style-type: none"> ▪ Section 404 Permit ▪ Section 401 Permit ▪ CAMA Major Development Permit ▪ USFWS Special Use Permit | <p>Bridge on New Location</p> <ul style="list-style-type: none"> ▪ Section 404 Permit ▪ Section 401 Permit ▪ CAMA Major Development Permit ▪ USFWS Special Use Permit/ Highway Easement ▪ NPS Special Use Permit ▪ USCG Advance Approval |
|---|---|

Additional Requirements

- Section 106 Coordination
- Section 7 Consultation
- Essential Fish Habitat Assessment

Discussion

Litigation Status

- Fourth Circuit Court Decision
 - Issued August 6, 2014
- Upheld NEPA analysis of project
- Section 4(f) analysis sent back to District Court for further consideration

Phase IIb Alignments



Future Extension Concept



Future Extension Concept



Discussion

Phase IIb Next Steps

- Hold CP 3 (LEDPA) Meeting
- Hold CP 4A (Avoidance & Minimization) Meeting
- Complete Section 106, Section 7, EFH coordination
- Issue any additional environmental analysis, decision document for Phase IIb
- Award design-build contract for construction



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

NICHOLAS J. TENNYSON
ACTING SECRETARY

MEMO TO: June 17, 2015 Bonner Bridge Merger Team CP3 Meeting Attendees

FROM: Brian Yamamoto, PE 
Project Development and Environmental Analysis Unit

DATE: July 29, 2015

SUBJECT: Meeting Summary – June 17, 2015 NEPA/Section 404 Merger Team Meeting
CP3 for Phase IIb of the Bonner Bridge – NC 12 Transportation Management
Plan (TIP No. B-2500B)

**June 17, 2015 Merger Team Concurrence Point 3 Meeting
on Phase IIb of the Bonner Bridge Replacement Project (B-2500B)**

The following people were present:

Merger Team Members:

Tracey Wheeler	US Army Corps of Engineers
Gary Jordan	USFWS – Raleigh Field Office
Dennis Stewart	USFWS – Pea Island National Wildlife Refuge
Cynthia Van Der Wiele	US Environmental Protection Agency
Fritz Rohde	National Marine Fisheries Service
Michelle Havens	National Park Service <i>(by phone)</i>
Doug Huggett	NCDENR – DCM
David Wainwright	NCDENR – DWR
Renee Gledhill-Earley	NCDENR – SHPO <i>(by phone)</i>
Travis Wilson	NC Wildlife Resources Commission
Brian Yamamoto	NCDOT – PDEA
Ron Lucas	FHWA

Other Attendees:

Bill Biddlecome	US Army Corps of Engineers
Henry Wicker	US Army Corps of Engineers <i>(by phone)</i>
Lynne Belanich	National Park Service <i>(by phone)</i>
Steve Thompson	National Park Service <i>(by phone)</i>
Chris Militscher	US Environmental Protection Agency <i>(by phone)</i>

MAILING ADDRESS:
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WEBSITE: WWW.NCDOT.ORG/DOH/PRECONSTRUCT/PE/

LOCATION:
CENTURY CENTER, BUILDING A
1000 BIRCH RIDGE DRIVE
RALEIGH NC 27610

Pete Benjamin	USFWS
Clarence Coleman	FHWA
Earl Dubin	FHWA
Pace Wilber	National Marine Fisheries Service (<i>by phone</i>)
Keith Hanson	National Marine Fisheries Service
Cathy Brittingham	NCDENR – DCM
Greg Daisey	NCDENR – DCM (Elizabeth City)
Shane Staples	NCDENR – DCM - Fisheries
Hardee Cox	NCDOT – –STIP Unit
Matthew Cowhig	NCDOT – –Transportation Planning Branch
Shelley Blake	NCDOT
Rodger Rochelle	NCDOT
Mike Charbonneau	NCDOT – Communications (<i>by phone</i>)
Jenn Heiss	NCDOT – Communications (<i>by phone</i>)
Richard Hancock	NCDOT – PDEA
Rob Hanson	NCDOT – PDEA
Mike Sanderson	NCDOT – Natural Environment Section
Drew Joyner	NCDOT – Human Environment Section
Kathy Herring	NCDOT – Natural Environment Section
Chris Rivenbark	NCDOT – Natural Environment Section
Michael Turchy	NCDOT – Natural Environment Section
Cheryl Youngblood	NCDOT – Geotechnical Unit
Gary Lovering	NCDOT – Roadway Design Unit
Christopher H. Lee	NCDOT – Roadway Design Unit
Mark Staley	NCDOT – Roadside Environmental Unit
Matthew York	NCDOT – Hydraulics Unit
Paul Atkinson	NCDOT – Hydraulics Unit
Donna Jackson	NCDOT – Utilities
Pablo Hernandez	NCDOT – Division 1 (<i>by phone</i>)
Shawn Mebane	NCDOT – Division 1
Kevin Fischer	NCDOT – Structures Management Unit
David Hering	NCDOT – Design/Build
Daniel Boulware	NCDOT – Design/Build
Nora McCann	NCDOT – Design/Build
Byron Kyle	NCDOT – Design/Build

Private Engineering Firm Representatives:

Beth Smyre	Dewberry
John Page	Parsons Brinckerhoff
Ray Magsanoc	Parsons Brinckerhoff

Meeting Purpose

The purpose of the meeting was to reach concurrence on the Least Environmentally Damaging Practicable Alternative (LEDPA) for Phase IIB (Rodanthe Breach area) of the Bonner Bridge – Parallel Bridge with NC 12 Transportation Management Plan Alternative.

The meeting opened at 1:00 pm.

Discussion

Tracey Wheeler opened the meeting. She stated its purpose and asked attendees to introduce themselves.

Brian Yamamoto acknowledged the recent settlement between NCDOT, FHWA, NCDENR and the plaintiffs represented in the lawsuit filed by the Southern Environmental Law Center related to the Bonner Bridge Replacement Project. A discussion with Merger Team members followed. In response to a query by NMFS, Brian affirmed that no decisions on future project phases are pre-determined by the settlement. This also was affirmed by Rodger Rochelle. NCDENR-DCM affirmed that nothing in the settlement pre-determines its permit actions. NMFS noted concerns with the settlement as it pertains to potential impacts to trust resources in future phases and asked if the Merger Team would be allowed to look at current alignments on land. Tracey Wheeler indicated that the Merger Team could evaluate alignments on land, including past alignments, and that the settlement does not limit the Merger Team to only considering alignments in the sound. She noted that though the study corridor shown in the settlement is located entirely within Pamlico Sound, the study corridor evaluated by the merger team will extend onto Hatteras Island (incorporating the current Parallel Bridge Corridor). Shelley Blake said that an alternative in Pamlico Sound just west of Hatteras Island was not assessed in detail previously. It will now be studied. Brian said NCDOT will consult with the Merger Team on the best alternative alignments to consider both on land and in Pamlico Sound. Tracey clarified that the Merger Team could focus on Phase IIB at that time as Phase IIB has independent utility. Merger Team members had no objection to proceeding with consideration of the LEDPA for Phase IIB.

Brian stated that there is currently no NCDOT-PDEA Project Manager for the Bonner Bridge project and that he would serve as the NCDOT's representative on the Merger Team that day. Brian indicated that Beth Smyre (former PDEA Project Manager) is now with Dewberry, but she is continuing to assist PDEA with the management of the project. Nora McCann had previously served as the PDEA Project Manager in 2015, but she was reassigned to the Design-Build group because of restructuring within NCDOT. There is no change in the consultant services team (Parsons Brinckerhoff).

Brian and Beth reviewed the merger meeting packet and the alternatives studied to date. The packet included a meeting agenda, project history, the detailed study alternatives, project impacts and cost estimates, and four attachments. The slide show used in the review is attached. Key points of Beth's review of the project, meeting attendee comments, and Merger Team responses are summarized as follows:

1. Phase IIb Status

- Concurrence point 2/2A was signed in November 2012. The detailed study alternatives selected were the Bridge within Existing NC 12 Easement and the Bridge on New Location.
- Three public hearings were held in January 2014 (Ocracoke, Rodanthe/Buxton, and Manteo). Commenters were asked to provide reasons for their preferences for alternatives. Public preferences could generally be categorized as 1) the Bridge on New Location Alternative, 2) whichever alternative could be permitted and constructed the quickest, or 3) stabilization of the ocean beach (beach nourishment) instead of building a bridge. Of the agencies that submitted comments on the 2013 Environmental Assessment, two agencies indicated a preference for one of the alternatives. The Department of Interior preferred the Bridge on New Location, and the NMFS preferred the Bridge within Existing NC 12 Easement Alternative.
- NCDOT revised the Bridge on New Location Alternative alignment based on NMFS comments. The proposed bridge alignment at the southern part of the corridor was shifted east of the alignment presented in the environmental assessment to minimize impacts to the dense existing submerged aquatic vegetation (SAV). Since the northern part of the bridge alignment had already been shifted to minimize impacts to the Refuge, that portion of the alignment was not shifted. Two alignments were developed, and the 2014B alignment (illustrated in yellow in the merger packet) was chosen to replace the alignment assessed in the Phase IIb EA.

2. Impacts

- Direct impacts within Rodanthe and the Refuge resulting from the Bridge on New Location alignment modification were minimal. The open water area between the Pamlico Sound shoreline and the bridge alignment was reduced, as was the distance between the bridge alignment and homes fronting on Pamlico Sound.
- About 6 acres of area occupied by SAV beds would be shaded by the 2014B alignment of the Bridge on New Location Alternative, although 10.5 acres of SAV habitat would be shaded by this option.

NMFS Comment: NMFS considers the whole 10.5 acres of Pamlico Sound shaded by the bridge an impact because SAV beds move, but agreed that the current SAV bed impact is 6 acres.

- The Bridge within Existing NC 12 Easement Alternative would place fill in 0.05 acre of wetland. The 2014B alignment of the Bridge on New Location Alternative would place fill in 0.41 acre of wetland.
- The Bridge within Existing NC 12 Easement Alternative would require no new NC 12 easement in the Refuge and 2.06 acres of temporary construction easement. The 2014B alignment of the Bridge on New Location Alternative would require 2.79 acres

of new NC 12 easement in the Refuge, but return 19.27 acres of existing NC 12 easement to the Refuge. This alternative would require 0.63 acre of temporary construction easement.

- NCDOT noted that 2014B alternative has a tighter bridge curve at the southern end of the bridge alignment, reducing the design speed from 60 mph to 50 mph. Use of the tighter curve will avoid displacing two residences in Rodanthe that would otherwise be displaced.

3. Cost

- Beth noted the updated costs for the Phase IIb alternatives (Table 2 in the merger packet).

NMFS Comment: NMFS noted that the costs presented did not include the mitigation cost, including the cost of mitigating SAV/essential fish habitat (EFH) impacts with the Bridge on New Location Alternative. Beth agreed that SAV/EFH mitigation costs would be in addition to those presented in the packet.

NC DENR - WRC Comment: WRC asked whether utilities would be relocated to the new bridge and the associated cost. Beth stated that it was assumed that utilities would remain at their current location unless otherwise directly impacted by project construction. The power easement is separate from the NC 12 easement, and the utility could remain in that easement with NC 12 relocated. David Hering said utilities could be accommodated on the bridge if the utility providers request that the lines be placed on the bridge during final design. Rodger said if utilities choose to move, it would be at their cost. NMFS asked if the bridge deck would be wider with utilities on the bridge. David said that, similar to the Bonner Bridge (Phase I), the deck would not need to be widened. WRC and the Refuge suggested that NCDOT should contact utilities to determine if they want to relocate the utilities onto the bridge.

USEPA Comment: USEPA asked if the economic impact of the recreational impacts of the two alternatives under consideration had been quantified, for example tourism dollars lost from the loss of ocean surfing locations with the Bridge within Existing NC 12 Easement Alternative. USEPA said it was difficult to compare the two alternatives without this information. Beth indicated that the economic impact was not quantified in terms of dollars for the recreation impacts specific to Phase IIb. John Page said that the economic impact to Dare County due to the loss of paved road access to the Refuge has as a whole was assessed in the 2008 FEIS. The economic study team concluded that a loss of tourism dollars would occur if a road that provides direct access to a recreational resource was eliminated, and this resource was unique (not available anywhere else in Dare County). (One example of such a unique resource is the fishing piers/catwalks at Oregon Inlet.) If that were to occur, visitors wanting to use that resource could choose not to visit Dare County at all, resulting in an economic loss. In the case of the water-based recreation that would be affected by the two Phase IIb alternatives, opportunities for this type of recreation are not confined on the Outer Banks to the Phase IIb project area. Thus, a tourism dollars loss to Dare County is not expected. The impact to users would be more

a matter of a loss of convenience. The Refuge added that there will be no loss of direct road access, only a change in the way people would access the beach.

4. Permits

- Beth listed the regulatory permits required for each alternative.

NMFS Comment: NMFS asked if stormwater would be handled differently for the revised Bridge on New Location Alternative. Beth said stormwater would be handled as defined in the Phase IIB EA and that details would be developed in the context of the environmental permit process.

5. Additional Regulatory Coordination

- Additional regulatory coordination under Section 106, Section 7, and EFH (Magnuson- Stevens Act) will be required prior to the completion of the NEPA process for Phase IIB.

USACE Comment: USACE stated that the public notice for Phase I may not have included the Phase IIB detailed study alternatives. They have no objection to either alternative. Both are below their nationwide permit threshold, but procedurally they cannot sign the concurrence form at the meeting. [USACE subsequently determined that it will not issue a new public notice for Phase IIB because: 1) USACE is permitting so few jurisdictional impacts on this phase, 2) NCDOT has done a tremendous amount of prior public involvement, and 3) FHWA, NCDOT, and USACE all agree on the proposed LEDPA discussed at the Merger Team meeting.]

USFWS-Raleigh Regional Office Comment: USFWS said they will need to do a reassessment for Section 7.

NMFS Comment: NMFS said that there is currently a back log of work with their Section 7 staff.

Concurrence Discussion

Brian recommended that the Merger Team concur that the Bridge on New Location Alternative (2014B alignment) is the LEDPA, since the 2014B alignment would minimize impacts to the Refuge, the ocean shoreline/beach, the Rodanthe community, SAVs, and residential relocations. The Merger Team members responded as follows:

USACE: Likely will concur after confirming whether a new public notice is needed. [USACE later signed the concurrence form.]

NC DENR - DCM: Concurred and indicated that they had a concern with the CAMA permitability of the Bridge within Existing NC 12 Easement Alternative.

NC DCR - SHPO: Concurred.

USEPA: Concurred and said they did not favor of the 2014A alignment alternative.

USFWS-Raleigh Field Office: Concurred.

NMFS: Concurred. Although NMFS believes that the Bridge within Existing NC 12 Easement Alternative is the least environmentally damaging, they acknowledge that it is not practicable. The Bridge on New Location Alternative will necessitate the consideration of expensive SAV/EFH mitigation. NMFS concurs with the understanding that the SAV/EFH impact will be mitigated.

NCDENR - WRC: Concurred.

USFWS-Refuge: Concurred. In terms of use of Refuge land by NC 12, the Bridge on New Location Alternative would be a net benefit to the Refuge. The Refuge also has a proclamation boundary area in the sound. SAVs are important for migratory birds and the Refuge has an interest in migratory birds. The Refuge considered both impacts in making its decision to concur.

FHWA: Concurred.

NCDENR - DWR: Concurred, recognizing that stormwater runoff mitigation will be addressed during the permit process.

National Park Service: National Park Service indicated that the person who makes the concurrence decision was not present and the person to be regularly involved with the project is new. The National Park Service indicated they would submit a decision in the immediate future. [The National Park Service later concurred with the LEDPA.]

RPO: Brian indicated that the Albemarle RPO was not present and could not provide a decision today. He agreed to contact the RPO representative. [Albemarle RPO later concurred with the LEDPA.]

The concurrence form signed by all Merger Team members is attached.

Next Steps

NCDOT indicated that the next steps included:

- CP4A, Avoidance and Minimization Meeting
- Section 106 and Section 7 coordination
- Additional Section 4(f)/ NEPA documentation as appropriate to document work completed since 2013 EA
- Public meeting
- Issue decision document for Phase IIb (if no new significant impacts)

- Award design-build contract

NCDENR - WRC Comment: WRC asked when the CP4A meeting would occur. Brian said he could not offer an exact date at this time.

NCDENR – DCM Comment: NCDENR – DCM asked that all Merger Team members be involved in mitigation discussions.

The meeting was adjourned at approximately 2:30 pm.

Attachments:

B-2500B 6-17-15 Presentation Slides

Section 404/NEPA Merger Project Team Agreement Concurrence Point No. 3: Least Environmentally Damaging Practicable Alternative

NC 12 – Rodanthe Breach Long-Term Improvements Merger Team Meeting

June 17, 2015

Project Area



Phase IIb Status

- Concurrence Point 2/2A signed in November 2012
- Alternatives to be studied in detail:
 - Bridge on New Location
 - Bridge within Existing NC 12 Easement

Phase IIb- CP 2/2A Alternatives



Phase IIb Public Involvement

- Public Hearings Held in January 2014
 - Meetings in Ocracoke, Rodanthe/Buxton, and Manteo
- Received 12 oral comments and 78 written comments
- Commenters asked to state alternative preference, reasons why, and suggestions for design improvements to both alternatives

Public Hearing Comments

- Preferences:
 - Bridge within Existing NC 12 Easement: 12
 - Bridge on New Location: 33, plus 64 petition signatures
- Other:
 - Alternative that can be built sooner: 3
 - Beach Nourishment/ No Bridges: 26, plus 208 petition signatures

Local Government/ NGO

- Dare County
- Citizens Action Committee to Replace the Bonner Bridge
- Hatteras Island Property Management Group
- Southern Environmental Law Center
- Surfrider Foundation, Outer Banks Chapter

Phase IIb- Bridge on New Location

- DOI Comments- Preference for Bridge on New Location
 - Minimize Impacts to T&E species
 - Management of Refuge resources
- NMFS Comments- Preference for Bridge within Existing NC 12 Easement
 - Impacts to SAV habitat

Phase IIb- Bridge on New Location

- Shift alignment east to minimize amount of bridge within SAV habitat
 - Dense SAV areas along southern end of 2013 bridge alignment
- Alignment change should not increase impacts within Refuge

Phase IIb- Bridge on New Location



Phase IIb- Bridge on New Location



Phase IIb- Bridge on New Location



Phase IIb Impacts

- Essential Fish Habitat/ Submerged Aquatic Vegetation
- Residential Relocations
- Jurisdictional Wetland Impacts
- New NC 12 Easement

Phase IIb

- Visual Impacts



Project Costs

Type of Cost	2013 Bridge on New Location Alternative (Red)		Bridge within Existing NC 12 Easement Alternative (Blue)	
	Low	High	Low	High
Construction	\$190,600,000	\$210,300,000	\$139,900,000	\$164,500,000
Right-of-Way	\$3,850,000		\$21,750,000	
Utilities	\$244,650		\$1,153,250	
TOTAL	\$194,694,650	\$214,394,650	\$162,803,250	\$187,403,250

Type of Cost	2014A Bridge on New Location Alternative (Orange)		2014B Bridge on New Location Alternative (Yellow)	
	Low	High	Low	High
Construction	\$169,200,000	\$187,200,000	\$174,400,000	\$193,400,000
Right-of-Way	\$5,100,000		\$4,175,000	
Utilities	\$244,650		\$244,650	
TOTAL	\$174,544,650	\$192,544,650	\$178,819,650	\$197,819,650

Phase IIb- CP2/2A Alternatives



Permit Requirements

Bridge within Existing NC 12 Easement

- Section 404 Permit
- Section 401 Permit
- CAMA Major Development Permit
- USFWS Special Use Permit

Bridge on New Location

- Section 404 Permit
- Section 401 Permit
- CAMA Major Development Permit
- USFWS Special Use Permit/ Highway Easement
- NPS Special Use Permit
- USCG Advance Approval

Additional Requirements

- Section 106 Coordination
- Section 7 Consultation
- Essential Fish Habitat Assessment

Discussion

NCDOT Recommended LEDPA

- Bridge on New Location (2014B Alignment)
 - Minimizes impacts to:
 - Pea Island National Wildlife Refuge
 - Ocean shoreline/ beach
 - Rodanthe community
 - 2014B Alignment designed to minimize impacts to SAV, residential relocations

Phase IIb Next Steps

- Hold CP 4A (Avoidance & Minimization) Meeting
- Complete Section 106, Section 7, EFH coordination
- Complete additional Section 4(f) / NEPA documentation as appropriate to document work completed since 2013 EA
- Hold public meeting to share new information
- Issue decision document for Phase IIb (if no new significant impacts)
- Award design-build contract (final design, permitting, construction)

July 30, 2015

Memorandum To: Meeting Attendees & B-2500 Merger Team Members

From: Beth Smyre, PE *Beth Smyre*

Subject: Meeting Summary- July 15, 2015 Informational Merger Team Meeting on SAV Mitigation for Phase I of the Bonner Bridge – NC 12 Transportation Management Plan (**STIP No. B-2500**)

Reference: July 15, 2015 Memorandum from Jason Hall (SEPI) entitled “Bonner Bridge / Merger Team Meeting – Phase I SAV Mitigation, Pamlico Sound, Oregon Inlet, Dare County, NC.”

A meeting was held on July 15, 2015 to discuss the proposed mitigation for submerged aquatic vegetation (SAV) impacts associated with Phase I of the Bonner Bridge Replacement Project. The following staff were in attendance:

Doug Huggett	NC Division of Coastal Management (NCDCM)
Shane Staples	NCDCM
Greg Daisey	NCDCM
Cathy Brittingham	NCDCM
Tracey Wheeler	US Army Corps of Engineers (USACE)
Henry Wicker	USACE (<i>by phone</i>)
Steve Thompson	National Park Service (<i>by phone</i>)
Michelle Havens	NPS (<i>by phone</i>)
Fritz Rohde	National Marine Fisheries Service (NMFS)
Keith Hanson	NMFS (<i>by phone</i>)
Pace Wilber	NMFS (<i>by phone</i>)
Travis Wilson	NC Wildlife Resources Commission (NCWRC)
LeiLani Paugh	NCDOT-NES
Morgan Weatherford	NCDOT-NES
Kathy Herring	NCDOT-NES
Chris Rivenbark	NCDOT-NES
Michael Turchy	NCDOT-NES
Brian Yamamoto	NCDOT-PDEA
Nora McCann	NCDOT-PDEA
Mark Fonseca	CSA Ocean Sciences
Jason Hall	SEPI Engineering & Construction
Jason Hales	SEPI Engineering & Construction
Randy Boyd	SEPI Engineering & Construction
Beth Smyre	Dewberry

Construction of Phase I will impact SAV located on the west side of Bodie Island; NCDOT has surveyed the proposed alignment annually, and the surveys have shown a range of SAV coverage within the project footprint. As stated in the June 2012 Phase I permit application, the new Bonner Bridge will shade approximately 2.66 acres of SAV. Removal of the existing bridge will un-shade 1.38 acres, leaving 1.28 acres of SAV impacts that require mitigation. In 2012, NCDOT and CSA Ocean Sciences (CSA) developed a Seagrass Mitigation Plan for the mitigation of the SAV impacts associated with Phase I (and possibly future phases) of the project. The plan proposed to rehabilitate SAV habitat west of Oregon Inlet through the construction of a series of temporary wave breaks (wooden fencing) that would reduce wave energy and facilitate seagrass growth behind the wave breaks. SAV from surrounding sites were to be transplanted into the project area in order to stimulate further plant growth. The mitigation sites were to be monitored for five years, after which the wave breaks were to be removed.

NCDOT reviewed this plan with the project's merger team at a meeting in November 2012; the team discussed several issues with the plan, including: site monitoring following removal of the wave breaks, public access concerns, maintenance of the temporary wave breaks, and how the mitigation project would be permitted. Following the meeting, CSA completed the bathymetric surveys and wave modeling of the proposed mitigation site as well as the wave break design. Construction of the mitigation project was placed on hold in 2013 pending the outcome of B-2500 project litigation.

In 2014, NCDOT met individually with representatives of NCDCM, NMFS, and the USACE to discuss the proposed mitigation plan (as presented in 2012) and any concerns each agency would have moving forward. One of the issues discussed was the location of any seagrass donor sites and the reference sites to be monitored for comparison; NCDCM was particularly concerned that there had been no monitoring plan with defined success criteria included in the mitigation proposal. Additional issues discussed included the wave break design and material to be used, the amount and type of mitigation credit to be provided, and the planned removal of the wave break after five years. NCDCM was concerned about the effectiveness of the proposed mitigation if the wave breaks were removed after five years and recommended that, rather than using the proposed wooden fencing, the wave breaks be constructed of rock or other similar material that could serve as out-of-kind mitigation (oyster reef) in addition to the in-kind mitigation to be provided by project. The wave breaks would be left in place after the initial five year monitoring period. In response to the NCDCM meeting, NCDOT asked CSA to prepare a revised mitigation proposal in which the wave breaks were constructed of rock or similar material.

Mark Fonseca of CSA reviewed the revised SAV mitigation proposal. Changes in seagrass coverage have been correlated to changes in wave exposure, and research has been conducted in order to develop the relationship between the wave energy regime and seagrass landscape pattern. The goal of this mitigation project is to reduce the

amount of wave energy within the project site (estimated as much as 99%) to allow for a more continuous cover of seagrass to take hold. CSA studied the dredge spoil islands west of Oregon Inlet and the seagrasses that can be observed to occur on the lee side (southwest) of each island in order to determine the best location for the mitigation site. The design and location of the new wave break was developed by forecasting the wave conditions and the associated change in seagrass cover that was expected to occur with the presence of the wall; four different wall orientations were assessed, with the east-west orientation forecasted to provide the highest increase in seagrass. Each foot of wall is forecast to provide an additional 150 square feet of seagrass cover. Seagrass within the wall footprint will be relocated within the mitigation site so that there is no net loss of seagrass.

The mitigation site will be monitored for five years as originally proposed. Monitoring will include wave gauge measurements at the proposed adjacent reference areas to record wave characteristics, and a digital elevation model of the mitigation site will be developed in order to document any changes in sediment coverage. The site will be monitored for seagrass coverage as well as epibiota on the wave break, with the performance of the project evaluated by the total coverage of each.

Mark noted that, in addition to wave energy, another impediment to SAV growth is the presence of sting rays and other biological disturbances. For this reason, seagrass patches both within different wave reduction zones behind the wave break and the reference areas will be temporarily armored to prevent interference from sting rays. Understanding the difference in the expansion rate of patches among armored and unarmored patches will address an important information gap for North Carolina regarding the relative influence of waves and bioturbation on seagrass patchiness. This armoring will consist of welded wire mesh that will lay flat on the reference seagrass patch and will be held in place with rebar staples. The armoring will be removed when patches begin to coalesce with adjacent seagrass cover. Travis Wilson raised a concern about the potential for birds to become entangled in the armored areas.

Randy Boyd and Jason Hales of SEPI Engineering & Construction discussed the design of the proposed wave break. Rather than constructing the wave break with rock (which would require a significantly larger footprint and seagrass impact), wave attenuation structures called “Ecosystem Units” by Reefmaker will be used in the wall design. The Ecosystem Unit consists of a series of square concrete discs that are held together by a center fiberglass pile; each square disc above the bottom foundation disc is embedded with large rock that increases the total surface area that could be used by oysters and other species. Each disc measures approximately 5 feet by 5 feet, and it is anticipated that a total of four discs will be used on each structure; the total structure height is approximately 4 feet. The individual units will be located a few inches apart from each other in order to increase the available surface area on each structure. The Ecosystem Units require little to no maintenance once installed. These structures have been used at

a project site in Crystal River, Florida, and they are proposed for use in a project at Ft. Anderson, North Carolina.

SEPI provided surface area calculations for two different wave break lengths; an Ecosystem Unit structure 600 feet in length (consisting of 120 Reefmaker units) is estimated to provide up to 29,160 square feet of surface area (assuming a four-disc design). A structure 900 feet in length (180 units) is estimated to provide up to 43,740 square feet of surface area.

The group discussed potential construction issues with the Ecosystem Units. Minimal installation disturbance is expected with these units; the main concern will be timing the work with the tide in order to minimize disturbance to the Pamlico Sound bottom. NCDOT noted that construction barges should not be allowed to sit on the sound floor at any one location for too long and that a construction plan outlining steps to minimize disturbance be included with the permit modification request.

Mark reviewed the mitigation to be provided by the proposed project. The proposed 600-foot Reefmaker structure would provide approximately two additional acres of SAV, with a 0.5-acre of hard surface habitat. The 900-foot Reefmaker structure would provide approximately 3 acres of net SAV, with 0.75 acre of hard surface habitat.

Discussion

Shane Staples asked about the reference sites to be monitored as part of the project; these will be randomly placed all around the structure using a stratified random design. Responding to a question from Fritz Rohde, Mark noted that the forecasted change in SAV coverage included in Table 4 of the meeting handout is likely a conservative estimate. Travis Wilson asked whether, due to the potentially ephemeral nature of the area west of Oregon Inlet and the nature of channel migration, deeper channels could migrate into the structures and if NCDOT considered expanding an existing shoal island as part of the mitigation. Mark noted that, based on review of aerial imagery, the shoal adjacent to the project site appears to be relatively stable. Since the mitigation site is set several hundred feet south and east from the channel, no impacts from channel migration are anticipated. Expansion of the existing shoal island was not considered. Randy added that the most active area for channel migration within Oregon Inlet is near the fishing center on Bodie Island. Doug Huggett asked if the construction of the wave break would create channels on the north side of the structure, potentially causing scour and undermining the structure itself. Mark noted that the wave modeling completed to date indicated that the structure will absorb any wave energy, with little wave refraction anticipated. The structure will be monitored for continued stability, and aerial photography will be used to determine whether changes in the inlet area could threaten the stability of the project.

Fritz asked if any accumulation of sand is expected around the structures, similar to what is observed at “living shoreline” projects. Mark responded that this was not expected, since the structures are porous and will allow for sediment migration. There is less wave refraction expected at this site (due to the surrounding flat slope) than on projects that are directly adjacent to a sloped shoreline.

The mitigation site will need to be marked for navigation purposes, but it was unclear whether a separate USCG approval will be needed. NCDCM will look into the conditions of the NC Division of Marine Fisheries research lease to see what public access permit conditions, if any, should be included in the NCDCM permit for this mitigation work. The research lease limits public access during a project’s establishment and monitoring period, thereby benefitting the mitigation site.

NMFS noted that it would not recommend that out-of-kind mitigation credit should be approved for construction of the wave break. Fritz noted that he is participating in the permit review of the Ft. Anderson project and prefers the proposed structures over the previously proposed wooden fencing. However, NCDOT is including the construction of the wave break as out-of-kind mitigation in its proposal, since it does provide a benefit to essential fish habitat. LeiLani Paugh noted that the overall project is being implemented in order to advance the science of SAV restoration, and the use of the hardened structure to provide out-of-kind mitigation strengthens NCDOT’s overall mitigation proposal. Doug Huggett noted that it was NCDCM’s suggestion to use this type of wave break design in order to provide additional mitigation, providing NCDOT with some latitude if the research project was not successful. Doug also mentioned that oyster habitat restoration has commonly been used for SAV out-of-kind mitigation due to the lack of science and ability to truly restore SAV. NCDCM will consider the construction of the wave break as out-of-kind mitigation. NCDCM is currently supporting “living shoreline” projects and similar habitat restoration efforts such as oyster reef restoration.

In response to a question about the proposed timeframe of the mitigation work, LeiLani noted that the project will proceed forward as soon as possible. Once the merger team has submitted any comments on the information provided at today’s meeting, NCDOT will submit a final SAV mitigation plan, along with a construction schedule, for permit approval. Tracey Wheeler stated that the USACE will not be the primary permitting agency for this effort, as the work is not mitigating for impacts to USACE- jurisdictional resources. Doug Huggett noted that NCDCM can’t give formal mitigation plan approval until the permitting process nears completion. NCDCM needs to determine whether a public notice for this mitigation work will be required in order to assess its impact to the public. If a public notice is needed, NCDOT will be required to locate and mark the boundaries of the site so that those who use the area can comment on the proposal. Typical markings include PVC pipes and signs that state the proposed research activity and direct commenters to NCDCM with questions.

Action Items

NCDOT will provide meeting attendees with copies of the meeting presentations and handouts as well as any supporting documentation. A summary of this meeting will also be provided to attendees. LeiLani requested that any comments on the new SAV mitigation proposal be provided by **Friday, August 14**. Once any comments are received, NCDOT will develop a final mitigation plan for permit approval.



Transportation

PAT McCRORY
Governor

NICHOLAS J. TENNYSON
Secretary

MEMO TO: January 14, 2016 Bonner Bridge Merger Team CP 4A Meeting Attendees

FROM: Nora McCann
Project Development and Environmental Analysis Unit

DATE: March 30, 2016

SUBJECT: Meeting Summary – January 14, 2016 NEPA/Section 404 Merger Team Meeting: CP 4A for Phase IIb of the Bonner Bridge – NC 12 Transportation Management Plan (TIP No. B-2500B)

January 14, 2016 Merger Team Concurrence Point 4A Meeting on Phase IIb of the Bonner Bridge Replacement Project (B-2500B)

The following people were present:

Merger Team Members:

Tracey Wheeler	US Army Corps of Engineers (USACE)
Gary Jordan	US Fish & Wildlife Service (USFWS) – Raleigh Field Office
Art Beyer	USFWS – Pea Island National Wildlife Refuge
Cynthia Van Der Wiele	US Environmental Protection Agency (USEPA)
Ken Riley	National Marine Fisheries Service (NMFS)
Steve Thompson	National Park Service (NPS) <i>(by phone)</i>
Doug Huggett	North Carolina Department of Environmental Quality (NCDEQ) – Division of Coastal Management (DCM)
Garcy Ward	NCDEQ – Division of Water Resources (DWR)
Travis Wilson	NC Wildlife Resources Commission (NCWRC)
Angela Welsh	Albemarle Rural Planning Organization (RPO) <i>(by phone)</i>
Nora McCann	North Carolina Department of Transportation (NCDOT) – Project Development and Environmental Analysis (PDEA)
Ron Lucas	Federal Highway Administration (FHWA)

Other Attendees:

Hal Pitts	US Coast Guard (USCG) <i>(by phone)</i>
Monte Matthews	USACE
Pace Wilber	NMFS <i>(by phone)</i>
Fritz Rohde	NMFS
Cathy Brittingham	NCDEQ – DCM
Shane Staples	NCDEQ – DCM - Fisheries
Greg Daisey	NCDEQ – Division of Marine Fisheries (DMF) <i>(by phone)</i>



Rob Hanson	NCDOT – PDEA
Brian Yamamoto	NCDOT – PDEA
Morgan Weatherford	NCDOT - Natural Environment Section
Leilani Paugh	NCDOT - Natural Environment Section
Neil Medlin	NCDOT - Natural Environment Section
Kathy Herring	NCDOT – Natural Environment Section
Chris Rivenbark	NCDOT – Natural Environment Section
Michael Turchy	NCDOT – Natural Environment Section
Gary Lovering	NCDOT – Roadway Design Unit
Mark Staley	NCDOT – Roadside Environment Unit
Paul Atkinson	NCDOT – Hydraulics Unit
Shawn Mebane	NCDOT – Division 1
Kevin Fischer	NCDOT – Structures Management Unit
David Hering	NCDOT – Design/Build

Private Engineering Firm Representatives:

Beth Smyre	Dewberry
John Page	WSP Parsons Brinckerhoff
Brian Byfield	WSP Parsons Brinckerhoff

Meeting Purpose

To reach concurrence on avoidance and minimization measures associated with the Least Environmentally Damaging Practicable Alternative (LEDPA) for Phase IIb (Rodanthe Breach area) of the Bonner Bridge – Parallel Bridge Corridor with NC 12 Transportation Management Plan Alternative.

The meeting opened at 1:10 pm.

Discussion

USACE called the meeting to order. Nora McCann opened the meeting stating its purpose, outlining the agenda, and asking attendees to introduce themselves. Nora proceeded to review the meeting packet, highlighting the map showing the LEDPA: 2014B Bridge on New Location Alternative (yellow line on Attachment A of the meeting packet). Nora said the LEDPA would:

- Bridge soundside wetlands, including Coastal Area Management Act (CAMA) wetlands, at both its southern and northern ends.
- Have a 0.41 acre permanent fill impact to jurisdictional wetlands in the Rodanthe community and no permanent fill in jurisdictional wetlands in the Pea Island National Wildlife Refuge (the Refuge). The current design has no temporary fill in pacts within jurisdictional wetlands.
- Involve no dredging or disposal of dredged material in the submerged aquatic vegetation (SAV) habitat.
- Construction would use work bridges or utilize top down construction

Key points of Nora’s review of the project, meeting attendee comments, and NCDOT responses are summarized as follows:

1. Wetland and Jurisdictional Waters Impacts

NCDEQ – DCM asked that the narrative on coastal wetland impacts in the packet text be added to Table B-2.

The narrative on coastal wetland impacts appeared on page 2 of the packet text. Table B-2 presents the USACE jurisdictional wetland impacts.

2. Other LEDPA Impacts, including SAV Impacts

Nora discussed impacts to non-jurisdictional resources described in the packet, noting that the LEDPA minimizes impacts to SAVs.

USACE noted that the USACE might not sign the concurrence form today because of the reference to the possibility of the Phase I SAV mitigation site being incorporated into NCDOT’s existing Umbrella Mitigation Banking Instrument (UMBI).

In the discussion that followed it was said that the packet should have referenced Phase IIb and not Phase I, and that the packet only referenced the UMBI as a possibility to be followed up. USACE requested that the wording not be used in the permit application. NCDOT agreed.

USACE also affirmed that the SAV mitigation for Phase IIb would be a separate USACE permit.

3. Mitigation on the CP4A Concurrence Form and Mitigation Meetings

NCDEQ – DCM asked whether it was premature to mention mitigation in the CP 4A concurrence form. *NMFS* said that they would like to see in the concurrence form an affirmation of NCDOT’s commitment to finalizing a SAV mitigation plan. *NCWRC* said mitigation previously has been included in CP 4A concurrence forms.

It was agreed by the Merger Team that mitigation planning could be noted in the CP 4A form. In the course of the discussion changes in the form’s wording were agreed upon.

NCDEQ – DCM said that meeting notes from mitigation meetings to date were not included in the packet, and this precludes the Merger Team from understanding all the nuances of the discussions. *NCDEQ – DCM* requested that future special small group meetings have an open invitation for Merger Team members to attend if they desire. This would help minimize the potential for conflicts at future concurrence point meetings. NCDOT agreed.

David Hering said that the Request for Proposals document (RFP) for the design-build contractor will include as maximums the impacts to waters and other resources identified in the Record of Decision. It is hoped that the design-build contractor will find ways to reduce impacts. The specifics of the project design will not be finalized until after a contractor is selected. Merger Team members could be given the opportunity to meet with individual contractors before the selection of the contractor to discuss their strategies for further minimizing impacts, similar to what was done for B-2500 Phase I. *NMFS* indicated they were agreeable to this potential opportunity [This meeting was ultimately held on April 2016.]

Lelani Paugh suggested some revised wording for the SAV mitigation bullet in the CP 4A concurrence form. Options were discussed and the Merger Team agreed to: “Regarding SAV’s, any avoidance, minimization, and mitigation issues will be resolved with the NEPA/404 Merger Team prior to final permit application.”

4. Cultural Resources

USACE asked why the sunken barge in the LEDPA alignment was being avoided during construction since it was not eligible for the National Register. NCDOT noted that: 1) there was no archeological value in disturbing it, 2) leaving it alone would not negatively affect constructability, 3) leaving it alone would help reduce costs, and 4) allowing it to remain in place would mean less environmental impact than removal.

NCDEQ – DCM asked if the previously agreed upon bridge rail designed to minimize sea turtle impacts had changed, and whether the USFWS and SHPO were aware of the railing design. NCDOT said that the 36-inch concrete parapet with two-bar metal railing was the same design previously proposed for the Phase IIa long-term alternative.

5. Parking Lot Replacement

Nora said that two locations at the north end of the Phase IIb project are being discussed with the Refuge to replace the ocean-side NC 12 accessible parking lot being lost by the construction of the new Phase IIa interim bridge. The new lot will have the same number of spaces as the current lot. Beth Smyre clarified in response to Merger Team questions that the Phase IIa interim bridge would terminate north of the Refuge boat ramp, and its parking lot and its access would not be affected by the project.

USFWS – Refuge said that the Refuge was open to including in the Phase IIb Special Use Permit NCDOT’s use of the proposed parking lot site as a staging area for Phase IIb construction.

NCDEQ – DCM said that the new parking lot must meet CAMA set-back requirements and asked to be involved in site planning meetings. NCDOT agreed to involve NCDEQ – DCM and indicated that both potential parking lot sites were in locations behind the forecast 2060 high-erosion shoreline.

6. Other Opportunities for Avoidance and Minimization

NCDEQ – DCM suggested wording changes to the first bullet in section 5 of the packet. The Merger Team agreed to the following new wording: “Minimize temporary wetland impacts to the extent practicable. NCDOT will work with the regulatory agencies on the location and scope of any post-construction monitoring of any temporary wetland impact sites.”

USFWS – Refuge asked that the commitment to return, to the Refuge, the NC 12 easement bypassed by the LEDPA be affirmed in the CP 4A form. David said that a new easement deed will be developed after the project is let, similar to the new deed developed for Phase I. The Merger Team agreed that the following would be added to the concurrence form: “Following completion of new bridge construction, NCDOT will return the portion of the existing NC 12 easement within the Refuge, not needed for transportation purposes, to the USFWS – Refuge.”

7. Additional CAMA-Related Issues

NCDEQ – DCM asked if the sandbag dune would be removed where it protects NC 12 in the Refuge and in Rodanthe. NCDOT said it only will be removed where it protects NC 12 in the Refuge.

NCDEQ – DCM said that a turnaround where NC 12 would end at the Refuge border would not meet CAMA setback requirements and an exception would be needed. David said no parking lot is planned where NC 12 will end at the Refuge border, just a means for motor vehicles to turn around.

NCDEQ – DCM said that a retaining wall is proposed at the northern approach to the bridge and asked for confirmation that it would be used to support bridge approach fill. David said it would be like the retaining walls used with the new Oregon Inlet bridge (Phase I). It would be a sheet pile wall containing approach road fill. *NCDEQ –DCM* said that sounded fine, but they needed to see the details. David said he will provide a copy of the design-build RFP to *NCDEQ – DCM*, and it could be discussed at a pre-CP 4B meeting.

Roll Call on Concurrence

USACE took a roll call to ask the Merger Team if they were willing to sign the CP 4A concurrence form with the changes agreed upon in the meeting.

- *USACE* Yes
- *USEPA:* Yes
- *NMFS:* Yes
- *NPS:* Before they can sign, they would like NCDOT to brief two new staff on the SAV impact in the 150 feet off-shore of

the Refuge boundary that is within NPS jurisdiction. NCDOT agreed.

- **USFWS – Refuge:** Yes; they expected to sign, but the Merger Team representative needed to first confer with the Refuge Manager.
- **USFWS -- Raleigh:** Yes, but noted that Attachment C of the packet did not note all of the protected species impacts associated with the B-2500B project.
- **NCDEQ – DCM:** Yes, with agreed changes to the concurrence form
- **NCDEQ – DWR:** Yes, but asked when the finalization of stormwater mitigation would occur. David said that stormwater mitigation will be addressed in the design-build RFP and will take into account stormwater mitigation agreements for Phase I. David said he would provide Merger Team members with a link to the RFP. NCDEQ – DWR noted that “treatment of stormwater” should be addressed.
- **NCWRC:** Yes
- **SHPO:** Absent
- **Albemarle RPO:** Yes
- **FHWA:** Yes
- **NCDOT:** Yes

Concurrence Form Signing

Those in the room that were prepared to sign signed the revised concurrence form. The concurrence form with all signatures is attached.

Next Steps

Nora indicated that the next steps are:

- Completion and distribution of a revised Phase IIb EA/Section 4(f) Evaluation
- Public meeting
- Public and agency comment period
- Completion of the Record of Decision (ROD)

The meeting was adjourned at approximately 2:30 PM.

Attachments:

Signed NEPA/404 Merger Project Team Meeting Agreement, Concurrence Point No. 4A: Avoidance and Minimization



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

June 18, 2015

MEMORANDUM TO: Brian Yamamoto, NCDOT

FROM: Doug Huggett *Doug Huggett*
Major Permits Coordinator
N.C. Division of Coastal Management

SUBJECT: Merger Concurrence Point 3 (LEDPA) for B-2500 Phase IIb

As was stated verbally at the June 17th 2015 merger team meeting for the above referenced project, the North Carolina Division of Coastal Management (NCDCM) was very involved in working with the North Carolina Department of Transportation (NCDOT) and our merger team partners in identifying the two alternatives previously chosen to be carried forward for detailed study. After reviewing both alternatives from a coastal resource management perspective, and based upon potential Coastal Area Management Act (CAMA) permitting obstacles associated with the Bridge in Existing Alignment alternative, NCDCM fully supports the designation of the Phase IIb Bridge on New Location Alternative as the Least Environmentally Damaging Practicable Alternative (LEDPA). Our support was further indicated by our signature yesterday on the Phase IIb Concurrence Point 3 form. It should be pointed out that our support for this alternative should not be interpreted as an indication of any predetermination of final CAMA permitting decisions.

The Division also stands ready to provide NCDOT with whatever assistance is needed in order to ensure that the final chosen alignment and design avoids and minimizes aquatic and public trust impacts to the maximum extent practicable.

Please pass this memorandum on to the other merger team participants for this project. As always, if you have any questions or need any additional information on this or any other issue, please do not hesitate to contact me at doug.huggett@ncdenr.gov or at (252) 808-2808, extension 212.

cc: Braxton Davis, NCDCM
Christy Goebel, NCDOJ



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

July 11, 2013

Mike Bryant
U.S. Fish & Wildlife Service
Pea Island National Wildlife Refuge
P.O. Box 1969
Manteo, North Carolina 27954

Subject: Minor Modification of NC 12 Easement for Phase IIb of Bonner Bridge Replacement Project (TIP No. B-2500B), Dare County, North Carolina

Dear Mr. Bryant:

In November 2012, the Merger Team for the subject project selected two bridge alternatives to be carried forward for detailed study (see Figure 1). One of these alternatives, called the Rodanthe- Bridge on New Location alternative, involves the construction of a bridge extending west of the existing NC 12 roadway into Pamlico Sound. Construction of this alternative would require new easement within the Pea Island National Wildlife Refuge (Refuge) between the existing NC 12 easement and the Refuge's western boundary. This letter is to request your views on whether the new easement needed for the Rodanthe- Bridge on New Location alternative could likely be determined a minor modification of the existing NC 12 easement. We also request your views on the scale and nature of any mitigation that may be related to such a determination.

NCDOT is currently preparing an Environmental Assessment (EA) in order to identify changes to the project area since the 2010 Record of Decision and to assess the impacts of the two bridge alternatives. While FHWA and NCDOT will likely recommend a preferred alternative in the EA, the Merger Team will make the final decision on the project's Least Environmentally Damaging Practicable Alternative (LEDPA) after the EA is issued and associated public involvement is completed. If the Rodanthe- Bridge on New Location alternative is selected for construction, then NCDOT will complete the final design for this alternative and will submit a formal request to your agency for a minor modification of the easement.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1548 MAIL SERVICE CENTER
RALEIGH NC 27699-1548

TELEPHONE: 919-707-6000
FAX: 919-250-4224

WEBSITE:
[HTTPS://CONNECT.NCDOT.GOV/RESOURCES/ENVIRONMENTAL/PAGES/DEFAULT.ASPX](https://connect.ncdot.gov/resources/environmental/pages/default.aspx)

LOCATION:
CENTURY CENTER, BUILDING A
1000 BIRCH RIDGE DRIVE
RALEIGH NC 27610

Proposed New Easement

The Rodanthe- Bridge on New Location alternative will require approximately 2.87 acres of new easement west of existing NC 12 at the proposed bridge's northern terminus (see Figure 2). The location and design of the northern terminus was developed in consultation with your staff, and NCDOT is proposing an alignment that minimizes impacts to the Refuge to the greatest extent possible while conforming to the department's design standards. Based on NCDOT surveys of the project corridor, the proposed new easement contains the following biotic communities:

Upland	Wetland
Maritime grassland	Salt shrub/grassland
Maritime shrub/grassland	Salt grassland
	CAMA marsh
	Maritime shrub/grassland
	Maritime shrub thicket

NCDOT is in the process of calculating the acreage of impact for each biotic community for the project; this information will be included in the upcoming EA.

In addition, the proposed new easement would cross the southeastern corner of the former wetland mitigation site that was constructed by NCDOT in the mid-1990's. The alternative is designed so that NC 12 would be entirely on a structure once it leaves the existing NC 12 easement, such that any impacts to these areas would be limited to the placement of bridge piles and shading from the bridge deck. The northern roadway approach and associated fill would be within the existing NC 12 easement.

Mitigation

It is understood that mitigation for the use of new Refuge land would be required if the U.S. Fish & Wildlife Service (USFWS) approved the Rodanthe- Bridge on New Location alternative as a minor modification to the existing easement. Based on discussions during a meeting with you on June 25, 2013, NCDOT proposes the following conceptual mitigation measures:

Return of Existing NC 12 Easement: Based on the current preliminary design of the alternative, approximately 18.68 acres of the existing NC 12 easement between the northern bridge terminus and the Refuge's southern border with Rodanthe would no longer be needed for NC 12 and could be returned to the USFWS. Once the new bridge is open to traffic, NCDOT would restore the area by removing pavement and sandbags and conducting any additional grading work or planting of native species as directed by your office.

Nourishment of Estuarine Shoreline: NCDOT would work with the USFWS and the appropriate permitting agencies to develop a plan to place compatible material along the estuarine shoreline within the Refuge north of Rodanthe. The intent of this nourishment would be to create additional wetland areas on the west side of the Refuge and aiding the island's natural overwash process. Only material determined to be compatible by the USFWS would be placed along the estuarine shoreline, and all work would be done at the direction of USFWS staff. Jetting spoil material from bridge construction at both the Pea Island inlet and Rodanthe sites, or beach sand from the proposed temporary beach nourishment project, could be used for this purpose. NCDOT will need to work with the USFWS in order to determine how the jetting spoil material and the beach sand could be transported and placed along the estuarine shoreline in a manner that minimizes further impacts to the Refuge. NCDOT would also need approval from the appropriate federal and state permitting agencies. In order to determine the feasibility of this option, NCDOT has scheduled a meeting with the appropriate permitting agencies for Thursday, July 25, 2013 at 1:00 pm at the NCDOT Century Center Complex in Raleigh. Your office has been included in the invitation to this meeting.

Improvements to Former NCDOT Mitigation Site: In the event that nourishment of the estuarine shoreline is determined not to be a feasible mitigation option, NCDOT would work with the USFWS on appropriate updates to the former NCDOT wetland mitigation site on the west side of NC 12; these updates could include site grading and/or planting of additional native species. Though the site is within the Refuge, any work on this site would need to be coordinated with the U.S. Army Corps of Engineers, the N.C. Division of Coastal Management, and other appropriate agencies, as this site was developed as wetland mitigation for a previous NCDOT project.

If the Rodanthe- Bridge on New Location alternative is selected by the Merger Team as the alternative for this phase of the project, NCDOT will submit a detailed request for a minor modification of the existing easement once the NEPA process is completed. This request will include a metes and bounds description of both the proposed new easement and the easement to be returned, a summary of the impacts to each of the biotic communities within the proposed new easement, and a detailed mitigation proposal based on the ideas proposed in this letter. While NCDOT realizes that the USFWS cannot make an official determination prior to the full application, we request your input on the likelihood that this alternative could be deemed a minor modification of the existing NC 12 easement. We would also appreciate your input on the appropriate scale and nature of any associated mitigation, including the measures discussed in this letter. We ask that you respond to this request by Wednesday, July 31, 2013, so that we may consider your response in the development of the EA for this project.

Thank you for your attention to this request. If you have any questions about this request, please contact Ms. Beth Smyre, Project Planning Engineer, at (919)707-6043 or bsmyre@ncdot.gov.

Sincerely,



Gregory J. Thorpe, Manager
Project Development and Environmental Analysis Unit

GJT/eas

Attachments

cc: (electronic copy) w/ attachments:
Victor Barbour, NCDOT-Technical Services
Terry Gibson, NCDOT- Division of Highways
Deborah Barbour, NCDOT- Preconstruction
Jerry Jennings, NCDOT- Division 1
Rob Hanson, NCDOT- PDEA
Phil Harris, NCDOT- PDEA
Clarence Coleman, FHWA



PHASE IIb DETAILED STUDY ALTERNATIVES



**NEW PERMANENT EASEMENT WITH THE BRIDGE
ON NEW LOCATION ALTERNATIVE**

Figure
2



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Coastal North Carolina National Wildlife Refuges Complex

Post Office Box 1969

Manteo, North Carolina 27954

(252) 473-1131 473-1668 (fax)

July 22, 2013

Gregory J. Thorpe, Manager
North Carolina Department of Transportation
Project Development and Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548

Subject: Request for a response on suggested Minor Modification of NC 12 Easement for Phase IIb of Bonner Bridge Replacement Project (TIP No. B-2500B), Dare County, North Carolina

Dear Mr. Thorpe:

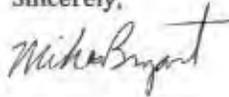
In your July 11, 2013 letter to me concerning the need for a new easement for the Rodanthe-Bridge on New Location alternative for Phase IIb of the Bonner Bridge Replacement Project (TIP No. B-2500B) in Dare County North Carolina on Pea Island National Wildlife Refuge you asked for my views on determining whether the alternative is a minor modification of the existing NC 12 easement and on the scale and nature of any mitigation that may be related to such a determination. You requested comments by July 31, 2013.

The proposed new easement requires 2.87 acres of easement west of existing NC 12 at the proposed bridge's northern terminus. The location and design was developed in consultation with my staff and it appears that the designed alignment minimizes impacts to the Refuge to the greatest extent possible while conforming to NCDOT's design standards. It could likely be determined a minor modification of the existing NC 12 easement if adequate mitigation can achieve no net loss of habitat quantity and quality. It appears to be necessary for safety reasons.

As you note, we met with Ms. Beth Smyre, NCDOT Project Planning Engineer, on June 25, 2013 at which time we discussed three conceptual mitigation measures. I appreciate that NCDOT would restore the approximately 18.68 acres of existing NC 12 easement that would no longer be needed for NC 12 once the new bridge is open for traffic. You describe the restoration as removing pavement and sandbags and conducting any additional grading work or planting of native species as directed by my office. This form of restoration on these acres would be appropriate mitigation. I also appreciate that NCDOT is exploring the nourishment of estuarine shoreline on the Refuge and my staff will call in to the July 25, 2013 at 1:00 pm scheduled meeting on this subject with the appropriate permitting agencies. This form of nourishment would be appropriate mitigation especially for wetland impacts. I'm less inclined to think that improvements to the former NCDOT wetland mitigation site on the west side of NC 12 would be appropriate. The Refuge is narrowing in width from loss on both shores. Blowing sand, and, possibly, over-wash sand are trapped in the wetland mitigation site changing it over time to an upland site, thus losing the wetland mitigation values. Unimpeded, the natural coastal process would bypass sand to the sound side shore and grow sound side shore line as the ocean shore line erodes – adding wetland acres to the Refuge. I would need more information to convince me that reworking an NC 12 relocation, former wetland mitigation site would lead to a sustainable, no net loss of quantity and quality of habitat.

In my judgment we need the sound side shore line to grow west to mitigate for loss on the ocean shore line. Thank you for your attention to my response. If you have questions about this response, please contact either Dennis Stewart, Refuge Wildlife Biologist (ext 231), Scott Lanier, Deputy Refuge Manager (ext 223), or me at (252) 473-1131.

Sincerely,



Michael R. Bryant, Project Leader

Cc: (electronic copy):
Victor Barbour, NCDOT Technical Services
Jerry Jennings, NCDOT - Division 1
Beth Smyre, Project Planning Engineer
Pete Jerome, FWS, Refuge Supervisor
David Viker, FWS, Regional Chief of Refuges - Southeast Region

Rodanthe- Bridge on New Location Alternative

New Easement Needed	Easement to be Returned
2.87 acres	18.68 acres

Fill Impacts	Acres
Wetland maritime grassland	1.29
Wetland maritime shrub/grassland	0.11
CAMA Wetlands	0
Total	1.40
Pile Impacts	
Wetland maritime shrub thicket	0.04
Wetland maritime shrub/grassland	0.00
Wetland salt grassland	0.01
Wetland salt shrub/grassland	0.00
CAMA marsh	0.03
Total	.08
Open Water Shading SAV Impact*	8.56
Open Water Pile SAV Impact*	1.76

*Total open water impact multiplied by 0.63

Appendix B

**Public Involvement Materials
and Scoping Correspondence**

B. Public Involvement Materials and Scoping Correspondence

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Bonner Bridge Update

DATE COUNTY, NORTH CAROLINA

TIP PROJECT NO. B-2500

NCDOT STARTS PHASE II OF BONNER BRIDGE REPLACEMENT PROJECT

Hurricane Irene hit the North Carolina coast on Aug. 27 and breached NC 12 in two locations – northern Rodanthe and within the Pea Island National Wildlife Refuge. The North Carolina Department of Transportation (NCDOT) has completed temporary repairs at the two breach sites and reopened NC 12 to traffic on Oct. 10. With traffic restored to the area, NCDOT has started work on long-term solutions for these two sites, which are considered Phase II of the Bonner Bridge Replacement Project. Before any decisions are made on long-term fixes, NCDOT wants to hear what the citizens think about the design options under consideration.

PUBLIC WORKSHOPS SCHEDULED

Public workshops are scheduled for Dec. 5 in Manteo and Dec. 6 in Rodanthe. These workshops will provide the public with an opportunity to learn more about the design options under consideration for each breach site. **The same information will be available at both workshops.**

The workshops will be informal, with the public welcome to drop in any time between 4 p.m. and 7 p.m. to view displays of the design options. Study team members will be available to explain them and answer any questions. The public is urged to share their ideas, thoughts, and suggestions with study team members.

If you cannot attend a workshop, you may write the study team or call the toll-free project information line with your comments or questions. See the second page of this newsletter for the names and numbers of the study team contacts.

NCDOT will provide auxiliary aids and services under the Americans with Disabilities Act for disabled persons who wish to participate in these workshops. Anyone requiring special services should contact the study team.

LONG-TERM OPTIONS UNDER CONSIDERATION FOR BOTH BREACH SITES

The design options studied as part of the Bonner Bridge Replacement Project represent the range of what could be built in future phases along NC 12 between Oregon Inlet and Rodanthe. Using this information, NCDOT has established several possible options for fixing the two breaches for the long term.

For the Pea Island breach, these options include:

- Beach renourishment;
- Building a bridge within the existing NC 12 easement; and
- Building a bridge or road on a new location to the west of the existing road.

For the Rodanthe breach, these options include:

- Beach renourishment;
- Building a bridge within the existing NC 12; and
- Building a bridge or road on a new location to the west of the existing road, possibly extending into Pamlico Sound.

Continued on next page

Bonner Bridge Update

November 2011

Long-Term Options Under Consideration for Both Breach Sites (continued from page 1)

After analyzing the changes to existing conditions in the project area as a result of Hurricane Irene, NCDOT will re-evaluate the impacts of these design options to determine the best long-term solutions for both breach sites. Comments received from state and federal environmental resource and regulatory agencies, as well as from the public, will also help guide the development of the Phase II designs.

BONNER BRIDGE REPLACEMENT STATUS

In the December 2010 Record of Decision (ROD) for the Bonner Bridge Replacement Project, NCDOT agreed to construct a new bridge over Oregon Inlet that is parallel to, and just west of, the current Bonner Bridge as Phase I of the project. The new bridge over Oregon Inlet is currently in the design phase, with construction scheduled to begin in January 2013. The new bridge is set to open to traffic in spring 2015.

For more information about the damage to NC 12 from Hurricane Irene and NCDOT's efforts to temporarily fix it, visit www.ncdot.org/travel/nc12recovery, follow our NC 12 Twitter feed at <http://twitter.com/NC12>, or go to our Repairing NC 12 blog at <http://nc12repairs.blogspot.com/>. You may also visit the Bonner Bridge Replacement Project web page at www.ncdot.org/projects/bonnerbridgerepairs.

Feel Free to Contact the Study Team

If you have any questions or wish to be added to our newsletter mailing list, please call **Bobby Norburn** or **John Page** on our **Toll-Free Project Information Line, 1-866-803-0529**. You may also write the study team at:

Ms. Beth Smyre
NC Department of Transportation
Project Development and
Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548
bsmyre@ncdot.gov

– or –

Mr. Bobby Norburn
Parsons Brinckerhoff
434 Fayetteville Street
Suite 1500
Raleigh, NC 27601
norburn@pbworld.com



North Carolina Department of Transportation
Project Development and Environmental Analysis Unit
Attention: Beth Smyre
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

WELCOME to the Bonner Bridge – Phase II Public Workshops

Monday, December 5, 2011

4:00 p.m. to 7:00 p.m.
 Dare County Administration Building
 954 Marshall Collins Drive, Manteo

Tuesday, December 6, 2011

4:00 p.m. to 7:00 p.m.
 Rodanthe-Waves-Salvo Community Center
 23186 Myrna Peters Road, Rodanthe

Thursday, January 5, 2012

5:00 p.m. to 7:00 p.m.
 Ocracoke Community Center
 1009 Irvin Garrish Highway, Ocracoke

PURPOSE OF PUBLIC WORKSHOP

Today's workshop is an important step in the North Carolina Department of Transportation's (NCDOT) procedure for making you, the public, a part of the project development process. The purpose of the workshop is to obtain public input on Phase II of the Bonner Bridge Replacement project. NCDOT is holding three workshops, but the same information will be available at all of the workshops.

Hurricane Irene hit the North Carolina coast on August 27, 2011 and breached NC 12 in two locations – northern Rodanthe and within the Pea Island National Wildlife Refuge. NCDOT completed temporary repairs at the two breach sites and reopened NC 12 to traffic on October 10, 2011. With traffic restored to the area, NCDOT has started work on long-term solutions for these two sites, which combined are considered Phase II of the Bonner Bridge Replacement Project. However, before any decisions are made on long-term fixes, NCDOT wants to hear what you think about the design options under consideration.

Today's workshop is intended to provide you with an opportunity to learn more about the design options under consideration for each breach site. The workshop will be informal, with the public welcome to drop in at any time during the scheduled hours to view displays of the design options. Study team members will be available to explain the design options and answer any questions. You are urged to share your ideas, thoughts, and suggestions with study team members at today's workshop. You may also make comments or ask questions by filling out the comment sheet attached to this handout and leaving it in the comment box, mailing it by January 20, 2012 to the study team at one of the addresses shown below, or calling the toll-free project information line (1-866-803-0529).

Ms. Beth Smyre
 NCDOT – Project Development
 and Environmental Analysis Unit
 1548 Mail Service Center
 Raleigh, NC 27699-1548
 E-mail: bsmyre@ncdot.gov

Mr. Bobby Norburn
 Parsons Brinckerhoff
 434 Fayetteville Street
 Suite 1500
 Raleigh, NC 27601
 E-mail: norburn@pbworld.com

After the comment period ends on January 20, 2012, all comments will be reviewed by the NCDOT Bonner Bridge project team. The information you provide will help NCDOT develop the project by including input from all stakeholders prior to project decisions being made. NCDOT considers a number of factors, including the public's comments, in making decisions.

PROJECT DESCRIPTION

NCDOT proposes to construct a bridge to replace the Herbert C. Bonner Bridge (Bonner Bridge) in Dare County, demolish and remove existing Bonner Bridge, and improve NC 12 between the community of Rodanthe and Oregon Inlet.

The Federal Highway Administration (FHWA) and NCDOT issued the decision document for the Bonner Bridge Replacement Project, which is called a Record of Decision (ROD), on December 20, 2010. It selected the Parallel Bridge Corridor with NC 12 Transportation Management Plan as the alternative for the project. This alternative includes:

- Construction of a new parallel bridge ("short bridge") across Oregon Inlet as soon as possible (Phase I of the project); and
- The implementation of a coastal monitoring program on Hatteras Island between Oregon Inlet and Rodanthe to determine when and what to build for future phases of the project.

As a result of the damage caused by Hurricane Irene, Phase II of the project will develop long-term solutions for the two sections of NC 12 breached during the storm. The coastal monitoring program will continue during the planning and implementation of Phase II to determine the areas that later phases of the project should address.

The Bonner Bridge Replacement Project study area, along with the location of Phases I and II of the project, is shown on Figure 1 on the next page.

SUMMARY OF HURRICANE IRENE REPAIRS

NCDOT completed temporary repairs to the damage caused by Hurricane Irene and reopened NC 12 to traffic on October 10 – just seven weeks after the storm hit. Six miles south of Oregon Inlet within the Pea Island National Wildlife Refuge, crews installed a temporary metal bridge to span the largest breach on the Refuge, while filling in the three smaller breaches with sand. The bridge is a two-lane Mabey Universal Bridge manufactured with a modular design that allowed it to be assembled quickly. Although the bridge is a temporary solution and will require frequent maintenance, its strength and durability will allow it to remain in place for many years to keep traffic flowing.

In Rodanthe, crews filled in the breach with sand and used sandbags to stabilize sections of the roadway. The dunes on the east side of the roadway that were damaged were repaired.

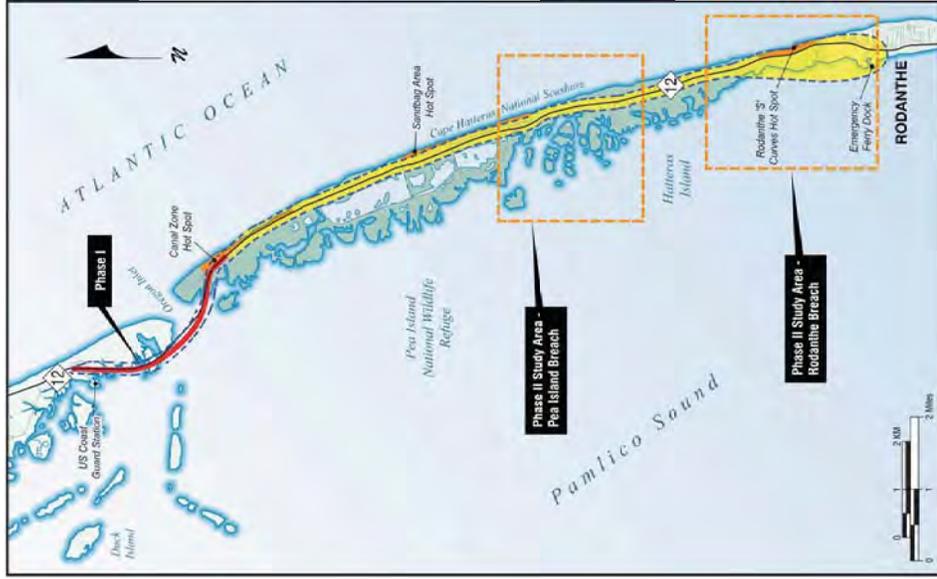


Figure 1

WHAT ARE THE ALTERNATIVES UNDER CONSIDERATION?

Under the Parallel Bridge Corridor with NC 12 Transportation Management Plan, the options that were studied for the section of NC 12 between Oregon Inlet and Rodanthe may be used in future sections of the project. These options were presented to the public as part of the Parallel Bridge Corridor at public hearings in November 2005, March 2007, and July 2010. Those options were called:

- Nourishment Alternative – NC 12 would remain in its current location, and beach nourishment (combined with dune enhancement) would be used to maintain an adequate protective beach and dune system. Nourishment would occur in four locations, likely repeated at four-year intervals.
- Road North/Bridge South Alternative – NC 12 would be relocated as a road west of the forecasted 2060 high erosion shoreline in the north end of the Refuge. At the south end of the Refuge and in Rodanthe, NC 12 would be placed on a bridge west of Hatteras Island.
- All Bridge Alternative – NC 12 would be relocated onto a bridge west of the forecasted 2060 high erosion shoreline in the north end of the Refuge. At the south end of the Refuge and in Rodanthe, NC 12 would be placed on a bridge west of Hatteras Island.
- Phased Approach Alternatives – NC 12 would be elevated in its current easement onto a series of bridges within the Refuge and in Rodanthe. There are two options for the Phased Approach in Rodanthe. The Phased Approach/Rodanthe Nourishment Alternative includes a bridge that ends just south of the Refuge border and the use of beach nourishment to stabilize NC 12 in Rodanthe. The Phased Approach/Rodanthe Bridge Alternative includes a bridge in Rodanthe that ends just north of the Rodanthe Historic District (no beach nourishment).

Based on the alternatives above, NCDOT has proposed several possible options for fixing the two breaches for the long-term.

For the Pea Island breach, these options include:

- Beach nourishment;
- Building a bridge within the existing NC 12 easement;
- Building a bridge on a new location to the west of the existing road; and
- Building a road on a new location to the west of the existing road.

For the Rodanthe breach, these options include:

- Beach nourishment;
- Building a bridge within the existing NC 12 easement;
- Building a bridge within the existing NC 12 easement and beach nourishment; and
- Building a bridge on a new location in Pamlico Sound.

These options are shown on Figures 2 and 3 on the following pages and in detail on the maps available at tonight's meeting.



Figure 2

After analyzing the changes to existing conditions in the project area as a result of Hurricane Irene, NCDOT will re-evaluate the impacts of these design options to determine the best long-term solutions for both breach sites. Comments received from state and federal environmental resource and regulatory agencies, as well as from the public, will be used to determine which options should be studied further and ultimately which options are selected for each site.

IMPACT ANALYSIS

Tables 1 and 2 on the following pages illustrate the potential impacts of each option for the two breach sites. The information presented here is based on studies conducted for the project prior to Hurricane Irene; NCDOT will update this impact information to account for the current environmental conditions for those options that are chosen for further study. Only the most current information available will be used to select the final option for each site.

Included in the analysis of each site in Tables 1 and 2 is a list of potential concerns with each option that could prohibit the option from being studied further. These concerns are based on comments to NCDOT made by either the federal and state agencies associated with the project, or by coastal engineers and scientists that NCDOT has consulted with during the life of the project.

PROJECT COSTS

The contract for the final design and construction of the new Oregon Inlet bridge (Phase I of the project) was awarded in July 2011 at a cost of \$215.8 million.

The project's Record of Decision (ROD) presented a range of costs for different options for maintaining NC 12 between Oregon Inlet and Rodanthe. At that time, the costs of the Parallel Bridge Corridor alternatives (not including the cost of the new Oregon Inlet bridge) were as shown in Table 3 on page 11.

Long-term bridging options for the Pea Island Beach site are estimated to cost between \$97 million and \$147 million (2006 dollars); these costs represent only the initial construction cost of a new bridge.

Long-term bridging options that span the Rodanthe Beach site only are estimated to cost between \$114 million and \$240 million (2006 dollars); these costs represent only the initial construction cost of a new bridge.

Because the beach nourishment and road relocation options extend beyond the immediate breach areas, cost estimates for those options are not immediately available.

Updated construction cost estimates for the two breach sites will be prepared for the long-term options that are chosen for further detailed study.



Figure 3

Table 1. Phase II Impacts – Pea Island Breach Area

	Beach Nourishment	Bridge on New Location	Road on New Location	Bridge within Existing NC 12 Easement
Community and Visual Impacts				
Visual Impact	None	Sizeable visual intrusion into the landscape of the Refuge.	None	Sizeable visual intrusion into the landscape of the Refuge.
Anticipated Need for Refuge Compatibility Determination	Compatibility Determination expected (for all alternatives that use Refuge lands outside the existing NC 12 easement).	Compatibility Determination expected (for all alternatives that use Refuge lands outside the existing NC 12 easement).	Compatibility Determination expected (for all alternatives that use Refuge lands outside the existing NC 12 easement).	No Compatibility Determination required.
Cultural Resource Impacts				
Pea Island National Wildlife Refuge (historic site)	No Adverse Effect.	Adverse Effect because the relocation of NC 12 would intrude into the existing dikes and ponds, and because of the elevation of the bridge as it passes through the Refuge.	Adverse Effect because the relocation of NC 12 would intrude into the existing dikes and ponds.	Adverse Effect because of the elevation of the bridge as it passes through the Refuge.
Parks and Recreation Impacts				
General Refuge Access	Little change in access. Refuge facilities protected from future beach erosion.	Direct access to some Refuge facilities lost.	Paved road access maintained but with some changes.	Direct access to some Refuge facilities lost.
Coastal Conditions Impacts				
Potential for Breach and Need for Closing Breach to Maintain NC 12	If additional breach occurs, breach would need to be closed.	Potential (and current) breach areas bridged. No expected need to close future breaches.	If additional breach occurs, breach would need to be closed.	Potential (and current) breach areas bridged. No expected need to close future breaches.
Natural Resources Impacts				
Bank Communities Fill and Pile Impacts, acres (hectares)				
• Wetlands	0.8 (0.3)	0.1 (0.1)	3.0 (1.2)	0.1 (0.1)
• Uplands – Natural and Man Dominated	2.7 (1.1)	1.6 (0.6)	10.5 (4.2)	1.2 (0.5)
• Aquatic Bottom	0.0 (0.0)	0.0 (0.0)	0.2 (0.1)	0.0 (0.0)
Total Wetlands shaded, acres (hectares)	3.5 (1.4)	1.7 (0.7)	13.7 (5.5)	1.3 (0.5)
Protected Species Impacts	Likely disturbance to piping plover and sea turtles nesting on beach; not likely to adversely affect in ocean. Beach nourishment could affect seabird nesting habitat.	None likely.	None likely.	None likely.
Potential Constraints	Not likely to be found compatible with Refuge's mission and purpose; sand quality and sand availability for a long-term solution is a concern; at least partial filling of breach would be required.	Not likely to be found compatible with Refuge's mission and purpose; at least partial filling of breach would be required.	None likely.	None

Table 2. Phase II Impacts – Rodanthe Area

	Beach Nourishment	Bridge on New Location	Bridge within Existing NC 12 Easement	Bridge within Existing NC 12 Easement and Beach Nourishment
Community and Visual Impacts				
Residential Relocations	0	2	6	0
Business Relocations	0	5	7	0
Cemetery Impacts	None	Proposed right-of-way would cross cemetery, but no known gravesites would be affected.	None	None
Anticipated Need for Refuge Compatibility Determination	Compatibility Determination expected (for all alternatives that use Refuge lands outside the existing NC 12 easement).	Compatibility Determination expected (for all alternatives that use Refuge lands outside the existing NC 12 easement).	No Compatibility Determination required.	Compatibility Determination expected (for all alternatives that use Refuge lands outside the existing NC 12 easement).
Rodanthe Community Cohesion and Accessibility	No impact.	No impact.	0.8 mile (1.3 kilometers) of bridge would bisect community and make vehicle access more circuitous.	0.3 mile (0.5 kilometer) of bridge would bisect community; access more circuitous
Noise Impact (estimated number of sensitive receptors affected)	2 residential receptors exceeding FHWA NAC	3 residential receptors (including 1 FHWA NAC) and 1 business receptor with substantial noise increases	3 residential receptors exceeding FHWA NAC, and 3 residential receptors (including 1 FHWA NAC) and 1 business receptor with substantial noise increases	2 residential receptors exceeding FHWA NAC
Visual Impact	None	Panoramic views of Pamlico Sound from homes along shoreline in Rodanthe would be affected.	Sizeable visual intrusion into the landscape of the Refuge; views in Rodanthe near the Refuge affected.	Sizeable visual intrusion into the landscape of the Refuge; views in Rodanthe near the Refuge affected.
Cultural Resource Impacts				
Rodanthe Historic District and Chincocomoco Life Saving Station	No Effect.	No Adverse Effect; the alternative ends outside the district, so cultural resources would not be directly affected; alternatives would be within view of resources, but view also currently includes modern commercial and residential structures.	No Adverse Effect; the alternative ends outside the district, so cultural resources would not be directly affected; alternatives would be within view of resources, but view also currently includes modern commercial and residential structures.	No Effect
Pea Island National Wildlife Refuge	No Adverse Effect.	Adverse Effect because the alternatives would leave the existing NC 12 easement, and because of the elevation of the bridge as it passes through the Refuge.	Adverse Effect because of the elevation of the bridge as it passes through the Refuge.	Adverse Effect because of the elevation of the bridge as it passes through the Refuge.

Table 2 (concluded). Phase II Impacts – Rodanthe Area

	Beach Nourishment	Bridge on New Location	Bridge within Existing NC 12 Easement	Bridge within Existing NC 12 Easement and Beach Nourishment
Parks and Recreation Impacts				
General Refuge Access	Little change in access. Refuge facilities protected from future beach erosion.	Bridge through Pamlico Sound in southern portion of Refuge would reduce access in that area.	Bridge in existing NC 12 easement in southern portion of Refuge would reduce access in that area.	Bridge in existing NC 12 easement in southern portion of Refuge would reduce access in that area.
Length of NC 12 Outside the Existing Easement within the Refuge	None.	0.7 mile (1.1 kilometers)	None.	None.
Coastal Conditions Impacts				
Potential for Breach and Need for Closing Breach to Maintain NC 12	Nourishment would reduce the risk of a breach. Any breaches through the Refuge would need to be closed.	Potential breach area north of Rodanthe bridge. No expected need for future breaches.	Potential breach area north of Rodanthe bridge. No expected future breaches.	Potential breach areas bridged. Phases II and III may need to be accelerated, if a breach occurred before all four phases are completed.
Natural Resources Impacts				
Biotic Communities Fill and Pile Impacts, acres (hectares)				
• Submerged Aquatic Vegetation (SAV)	0.0 (0.0)	0.1 (0.1)	0.0 (0.0)	0.0 (0.0)
• Wetlands	0.0 (0.0)	2.0 (0.8)	0.0 (0.0)	0.0 (0.0)
• Uplands – Natural and Man Dominated	11.2 (4.5)	5.6 (2.2)	7.2 (2.9)	2.8 (1.1)
Total	11.2 (4.5)	7.7 (3.1)	7.2 (2.9)	2.8 (1.1)
Wetlands and SAV Shaded, acres (hectares)				
• Wetlands	0.0 (0.0)	1.5 (0.6)	0.0 (0.0)	0.0 (0.0)
• SAV	0.0 (0.0)	5.3 (2.1)	0.0 (0.0)	0.0 (0.0)
Protected Species Adversely Affected	Likely disturbance to piping plover and sea turtles nesting on beach; not likely to adversely affect in ocean. Beach nourishment could affect seabeach amaranth habitat.	None likely.	None likely.	Likely disturbance to piping plover and sea turtles nesting on beach; not likely to adversely affect in ocean. Beach nourishment could affect seabeach amaranth habitat.
Potential Constraints	Not likely to be found compatible with Refuge's mission and purpose; sand quality and sand availability for a long-term solution in an area with a rapid erosion rate is a concern; would require extensive dredging to acquire the sand needed; would have to be repeated frequently.	Not likely to be found compatible with Refuge's mission and purpose.	Rapid erosion rate in this area may cause portions of the structure to be in the surf zone or offshore in the future.	Some concerns as with beach nourishment option; the rate in this area may cause portions of the structure to be in the surf zone or offshore in the future.

Table 3. Total Highway Costs through 2060* (Costs for Alternatives to Maintain NC 12 between Oregon Inlet and Rodanthe, including the Two Breach Sites)

	Low	High
Beach Nourishment	\$407,745,000	\$657,260,000
Road North/Bridge South	\$330,958,000	\$412,958,000
All Bridge	\$791,108,000	\$1,063,108,000
Phased Approach/Rodanthe Nourishment	\$816,068,000	\$1,136,320,000
Phased Approach/Rodanthe Bridge	\$797,459,000	\$1,076,113,000

* All costs are in 2006 dollars. These estimates include the costs of project construction, maintenance, and mitigation.

RIGHT-OF-WAY PROCEDURES

Construction of Phase I (the new Oregon Inlet bridge) of the project will not require the purchase of land from private property owners. However, Phase II of the project within Rodanthe could require the purchase of private property and relocation of homes and businesses. Specific acquisitions will depend on the alternative selected.

After the final design of any future phase(s) is complete, the proposed right-of-way limits will be staked on the ground. If you are an affected property owner, a Right-of-Way Agent will contact you and arrange a meeting. The agent will explain the plans and advise you as to how the project will affect you. The agent will inform you of your rights as a property owner. If permanent right-of-way is required, professionals who are familiar with real estate values will evaluate or appraise your property. The evaluations or appraisals will be reviewed for completeness and accuracy; then, the Right-of-Way Agent will make a written offer to you. The current market value of the property at its highest and best use when appraised will be offered as compensation. The Department of Transportation must:

1. Treat all owners and tenants equally.
2. Fully explain the owner's rights.
3. Pay just compensation in exchange for property rights.
4. Furnish relocation advisory assistance.

Right-of-Way Agents are available at tonight's meeting to answer your questions.

RELOCATION ASSISTANCE

If you are a relocatee, that is, if your residence or business is to be acquired as part of the project, additional assistance in the form of advice and compensation is available. You will be provided with assistance on locations of comparable housing and/or commercial establishments, moving procedures, and moving aid. Moving expenses may be paid for you. Additional monetary compensation is available to help homeowners cope with mortgage increases, increased value of comparable homes, closing costs, etc. A similar program is available to assist business owners. The Right-of-Way Agent can explain this assistance in greater detail.

WHAT'S NEXT FOR PHASE II?

After reviewing comments from citizens as well as input from a panel of coastal engineers and scientists, NCDOT and FHWA will meet with the project's "merger team," which includes members of federal and state agencies with interests in the project. That group is scheduled to meet in December and determine what options will be studied further for each site.

The merger team will meet again in early 2012 to determine the final option for each site. NCDOT and FHWA will then complete any required environmental documentation and apply for the appropriate environmental permits.

NCDOT expects to issue a construction contract for the Pea Island Breach site in August 2012, and a construction contract for the Rodanthe Breach site in December 2012.

In the meantime, NCDOT will continue the current coastal monitoring program of the entire project area to determine when future phases of the project should be implemented.

STATUS OF PHASE I (OREGON INLET BRIDGE)

A design-build contract for Phase I (the new Oregon Inlet bridge) was awarded in July. The contractor is currently working on the final design of the new bridge. Once all of the necessary environmental permits have been received, the contractor will start construction of the new bridge; construction is scheduled to start in January 2013. The new bridge is expected to be opened in the Spring of 2015, with all remaining work (including the demolition of the current bridge) to be completed in 2016. More information about Phase I of the project is available at tonight's meeting, and additional workshops will be scheduled in 2012 so that the contractor can answer your questions about the construction of the new bridge.

ADDITIONAL INFORMATION

As mentioned above, please leave comments in the comment box at the hearing or send them to Ms. Beth Smyre at the address on page 2.

For more information on NC 12 and the Bonner Bridge Replacement Project:

- Visit www.ncdot.org/travel/nc12recovery
- Follow our NC 12 Twitter feed at http://twitter.com/NCDOT_NC12
- Go to our Repairing NC 12 blog at <http://nc12repairs.blogspot.com/>
- Visit www.ncdot.org/projects/bonnerbridgerepairs
- Or call John Page or Bobby Norburn at the Project Hotline (toll-free): 1-866-803-0529.



Title VI Public Involvement Form

Completing this form is completely voluntary. You are not required to provide the information requested in order to participate in this meeting.

Meeting Type: Public Workshops Location: Manteo/Rodanthe/Ocracoke TIP No.: B-2500 Project Description: Bonner Bridge Replacement Project	Date: 12/05/11, 12/06/11, 01/05/12
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In accordance with Title VI of the Civil Rights Act of 1964 and other civil rights provisions of Federal Statutory law, the North Carolina Department of Transportation (NCDOT) assures that no person(s) affected by its programs, policies, or activities, shall be excluded from participation in, denied the benefits of, or subjected to discrimination on the grounds of race, color, national origin, disability, age, income, or gender.

This form helps the State DOT meet its statutory obligations for data collection and public involvement under Title VI and NEPA. Please place completed forms in the designated box on the registration table or mail it to the NCDOT Office of Civil Rights, Title VI Section at 1511 Mail Service Center, Raleigh, NC 27699-1511.

Completed forms will be held on file at the NCDOT as part of the public record.

Zip Code: _____ Street Name: _____ (i.e. Main Street)	Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female Age: <input type="checkbox"/> Less than 18 <input type="checkbox"/> 45-64 <input type="checkbox"/> 18-29 <input type="checkbox"/> 65 and older <input type="checkbox"/> 30-44 Disabled: <input type="checkbox"/> Yes <input type="checkbox"/> No
Total Household Income: <input type="checkbox"/> Less than \$12,000 <input type="checkbox"/> \$47,000 – \$69,999 <input type="checkbox"/> \$12,000 – \$19,999 <input type="checkbox"/> \$70,000 – \$93,999 <input type="checkbox"/> \$20,000 – \$30,999 <input type="checkbox"/> \$94,000 – \$117,999 <input type="checkbox"/> \$31,000 – \$46,999 <input type="checkbox"/> \$118,000 or greater	National Origin: (if born outside the U.S.) <input type="checkbox"/> Mexican <input type="checkbox"/> Central American: _____ <input type="checkbox"/> South American: _____ <input type="checkbox"/> Puerto Rican <input type="checkbox"/> Chinese <input type="checkbox"/> Vietnamese <input type="checkbox"/> Korean <input type="checkbox"/> Other (please specify): _____
Race/Ethnicity: <input type="checkbox"/> White <input type="checkbox"/> Black/African American <input type="checkbox"/> Asian <input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Native Hawaiian/Pacific Islander <input type="checkbox"/> Hispanic/Latino <input type="checkbox"/> Other (please specify): _____	

For further information regarding Title VI or this process, please contact the NCDOT Title VI Section at (919) 508-1808 or toll free at 1-800-522-0453, or by email at slipscomb@ncdot.gov.

Thank you for your cooperation!

**NCDOT Office of Civil Rights
 Title VI Section
 1511 Mail Service Center
 Raleigh, NC 27699-1511**



COMMENT SHEET

**Bonner Bridge Replacement Project
Public Workshops – Phase II
TIP No. B-2500
Dare County**

**Ms. Beth Smyre, PE
NCDOT - PDEA
1548 Mail Service Center
Raleigh, NC 27699-1548**

NAME: _____

ADDRESS: _____

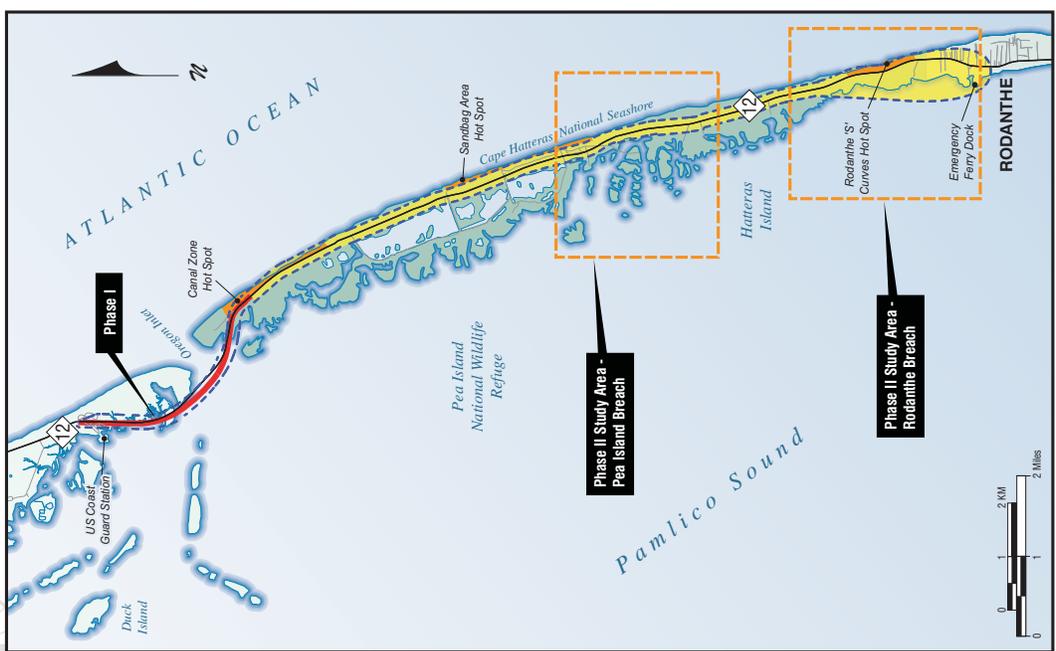
E-MAIL: _____

COMMENTS AND/OR QUESTIONS:

Comments may be mailed by January 20, 2012 to:

Ms. Beth Smyre, PE
NCDOT – Project Development and Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548
Email: bsmyre@ncdot.gov

Phase II Study Areas
Bonner Bridge Replacement Project



Welcome

Bonner Bridge Phase II Public Workshops

December 5 and 6, 2011



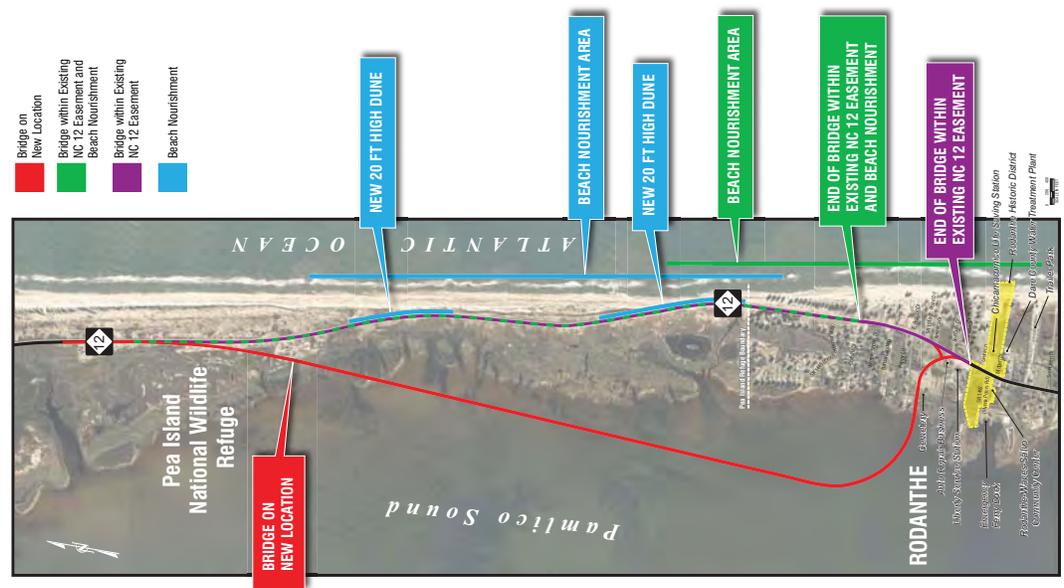
Phase II Sundry Areas

Pea Island Breach



Phase II Sundry Areas

Rodanthe Breach





Phase I (New Oregon Inlet Bridge)

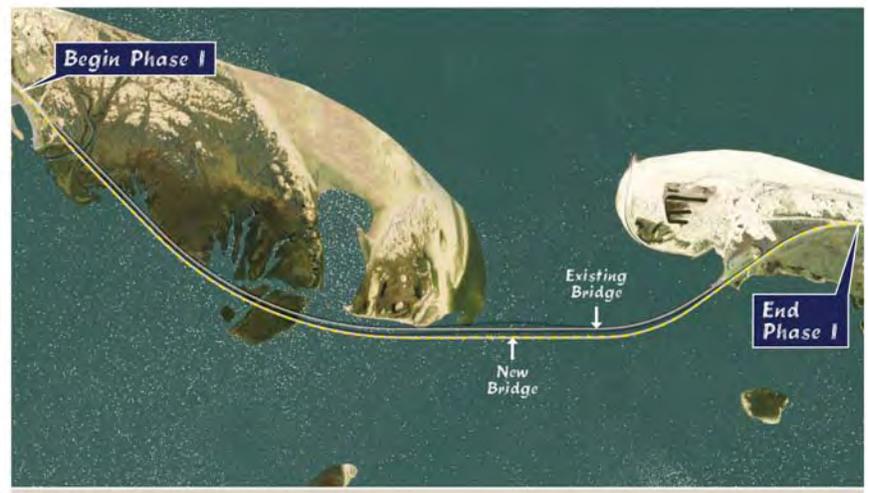
Photo Simulations



View of Channel Spans



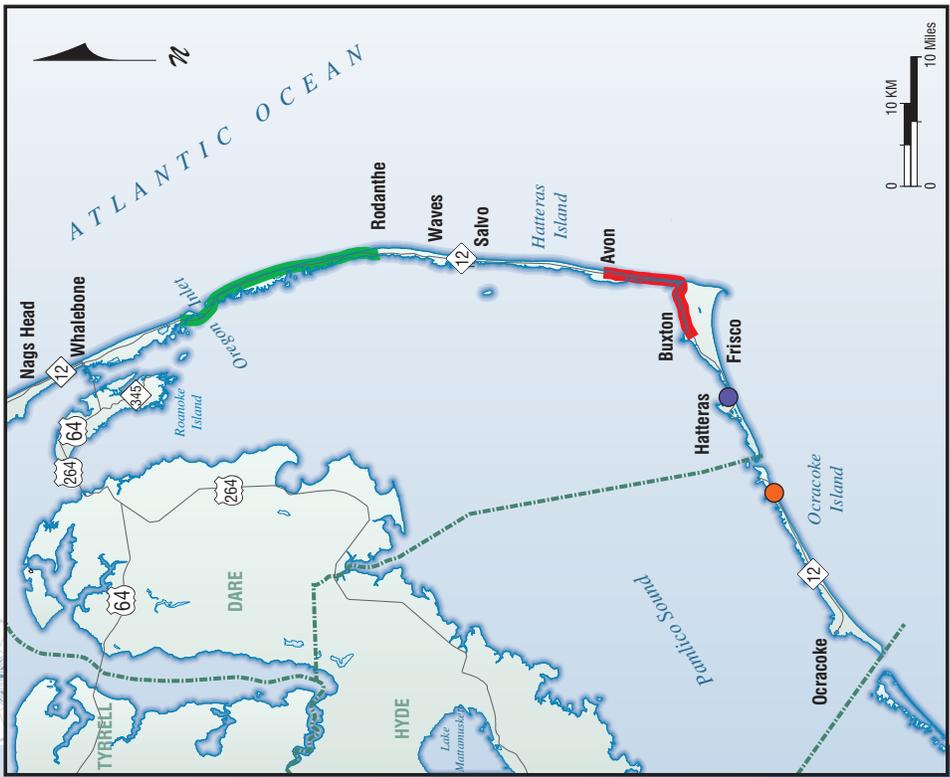
New Bridge (looking south)



Plan View of Project Area

TIP Project No. B-2500

NCDOT Projects on North Carolina's Outer Banks



NCDOT Projects

- █ Bonner Bridge Replacement Project (STIP No. B-2500)
- █ Buxton to Avon Planning and Environmental Studies for Maintaining Roadway (STIP No. R-4070B)
- Ocracoke Island Hot Spot Interim Improvements (STIP No. R-3116A)
- Hatteras Village Hot Spot Interim Improvements (STIP No. R-3116B)

TIP Project No. B-2500



BONNER BRIDGE

TIP B-2500

Public Workshop Schedule

Dec 5th in Manteo

Dare Co. Administration Building
Public Workshop – 4 p.m. to 7 p.m.

Dec 6th in Rodanthe

Rodanthe-Waves-Salvo Community Center
Public Workshop – 4 p.m. to 7 p.m.

Jan 5th in Ocracoke

Ocracoke Community Center
Public Workshop – 5 p.m. to 7 p.m.



BONNER BRIDGE

TIP B-2500

WELCOME!



Public Workshops:
December 5 and 6, 2011 and January 5, 2012





BONNER BRIDGE

TIP B-2500

Public Workshops



- Informal – Speak one-on-one with project team members
- Consists of several “Stations”
- Opportunity to provide written comments



BONNER BRIDGE

TIP B-2500

Public Workshop Goals

- 1** Introduce Phase II of the Bonner Bridge Replacement Project
- 2** Discuss the Pea Island and Rodanthe design options
- 3** Hear your comments and concerns





BONNER BRIDGE

TIP B-2500

Pea Island Repairs

- Installed temporary bridge at breach site
- Installed sheet piles and sand bags to protect ends of bridge and roadway
- Sand used to fill smaller breaches



BONNER BRIDGE

TIP B-2500

- Parallel Bridge Corridor with NC 12 Transportation Management Plan
 - Phase I: Construction of new Bonner Bridge over Oregon Inlet
 - Coastal monitoring program
 - Phase II: Long-term solutions for both the Pea Island and Rodanthe breach sites





BONNER BRIDGE

TIP B-2500

Alternatives: Pea Island

- Beach nourishment
- Bridge on new location
- Bridge within easement
- Road on new location



BONNER BRIDGE

TIP B-2500

Rodanthe Repairs

- Used sand to fill in breaches
- Stockpiled sand for dune reconstruction
- Installed sand bags along the S-curves





BONNER BRIDGE

TIP B-2500

Impact Analysis

- Natural environment
 - Wetlands, endangered species, habitat
- Human environment
 - Property relocations, community services
- Coastal conditions
 - Shoreline position, potential for another breach
- Compatibility with federal lands
- Funding



BONNER BRIDGE

TIP B-2500

Alternatives: Rodanthe

- Beach nourishment
- Bridge within easement
- Bridge on new location





Next Steps

1. Comments reviewed and addressed
2. State and federal agencies meet to discuss design options
3. NCDOT will complete any further studies and acquire permits
4. Contract awarded for Pea Island – August 2012
5. Contract awarded for Rodanthe – December 2012



Right-of-Way Acquisition

- No private property acquired for Phase I
- Phase II could require property acquisition and the relocation of homes and businesses in Rodanthe
- See the right-of-way agent here tonight if you have questions





BONNER BRIDGE

TIP B-2500

For More Information on NC 12:

Hurricane Irene recovery efforts web page:
www.ncdot.org/travel/nc12recovery

Twitter: http://twitter.com/NCDOT_NC12

Blog: <http://nc12repairs.blogspot.com/>

Bonner Bridge Replacement Project web page:
www.ncdot.org/projects/bonnerbridgerepairs



BONNER BRIDGE

TIP B-2500

Status of Phase I

- Replacement of Bonner Bridge
- Currently in the design stage
- Start of Construction: January 2013
- Open to traffic: Spring 2015





BONNER BRIDGE

TIP B-2500

THANK YOU!



BONNER BRIDGE

TIP B-2500



**Drop your
comments in
the box**



**E-mail your
comments**



**Mail your
comments**

Comments are being accepted until **January 20, 2012**; however, NCDOT encourages citizens to submit their comments as soon as possible





BONNER BRIDGE

TIP B-2500

**THIS
PRESENTATION
WILL REPEAT IN
2 MINUTES**



BONNER BRIDGE

TIP B-2500

**Please Proceed
to the Main Area**



Smyre, Elizabeth A

From: Tom Bartley <tom@bartleycorp.com>
Sent: Friday, December 09, 2011 5:17 PM
To: Smyre, Elizabeth A
Subject: Southgate Dr Rodanthe

Dear Ms. Smyre,

My wife and I own an oceanfront home at 23210 Southgate Dr. Rodanthe. Southgate Dr is a non county maintained "street" between East Corbina Dr and East Beacon Drive.

After studying the two bridge alternatives within the right of way, it is not clear to me how our property (plus our neighbors) would be accessed. If the bridge were in fact to be 25 ft in elevation, I can't imagine how a transition could be accomplished. If you could please write back addressing this issue, I would be very grateful.

Thank you.

Tom Bartley
301-252-0568



BONNER BRIDGE

TIP B-2500

THIS
PRESENTATION
WILL REPEAT IN
1 MINUTE

Smyre, Elizabeth A

From: Tom Bartley <tom@bartleycorp.com>
Sent: Monday, December 12, 2011 6:04 PM
To: Smyre, Elizabeth A
Subject: Re: Southgate Dr Rodanthe

Beth,

Thanks for your quick and informative response. So many times when one contacts government officials the response takes a long time. I remember seeing the side roads on an earlier version of the maps, but most of missed it on the version I looked at on Friday. I fully understand the three options now. I am a concrete contractor is the DC-Maryland area who is generally pro development. So faced with the three choices an elevated bridge passing by Southgate would be my least favorite alternative as it would impact our area more than the other two. Thanks again.

Tom Bartley

On Mon, 12 Dec 2011 18:56:20 +0000

"Smyre, Elizabeth A" <bsmyre@ncdot.gov> wrote:

- > Tom-
- > Within Existing NC 12 Easement and Beach Nourishment," any bridging
- > would end far enough north of Southgate Drive such that there would be
- > no change to the NC 12 roadway in that location. The proposed beach
- > nourishment area for that option extends south until just past the
- > Chicamacomico Lifesaving Station, so it would be on the ocean side of
- > the properties on Southgate Drive.
- >
- > For the "Bridge Within Existing NC 12 Easement," the section of NC 12
- > would be on a bridge that would continue farther south (it ends just
- > north of the Liberty Service
- > Station) than the option above. Access to Southgate Drive would be
- > maintained through a set of one-lane, one-way service roads on either
- > side of the new bridge. There is no beach nourishment included with
- > this option (that's why the bridge goes farther south).
- >
- > The maps that we presented last week are available on the NC 12
- > Recovery web page at:
- > <http://www.ncdot.org/travel/nc12recovery/>
- >
- > Look under the "Rodanthe Breach Design Options." If you have any
- > further questions or comments, please let me know!
- > Thanks,
- > Beth
- >
- > ***Please note my phone number has changed, effective March 30, 2011 -
- > see below.***
- >
- > Beth Smyre, P.E.
- > Project Planning Engineer
- > NC Department of Transportation

- > Project Development & Environmental Analysis Branch
- > 1548 Mail Service Center
- > Raleigh, NC 27699-1548
- > (919) 707-6043
- >
- > -----Original Message-----
- > From: Tom Bartley [mailto:tom@bartleycorp.com]
- > Sent: Friday, December 09, 2011 5:17 PM
- > To: Smyre, Elizabeth A
- > Subject: Southgate Dr Rodanthe
- >
- > Dear Ms. Smyre,
- > My wife and I own an oceanfront home at 23210 Southgate Dr. Rodanthe.
- > Southgate Dr is a non county maintained "street" between East Corbina
- > Dr and East Beacon Drive.
- > After studying the two bridge alternatives within the right of way,
- > it is not clear to me how our property (plus our neighbors) would be
- > accessed. If the bridge were in fact to be 25 ft in elevation, I can't
- > imagine how a transition could be accomplished. If you could please
- > write back addressing this issue, I would be very grateful.
- > Thank you.
- > Tom Bartley
- > 301-252-0568
- >
- > _____
- >
- > Email correspondence to and from this sender is subject to the N.C.
- > Public Records Law and may be disclosed to third parties.

Smyre, Elizabeth A

From: rbauer@aol.com
Sent: Friday, December 09, 2011 12:06 PM
To: Smyre, Elizabeth A
Subject: NC 12 Comment

Greetings,
I live on Hatteras Island.

I have reviewed the plans for the long term plans for NC12.

To me the science, and the conditions actually in place on Pea Island suggest the only responsible action is to abandon NC 12 north of Mirro.
Regardless of politics or engineering, Mother Nature is taking over up there.
NCDOT will clearly build highways & bridges to nowhere on Pea Island.

Once we abandon NC 12 north of Mirro we have 2 choices:

1. Build a 17 mile causeway bypassing Pea Island entirely
2. Expand a permanent ferry service from mainland to Rodanthe.

I do recognize that the causeway approach might not provide a positive cost/benefit result.
The debt service may just be too great for Hatteras Island to absorb.
Then we should have a ferry.

Anything else seems irresponsible use of taxpayer monies.
In today's day, we must find a way to spend where it makes sense and recognize where it doesn't.
Sometimes we just need to say no.
Can we find such leadership?

Thanks,

Bob Bauer

B-26

Smyre, Elizabeth A

From: Abbott, Steve
Sent: Tuesday, January 17, 2012 10:46 AM
To: Smyre, Elizabeth A
Subject: Contact us comment for you

Rob Beedie Phone: (757)633-7445 Email: Rob@GlobalSurfNetwork.com

Comment History

Tracking Number: KX6140G1C2

Sent By: Rob Beedie Date/Time: 1/14/2012 8:56 AM

Comment:
To Whom It May Concern:

I could write a book on why this area (Pea Island to S-turns) should be preserved for future generations to enjoy and the importance in keeping free and open access to the beaches but instead I'm leaving a link to a short video, <https://www.facebook.com/video/video.php?v=2359968642934> ,that I would like to share with you in hopes that it motivates each of you that are decision makers to do the right thing in regards to protecting the basic rights of the people, that being, each of our rights to Life, Liberty, and Pursuit of Happiness.

Education is the key in helping make this suggestion work and our children, your children, and all of America will thank you for many years to come if through your leadership you act positively for the people by understanding their request and supporting freedom at its very core.

<https://www.facebook.com/video/video.php?v=2359968642934>

Sincerely,

Rob Beedie, GSN
Global Surf Network

www.GlobalSurfNetwork.com

Email correspondence to and from this sender is subject to the N.C. Public Records Law and may be disclosed to third parties.

Comments on NC12 Repair Alternatives - Rodanthe

Submitted by: Mark & Linda Bowers
Date County Address: 27222 N Sunrise Ct, Salvo NC
Mailing Address: 137 Mount View Dr. Afton VA 22920
Email: mblainetel@ctw.com
Date: Jan 18, 2012

Let us first express our thanks to NCDOT and all involved parties for their continuing effort in maintaining and repairing NC12 over so many years. This effort is not only the construction work and maintenance that continues, but all of the meetings and work that goes into an issue that has many demands and pressures for different solutions. So please keep up the good work and accept our thanks! We feel that NC12 is a vital link to allow many people to enjoy this unique area of the USA, and should be maintained.

The factors which we list below seem to us to be very important, but yet do not appear to be on the list of factors being considered in the published information. We are not advocating the removal of other factors, but we do feel that the factors below need to be added and given high weight.

1. Maintaining a RoW for NC12 through the complete length of Pea Island - Our strongest recommendation is for a solution that maintains North Carolina's legal right to a road right-of-way within the whole length of Pea Island. We are urging you to select a solution that meets this criteria above all others, because, in our view, the political situation that changes from generation to generation will make it impossible to re-establish a new ROW once it is relinquished. Keeping the road within Pea Island is key legal point to maintaining this RoW in our view.
2. Bridge repair costs, length of time, and difficulty - A strong additional constraint is the cost of any sound bridge solution. There is continued advocacy to remove NC12 from Pea Island. In coming to understand the history of the ROW for NC12 on Pea Island and the solutions for the Bonner Bridge, it is becoming clear that the advocates of eliminating NC12 from Pea Island and moving it to a bridge out in the sound give little or no consideration of long term maintenance cost and difficulty. The cost of bridge repairs in any form is extremely high in comparison to land based road repair work, and such bridge repairs are very slow, especially out in a large body of water where all work must be done from large barges with shallow draft. In our view, such maintenance costs and difficulties have not been given due weight in such discussion.
3. Bridge accidents and blockage - Accidents on long bridges present a greater safety hazard, with a higher probability of lane blockage, and are harder to clear than accidents on road, particularly for vehicle fires. This factor becomes even more important in the case of emergency evacuations, which are a regular occurrence on Hatteras Island, and especially when there are 10's of thousands of visitors on the island. Land based road solutions offer many possibilities to move traffic quickly around accidents, simply because any crew with a tow rope can move a damaged vehicle quickly out of the way, and there is much more flexibility and room to move around. Having a land based road solution as much as possible and limiting the total bridge mileage seems a common sense way to be able to maintain critical evacuation routes.

These factors are not a direct endorsement of any particular proposed solution, although it does lead us to advocate for rejection of the bridge out over the sound around Rodanthe, either the shorter one proposed or the longer one recently suggested by USFWS.

Amongst the solutions proposed, we urge the working group to select either the short bridge in north Rodanthe within the existing ROW with or without beach nourishment, or the road rebuild with beach nourishment.

We also believe that the solutions involving beach nourishment have been prematurely removed from consideration, and should be re-considered. Only the lack of proper sand should eliminate this option in our view. We do recognize that there may be some effect on habitat, but the total area affected is small compared to the whole beach length in PINWR and in CHNSRA. Thus it should not have any substantial or lasting impact on habitat or species populations, the effect would be not be permanent, the area would recover and provide natural habitat for intervals between nourishment, and it is quite minor in comparison to the impacts of pond construction and continued maintenance in PINWR, for example.

Thank you.

Linda Bowers

Mark Bowers

Smyre, Elizabeth A

From: mbalntel@cfw.com
Sent: Thursday, January 19, 2012 10:32 AM
To: Smyre, Elizabeth A
Attachments: Comments on NC12 Repair Alternatives.doc

Hi Ms. Smyre,

Please find a Word document attached to this email containing our thoughts, and recommendations on the proposed solutions for NC12 repairs around Rodanthe. We will be following up with a mailed hardcopy, with our signatures.

Thanks, and keepup the good work,

Mark & Linda Bowers

Smyre, Elizabeth A

From: Brock, Thomas <Thomas.Brock@cpschools.com>
Sent: Tuesday, January 10, 2012 10:53 AM
To: Smyre, Elizabeth A
Subject: RE: Road to Rodanthe

The road to s-turns and Rodanthe are iconic. Surfers from all over VA and NC have appreciated the ability to stop and surf. I understand the need for a bridge. I just hope they pick the shorter of the two. Thanks for your help in this matter.

Thomas G. Brock
P.E. Teacher at Rena B. Wright
thomas.brock@cpschools.com

From: Smyre, Elizabeth A [mailto:bsmyre@ncdot.gov]
Sent: Monday, January 09, 2012 3:01 PM
To: Brock, Thomas
Subject: RE: Road to Rodanthe

Thomas-
I have read the article that you are referring to, and I think the petition that you are looking for is located here:

<http://www.thepetitionsite.com/1/preserve-future-access-to-s-turns/#13261388869231&action=udata&udata=false>

You are also welcome to send me directly any comments you might have on the NC 12 projects.

Thanks,
Beth

Beth Smyre, P.E.
Project Planning Engineer
NC Department of Transportation
Project Development & Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548
(919) 707-6043

From: Brock, Thomas [mailto:Thomas.Brock@cpschools.com]
Sent: Friday, January 06, 2012 2:39 PM
To: Smyre, Elizabeth A
Subject: Road to Rodanthe

Greetings,

Read the article on espn regarding the bridge options to (or around) Rodanthe. The link posted redirects to the current page. Could you please respond with a link so that I may sign and forward to my friends. Thank you for all of your work!

Thomas G. Brock
P.E. Teacher at Rena B. Wright
thomas.brock@cpschools.com

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COMMENT SHEET

**Bonner Bridge Replacement Project
Public Workshops – Phase II**

TIP No. B-2500
Dare County

NAME: FRANK & JOE BROWN

ADDRESS: POB 475 Ocracoke, Nc 27960

E-MAIL: Frankandjoe@embarq.mail.com

COMMENTS AND/OR QUESTIONS:

We favor Brown Bridges at a New location
for both beach areas,
Get away from the ocean beach"
building roads & bridges that can
withstand the sand surges and
be back from any impact

Comments may be mailed by January 20, 2012 to:

Ms. Beth Smyre, PE
NCDOT – Project Development and Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548
Email: bsmyre@ncdot.gov

Smyre, Elizabeth A

From: Ross Byrd <rossebyrd@gmail.com>
Sent: Thursday, January 12, 2012 10:24 AM
To: Smyre, Elizabeth A
Subject: bridge next to pappy lane

Hi Beth,

I hope I am seeing this email to the right person. Mark Haines passed your email along to me. We also own a home on Pappy Lane in Rodanthe and I just wanted to say we are very concerned about the option that would involve a bridge coming right next to our homes. In an already struggling economy and real estate market our property values would take an even more substantial hit and our ability to rent would be irreversibly damaged. That rental ability is all that most of us have to hold on to. All of us on Pappy Lane, as far as I can tell, would be in serious financial turmoil with regard to our properties. And that is not to mention the effect on all other sound-side homes to the north of us. The traffic pattern, it seems, would also be a major issue.

I do realize, of course, that my complaint is at bottom quite self-seeking. I'm sure the concerns of a the property value of a few people pales in comparison to the drastic need to solve this crisis. That makes sense. I do realize how completed and difficult this decision must be. What can we do to help encourage another option? It seems to me that the bridge within the easement would be far better. What is the downside there? Thank you for reading this. - Ross

Ross Byrd
Campus Minister
Christ Episcopal Church
(757) 274-8998

COMMENT SHEET

**Bonner Bridge Replacement Project
Public Workshops – Phase II
TIP No. B-2500**

~~HYDE COUNTY~~

NAME: BRIAN CARTER

ADDRESS: PO BOX 693 OCEANOKE NC 27960

E-MAIL: BCARTER@HYDECOUNTY.NC.GOV

COMMENTS AND/OR QUESTIONS:

MY REQUEST IS THAT NO MATTER WHAT IS DONE, THAT EMERGENCY SERVICES (ME - THE EMERGENCY SERVICES DIRECTOR) BE ADVISED IN ADVANCE OF ANY AND ALL CHANGES THAT COULD AFFECT THE TRANSPORT OF SICK OF THE ISLAND OR IN THE EVENT I NEED TO REQUEST RESOURCES TO OCEANOKE



Comments may be mailed by January 20, 2012 to:

Ms. Beth Smyre, PE
NCDOT – Project Development and Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548
Email: bsmyre@ncdot.gov

Smyre, Elizabeth A

From: James Charlet <hatterasjames@gmail.com>
Sent: Monday, December 19, 2011 1:09 PM
To: Smyre, Elizabeth A
Subject: Comment sheet, NC 12 workshop, Rodanthe
Attachments: COMMENT SHEET NC 12, 2011.doc

COMMENT SHEET

Bonner Bridge Replacement Project

Public Workshops – Phase II

TIP No. B2500

Dare County

NAME:

James Charlet

ADDRESS:

PO Box 362, SALVO 27972

EMAIL:

hatterasjames@gmail.com

COMMENTS AND/OR QUESTIONS:

Over 15 years ago, I read in our local paper a "Letter to the Editor" written by David Stick offering solutions to Hatteras Island's NC 12 problems. In all the time since I have heard many more "solutions" but none more sensible. He made his points more eloquently than I shall render here, but in essence those points were:

1. We all know where the "hot spots" are: the Canal Zone, New Inlet area, just north of Rodanthe, just north of Buxton and just north of Hatteras Village. So stop giving money away to outsiders to form studies to tell us exactly that.

2. Build bridges and/or causeways NOW over those spots and let the tide roll!

3. For budgeting purposes, phase the construction projects from north to south. This is also the order of most frequent breeches and overwashes.

4. Once new inlets are inevitably formed, they really are outlets, thereby giving the Sound more places to exit and thus reducing or lessening the amount of soundside flooding.

5. This system of roads-bridges-islands has a long history of success in the Florida Keys, which is in a far harsher climate and covers a much greater distance.

For at least 15 years, this sage advice has been ignored. It is time to be sensible.

Smyre, Elizabeth A

From: jcochol <jcochol@aol.com>
Sent: Saturday, December 17, 2011 9:17 AM
To: Smyre, Elizabeth A
Subject: Pea Island/Mirlo Beach

We would like to express our opinion regarding the long term options being presented for access to Hatteras Island. We have been coming to Hatteras for twenty five years and own two properties in Avon. We are recently retired and plan to spend more time in one of our homes there.

In the previous ongoing discussions regarding the Oregon Inlet Bridge replacement we were in favor of the bridge and causeway option that was on the table. In reviewing the current options for Phase II of this project we would support the "beach nourishment" option for the Pea Island and Mirlo Beach areas as the best proposed solution.

Thank you for your time.

John & Corry Cochol
(585) 394-8974

COMMENT SHEET

**Bonner Bridge Replacement Project
Public Workshops – Phase II
TIP No. B-2500
Dare County**

NAME: Mary Ann Cohen
ADDRESS: PO Box 237 Rodanthe, NC 27968
E-MAIL: none

COMMENTS AND/OR QUESTIONS:

After attending the workshop in December, elevated road ways and the bridge going over the Pamlico Sound seems like the most logical way of preserving Rt 12 passage way off Hatteras Island. The bridge would be the least disruption for those home and business owners that live on Route 12.
Thank you and good luck Mary Ann Cohen

Comments may be mailed by January 20, 2012 to:

Ms. Beth Smyre, PE
NCDOT – Project Development and Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548
Email: bsmyre@ncdot.gov

COMMENT SHEET

Bonner Bridge Replacement Project
Public Workshops – Phase II

TIP No. B-2500
Dare County

NAME: April Contestable
ADDRESS: POB 88 SALVO NC 27972
E-MAIL: aprilisin@gmail.com

COMMENTS AND/OR QUESTIONS:

- 1) Ultimately, a long bridge would be most efficient and it should be lined with windmills (like Jeanette's Pier) and have platforms for recreational fishing. 2) The entrance to Rodanthe could "possibly" benefit from beach renourishment ~~and~~ and if this is the best COST Alternative, it would be worth a try. However, direct ingress to "historical Rodanthe" is a GREAT option.
- 3) Pea Island breach would most benefit from the plan with the most bridge'ala' Fla. Keys.

Comments may be mailed by January 20, 2012 to:

Ms. Beth Smyre, PE
NCDOT – Project Development and Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548
Email: bsmyre@ncdot.gov

Thank you for hearing & considering these comments. I have lived here and observed shifting sand patterns since 1989.

Smyre, Elizabeth A

From: Abbott, Steve
Sent: Thursday, December 15, 2011 2:23 PM
To: Smyre, Elizabeth A
Subject: NC 12

Comment Details

From: Mariner and Donna Cox Phone: (540)659-8590 Email: marinercox@comcast.net

Comment History
Tracking Number: 573CRW4UEE

Sent By: Mariner and Donna Cox Date/Time: 12/15/2011 1:12 PM

Comment:
WE own a home on Bluefish Ct in Hatteras Colony, Avon, NC. As Outer Banks property owners we strongly support Beach nourishment as the option of choice for long-term Route 12 recovery. We believe that this option offers the logical, cost-effective method of returning Route 12 to its pre-tire condition and along with the already selected Bonner Bridge replacement option, is in the best interests of the Owners and residents of the Outer Banks, and all residents of the State of North Carolina. Further, we believe that this option adequately addresses the concerns of the various environmental groups.

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Smyre, Elizabeth A

From: Dave Dawson <dawbiz@yahoo.com>
Sent: Sunday, January 22, 2012 9:14 PM
To: Smyre, Elizabeth A
Subject: Long term fix for Route 12 Hatteras Island

Beth Smyre,

I will be brief. The answer to saving our highway is to stabilize the beach. Bridges and constantly moving the road are all temporary fixes at best. Pumping sand to stabilize the beach is also temporary. North Carolina needs to change the law against using hardened structures to stabilize the beach. This was an antiquated tactic the environmental community used in order to control building density through the back door instead of local zoning. We have been asking the State to "sink a ship" for 40 years. This means use a ship, barge or rocks to build a breakwater, jetty, groin or whatever it takes to slow down the current and let our beach build up. Every time a ship washes close to the shore the beach builds out to it in a matter of days. We've seen it over and over again. This is a simple and less expensive solution and anyone who says it won't work is lying. Look what the Arabs have built in Dubai. I'm not advocating building cities in the ocean; only that the technology is there to fix our problems and to not do so is neglectful on the part of the State. Not only will the State not help us, they won't give us a permit to help ourselves (except for the millionaires who got a variance to build groins at Bald Head to protect their golf course-the groins worked by the way). It's time for North Carolina to protect all of it's citizens and visitors by taking care of the coastline. Can you imagine any other coastal state ignoring their coast the way this State has? Business here actually survived the recession fairly well except for the times when people can't get here because our road is out(again!).

Dave Dawson - Buxton NC

Smyre, Elizabeth A

From: Greg & Janet Duncan <gregjanetcamden@yahoo.com>
Sent: Monday, December 12, 2011 9:07 PM
To: Smyre, Elizabeth A
Subject: NC-12 and Bonner Bridge

Ms. Beth Smyre,

I live in Camden Co. on the water. I've been here for 35 yrs. I'm concerned with both the cost of maintaining NC12 and that the ferry system wasn't publicly offered/considered as an alt. way of providing access to the areas South of Oregon Inlet. During Irene the water level in the Pasquotank dropped 12 inches. This is not normal for a storm with winds from the NE. Water usually recedes 3-4 feet. That was a large impoundment of water in the Albermarle Sound. We saw the damage on the backside of the OBX. My concern is with larger dunes to protect NC12 the water surge will not be able to retreat to sea fast enough to stop flooding up the Albermarle's northern rivers as the storms past. I understand tourism, Fishing, hometown feelings and other issues. But with the rising sea level for the next 50 years, even as small as NC-20 calls for, the economy, the narrowness of Pea Is. I think people are not looking at the whole issue. I would like to see the ferry system fully explored. Most of the towns would change, adapt, and survive to become great places to visit just as Ocracoke has. I have lots of memories of Jockeys ridge, Oregon Inlet, Hatteras, the beaches south to South Carolina over my life, 23 years in the Coast Guard flying and boating along the coast. All the "Sights" have changed looks and locations greatly in that time fixed bridges and roads don't stand a chance.

Thank you for your time, Merry Christmas.

Greg Duncan

Smyre, Elizabeth A

From: Bob <808bob.finch@gmail.com>
Sent: Friday, January 06, 2012 4:28 PM
To: Smyre, Elizabeth A
Subject: Pea Island access

Future highway plans must include access for surfing one of America's treasures--the Hatteras surf sites. I am a long time NC resident now living in Hawaii. But I always return to these breaks when back east. Unquestionably, surfers have a huge impact on the economy of the Outer Banks. Thanks for the opportunity to comment.

Bob Finch,
P. O. Box 1873
Kailua, HI. 96734

I'm a twentieth century man and I don't want to be one with an iPhone

COMMENT SHEET

**Bonner Bridge Replacement Project
Public Workshops – Phase II
TIP No. B-2500
Dare County**

NAME: DAVID L. FRUM

ADDRESS: P.O. BOX 280/42 SAEATH ELLEN LANE, OCHAROKE, NC 27960

E-MAIL: dfrum@hotmaill.com.

COMMENTS AND/OR QUESTIONS:

I BELIEVE THE BEST SOLUTION TO THE ENTIRE BONNER BRIDGE HIGHWAY
DILEMMA IS TO TAKE THE POSITION THAT IT WILL BE TOO COSTLY
AND NOT POSSIBLE TO MAINTAIN THE NEW BRIDGE AND THE ROAD IN THEIR
PRESENT LOCATIONS. ALL THE COASTAL GEOLOGISTS AND ANYONE WHO HAS BEEN
HERE MORE THAN A WEEKEND KNOW THAT STRIP OF BARBEER ISLAND FROM DIFERON
INLET TO RODASTHE IS VERY DYNAMIC AND SUBJECT TO THE WORST CONDITIONS
DUE TO IT PERPENDICULAR ORIENTATION TO NORTHEAST WINDS. IT WOULD BE
SURPRISED IF THE PROJECT PROPOSED COULD EVER BE COMPLETED THROUGHOUT THE
ISLAND THE WARENEST OF THE ISLAND AND THE EROSION THAT HAVE TAKEN
THE BEACHES MEAN THE BIGGEST PROBLEMS WILL OCCUR FROM THIS ASIDE ON.

Comments may be mailed by January 20, 2012 to:

(CONTINUED ON NEXT PAGE)

Ms. Beth Smyre, PE
NCDOT – Project Development and Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548
Email: bsmyre@ncdot.gov

Smyre, Elizabeth A

From: Herbert Gaskill <hsgaskill@mun.ca>
Sent: Thursday, December 15, 2011 9:32 AM
To: Smyre, Elizabeth A
Subject: Bonner Bridge

Dear Ms Smyre -

My wife and I are local home owners, 26248 Wimble Shores Dr. We live in our NC home during the winter, at other times it is a rental.

Almost every year since 2003, we have had a major washout at S-curves requiring major repairs to the roadbed. Every year there have been periods during which Hwy 12 was closed due to overwash. Every year we watch as hundreds of tons of sand are trucked in to S-curves (beach nourishment), only to be washed away in an instant by the forces of nature. We have seen Hwy 12 closed for as long as a week due to wash out at S-curves from a Nor'easter.

We have examined the proposals for HWY 12. We believe that only proposals which guarantee continuous access are viable. Clearly, proposals that require "beach nourishment" are not in this category. We believe that a solution should be implemented ASAP. This rules out proposals that could become subject to law suits, i.e., proposals that place the roadbed outside existing easements.

On this basis we support the proposal described as "Bridge within Existing NC 12 Easement" shown in purple in Figure 3 of "Bonner Bridge Public Workshops" document handed out on Tues, Dec. 6 at the meeting in Rodanthe.

Thank you,

Herb and Cathy Gaskill

Herbert S Gaskill,
Professor, retired

15 Forest Ave
Mt Pearl, NL A1N 1P2
709-368-5218

PO Box 477
Rodanthe, NC
252-987-2298

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I WOULD LIKE TO PROPOSE THAT THE DOT AND ENGINEERING FIRMS TAKE THE POSITION THE NATIONAL PARK SERVICE TOOK WITH THE CAPE HATTERAS LIGHTHOUSE. AFTER YEARS OF TRYING TO STOP NATURE AND TRYING TO MANIPULATE THE SHORELINE RELATED TO A PERMANENT STRUCTURE, THEY GAVE UP AND MINED IT. I THINK THIS IS THE POSITION THAT SHOULD BE TAKEN WITH HIGHWAY 12.

I PROPOSE THAT ENGINEERING BE APPLIED TO CONSTRUCTING A BRIDGE TO THE WEST OF THE BARRETT ISLANDS FROM JUST NORTH OF RODANTHE. THE BEST SOLUTION, IN MY OPINION, WOULD BE TO BUILD THE ROAD EITHER TO THE SOUTH END OF RODANTHE ISLAND, EAST OF WANCHESSE AND CONNECTED TO US 64 AT SKYCO OR WEST ACROSS THE SOUND TO NEAR STUMPY POINT OR SANDY BAY. I FEEL THIS BRIDGE, THOUGH VERY COSTLY IS ORIGINAL CONSTRUCTION, COULD BE MORE EASILY MAINTAINED AND WOULD BE LESS VULNERABLE TO WAVE ACTION. IT WOULD BE IN THE SOUND RATHER THAN ON THE BEACH FACE.

IF SHOULD THIS PLAN BE PUT INTO EFFECT, OREGON INLET BRIDGE WOULD NOT HAVE TO BE BUILT, THE ROAD COULD BE ABANDONED ACROSS THE PRESENT BRIDGE AND IT COULD BE REMOVED AFTER CONSTRUCTION. OREGON INLET COULD BE ALLOWED TO DEVELOP WHEREVER IT DOES BECAUSE IT WOULD NOT HAVE TO BE MAINTAINED IN PLACE BENEATH THE HIGH RISE OF THE BRIDGE. THE CHANNEL COULD BE WHEREVER IT FALLS ELIMINATING THE ENTIRE PROBLEM OF KEEPING OREGON INLET WHERE NATURE DOES NOT WANT IT TO BE, ELIMINATING THE NEED FOR JETTIES OR DREDGING.

HIGHWAY 12 THROUGH THE PEA ISLAND REFUGE COULD BE ABANDONED. PLEASE THE U.S. FISH AND WILDLIFE SERVICE WHO DOESN'T WANT IT THESE ANYWAY, THE ISLAND IN THAT SECTION WOULD RATHERLY REVERT TO A NATURAL SYSTEM, DUNES COULD DEVELOP WHEREVER THEY WANT. THE BEACHES WOULD WIDEN AND OVERWASH WOULD OCCUR BUT IT WOULD NOT MATTER SINCE THERE WOULD BE NO ROAD TO MAINTAIN. THE TEMPORARY BRIDGE AT THE NEW INLET WOULD BE UNNECESSARY AGAIN BECAUSE THERE WOULD BE NO ROAD.

PLEASE CONSIDER THESE RECOMMENDATIONS CAREFULLY. THINK OF THE HUNDREDS OF MILLIONS OF DOLLARS IT WILL TAKE TO MAINTAIN THE ROAD THROUGH A PLACE IT PROBABLY SHOULD RELIABLY BE DEPEND ON TO STAY. A ROAD ACROSS THE SOUND WEST OF THE BARRETT WILL REQUIRE MUCH SIMPLER CONSTRUCTION AND WOULD HAVE REASONABLE ASSURANCE REMAINING FOR YEARS TO COME.

David L. Stum

Smyre, Elizabeth A

From: Rob Gerritsen <rob@xore.com>
Sent: Wednesday, December 14, 2011 2:40 PM
To: Smyre, Elizabeth A
Cc: Scott Leggat
Subject: NC 12 Recovery Efforts

Dear Ms. Smyre,
Thank you very much for the Meeting Packet related to the Bonner Bridge – Phase II Workshops. It is a comprehensive and informative document.

I have a question and a comment.

My question regards the costs in Table 3. The language used implies that these are simple total expenditures through 2060. Does that mean that you did not use a discount rate to reflect the so-called time value of money? Since some alternatives require spending most of the money up front, and others do not, I suspect that using an appropriate discount rate might make a significant difference in the comparative costs.

My own preference is the beach nourishment option. It has a very low visual impact and a very low impact on existing residences and businesses.

Because beach nourishment expends money gradually over time, it also has a lower opportunity cost than any of the other alternatives. If any of the other alternatives end up having unforeseen negative effects or don't work as well as expected, we will only discover that after having spent a very large amount. If it turns out that beach nourishment has some unexpected negative effects, it can be terminated and other options considered before extremely large sums have already been expended. Because it has these lower opportunity costs it is a less riskier alternative.

I have been an owner of an ocean front property in Avon since 1990.

Regards,
-Rob

Rob Gerritsen, PhD
President
Exclusive Ore Inc.
www.xore.com
PO Box 1024
Blue Bell, PA 19422
(215) 643-3110

Smyre, Elizabeth A

From: Gery, Michael <michael.gery@carolinacountry.com>
Sent: Thursday, January 19, 2012 1:54 PM
To: Smyre, Elizabeth A
Subject: NC Hwy 12

These are my comments on the proposals to rebuild NC Hwy 12 on Pea Island.

All of these proposals are far riskier and more expensive than the sensible alternative which was – without explanation – excluded from the winter presentations in Dare County and Ocracoke: the so-called “long bridge” that would connect to Rodanthe. The long bridge was the preferred alternative in 2003 when nearly all agencies involved saw its wisdom. To build a series of bridges and causeways on a moving strip of sand, and through a national wildlife, not only will subject the refuge and its beaches to being a construction zone for years, but also is asking for a long future of frustration and expense, and exposes taxpayers to unneeded expense in court. I ask the DOT to abandon these alternatives as presented this winter in workshops I attended, and to instead reconsider the long bridge. People will be able to reach Pea Island without a dangerous bridge and doomed highway, just as we reach Core Banks, Portsmouth Island, Ocracoke, Shackleford Banks, Bald Head Island, Hammocks Beach and other barrier islands.

Michael E. C. Gery
104 Seaton Lane
Manteo, NC 27954

COMMENT SHEET

Bonner Bridge Replacement Project
Public Workshops - Phase II

TIP No. B-2500
Dare County

NAME: Harry Gilbert

ADDRESS: P.O. Box 850, Ocracoke, NC 27960

E-MAIL: info@theanchorageinn.com

COMMENTS AND/OR QUESTIONS:

I would prefer the "Bridge on New location" at both locations. If not "Road on New location" if above is not possible.

Comments may be mailed by January 20, 2012 to:

Ms. Beth Smyre, PE
NCDOT - Project Development and Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548
Email: bsmyre@ncdot.gov

COMMENT SHEET

Bonner Bridge Replacement Project
Public Workshops - Phase II

TIP No. B-2500
Dare County

NAME: H.W. Gilbert III

ADDRESS: P.O. Box 850, Ocracoke, NC 27960

E-MAIL: info@theanchorageinn.com

COMMENTS AND/OR QUESTIONS:

I previously made a comment at the Road on the Workshop and, after further review and a better understanding of the permitting process I would like to change my comment. At Pea Island I would like to see a "Bridge within Existing NC-12 Easement" mainly due to permitting issues. At the Podiatle area I would like to see a "Bridge on New Location" due to the fact that the area has always been a problem area ~~because~~ because of the rapid beach erosion.

Comments may be mailed by January 20, 2012 to:

Ms. Beth Smyre, PE
NCDOT - Project Development and Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548
Email: bsmyre@ncdot.gov

COMMENT SHEET

**Bonner Bridge Replacement Project
Public Workshops – Phase II**
TIP No. B-2500
Dare County

NAME: Leslie Gilbert

ADDRESS: Po Box 850 Ocracoke NC 27960

E-MAIL: info@thearchorageinn.com

COMMENTS AND/OR QUESTIONS:
Prefer Bridges on new
locations → which would be
more permanent.

Comments may be mailed by January 20, 2012 to:

Ms. Beth Smyre, PE
NCDOT – Project Development and Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548
Email: bsmyre@ncdot.gov

Smyre, Elizabeth A

From: Abbott, Steve
Sent: Thursday, December 15, 2011 11:00 AM
To: Smyre, Elizabeth A
Subject: Another NC 12 from Contact us

Suzan (Mrs. James E.) Griffin **Phone:** (757)229-5235 **Email:** sgriffin@widomaker.com

[Print](#)

Comment History
Tracking Number: 87WEN3LN24

Sent By: Suzan (Mrs. James E.) Griffin **Date/Time:** 12/14/2011 6:47 PM

Comment:
I am writing to ask you to support beach nourishment for the Outer Banks (especially to aid Highway 12). We are owners of property there and we implore you to find a solution to transportation and erosion issues on our beautiful Outer Banks. This is as close as you can get to heaven and we ask that you find a solution to the many issues facing the area in regard to transportation. Thank you for your consideration and hard work. I will anxiously await news of your meetings and look for outstanding conclusions from your group. Nobody does it better than NC...please live up to that belief.

Email correspondence to and from this sender is subject to the N.C. Public Records Law and may be disclosed to third parties.

Smyre, Elizabeth A

From: Abbott, Steve
Sent: Thursday, December 15, 2011 2:25 PM
To: Smyre, Elizabeth A
Subject: NC 12

By the way, I'm already responding to these in Contact Us, just saying, "Thank you for the comments. They are being forwarded to the DOT staff working on the project."

Steve

From: Raymond C. Grimm **Phone:** (540)635-2404 **Email:** rgimm@shentel.net

Comment History Tracking Number: PAG55C9RWI

Sent By: Raymond C.Grimm **Date/Time:** 12/15/2011 11:50 AM

Comment:
I am a Dare county OBX property owner since 1980. My wife and I own and rent several homes in Mirlo, and an ocean front on East Point Drive. We have watched homes disappear in front of the oceanfront. As a matter of fact, we were third lot back when we first built our cottage. Beach nourishment would have saved many of these homes, and I urge your consideration of this option for the Rodanthe area and the homes in Mirlo Beach.
Regards,
Ray and Lani Grimm, Front Royal, VA

Email correspondence to and from this sender is subject to the N.C. Public Records Law and may be disclosed to third parties.

Norburn, Robert E.

From: Norburn, Robert E.
Sent: Friday, December 09, 2011 11:20 AM
To: Smyre, Elizabeth A
Subject: Bomer Citizen Contact

I received an information line call from Mark Haines, who is a Rodanthe property owner. He was concerned about the long-term options at Rodanthe. He said he favors either beach nourishment, or the bridge in existing easement with beach nourishment, because these are the only options that will protect the homes in northern Rodanthe from long-term beach erosion. He said that he also attended the workshops and plans on submitting written comments, which I encouraged him to do so. He also asked about the project schedule, which I explained to him. He is already on the project mailing list.

Bobby Norburn
Transportation Engineer/Planner
Parsons Brinckerhoff
434 Fayetteville Street, Suite 1500
Raleigh, NC 27601
919-836-4081 (office)
919-836-4099 (fax)

norburn@pbworld.com

www.pbworld.com

Smyre, Elizabeth A

From: Haines, Mark <mark.haines@transcendata.com>
Sent: Sunday, December 11, 2011 10:33 PM
To: Smyre, Elizabeth A
Haines, Mark
Subject: Bonner Bridge Replacement Project Phase II Public Workshop Comment Sheet
Attachments: NC 12 Feedback.pdf

Hi Beth!

Attached you will find my feedback regarding the Bonner Bridge Replacement Project Phase II. I would appreciate it if you can confirm receipt of my email and attached comment sheet.

If you have any issues opening the attachment, please let me know.

Thanks,

Mark Haines
513-604-6641

COMMENT SHEET

**Bonner Bridge Replacement Project
Public Workshops – Phase II
TIP No. B-2500
Dare County**

Name: Mark Haines
Address: 3087 Palomino Trail, Mason OH 45040
E-mail: meh@iti-global.com

Comments and/or Questions:

My name is Mark Haines. I am a part time resident and rental property owner on Hatteras Island. I attended both the Manteo and Rodanthe workshops. Like everyone else involved, I have concerns about the solution that will be chosen. I submitted initial comments, but since the merger team has decided to eliminate both options which include beach nourishment, I am submitting additional feedback.

Trying to keep this to the point and short, here is my feedback associated with the Rodanthe S-Curves area.

1. Reconsider beach nourishment. It needs to be done regardless.
2. Solve the issue within the current easement.
3. Consider ending the bridge / elevated roadway in Miro Beach. This minimizes impact to current property owners which should be a very high consideration. Extending South on 12 can be done in the future when and if necessary. It also eliminates the congestion around the Liberty Gas station with the current option.
4. If you feel the need for the "Rodanthe Bridge on New Location", connect back onto 12 prior to any houses to avoid all of the issues associated with current property owners, along with what I would expect to be a long and lengthy legal battle.
5. Allow public comments on the final recommendation and decision on what to do. This will allow the public to provide specific feedback such as:
 - a. Include a bikeway or walking path along the new road or bridge
 - b. Input on access points crossing 12 to the ocean
 - c. Cosmetic features which might minimize the eye soar any new bridge or elevated roadway might cause.
 - d. Create an elevated section on a possible bridge to allow recreational access to the open sound.
6. Communicate with those in the immediate area (Northern Rodanthe) that you are serious about implementing a solution which minimizes the impact to their property values. Eliminating beach nourishment sent the wrong message.

Smyre, Elizabeth A

From: Haines, Mark <mark.haines@transcendata.com>
Sent: Thursday, January 19, 2012 12:07 PM
To: Smyre, Elizabeth A
Cc: Haines, Mark
Subject: Bonner Bridge Replacement Project Phase II Public Workshop Comment Sheet
Attachments: NC 12 Feedback 1-19-2012.pdf

Hi Beth!

Attached you will find additional feedback regarding the Bonner Bridge Replacement Project Phase II. I would appreciate it if you can confirm receipt of my email and attached comment sheet.

If you have any issues opening the attachment, please let me know.

Thanks,

Mark Haines
513-604-6641

Mark Haines
ITI TranscenData
513-604.6641
me.h@iti-global.com

Visit our New Website: <http://www.transcendata.com>

B-42

Smyre, Elizabeth A

From: Ted Hamilton <tedsalvo@earthlink.net>
Sent: Thursday, January 12, 2012 7:11 AM
To: Smyre, Elizabeth A; norburn@ncdot.gov
Subject: Comments on Proposed NC 12 Improvements

The following are my comments on NC 12 proposed solutions in the Pea Island area.

1. Many of us have never seen a really definitive reason why NCDOT now has trouble getting permits from USFWS to move the road from its current right of way. In 1988 the road was relocated well to the West of the then right of way in the S-Curve area. Again in 1996 the same type of relocation occurred in the Sand Bag area.

What has changed to make this type of movement more difficult if not impossible????

It is one thing if it has resulted from new law but a whole different matter if it is just new DOI and/or USFWS policy. If the latter, that should be seriously challenged by the state in order to provide the best long term solution for a given area of the route. I have even seen articles indicating deeds exist that give the state basically right of way where ever it is needed, although some environmental groups disagree.

The public should be informed definitively as to the reason for this right of way difficulty, because common sense says that in general the farther West (away from the surf zone) the road is located, the better the long term survival.

2. Any solution should carefully consider the impact on electric rates to relocate power lines in order to provide reliable maintenance access. In 2007 CHEC estimated that an approximate 42% rate increase would be required to fund the relocation of the line on or near the then proposed 17 mile bridge that bypassed Pea Island. No doubt a similar increase would be needed if the now USFWS proposed 7 mile long bridge was to be built. I say similar increase because the increase would not be directly proportional to bridge length because design, environmental impact studies, etc would be similar in cost regardless of bridge length.

3. Any solution should carefully consider the impact on public access to areas of Pea Island. When the 17 mile bridge was first proposed NCDOT indicated they would obviously not maintain any sort of road on Pea Island. USFWS indicated they certainly would not maintain any sort of paved access and further indicated they would likely require the pavement be removed. In addition USFWS indicated that individual access by private vehicles would likely not be allowed, but would most likely go with a 4WD bus system similar to that used at Back Bay in VA.

Such access limitations as above would be unacceptable. At a minimum private vehicle access by at least 4WD vehicles on sand roads similar to the Interdunal Road near Cape Point and Pole Road at Hatteras Inlet should be provided for.

Now that said let me be clear in my expectations. If, for example, the 7 mile bridge proposed by USFWS is built, I would expect to see a sand road from the North end of Rodanthe to the South side of the new Pea Island Inlet and a sand road from the North terminus area of the bridge to the North side of the new Pea Island Inlet. But if, for example, an inlet was eventually formed at the S-Curve area, or any other area, I would not expect any bridging or fill of such an inlet to accommodate a sand road. We should at least start with reasonable sand road access and let new inlets dictate what access remains over time. Such access should be agreed to by USFWS as part of this process and factored into the road improvement decisions. It should not be left undecided and for USFWS to decide in the future as they indicated during discussions on the 17 mile bridge.

4. Any bridge / raised roadway solutions should carefully look at what wind restrictions may be needed and their impact on travel / access. I refer you to wind restrictions on the Chesapeake Bay Bridge Tunnel as examples of a similarly exposed roadway that is purposely not used as an evacuation route because of the wind restrictions.

Now having said all the above, I think the following are the best compromise solutions that would address my 4 concerns.

For Pea Island Breach:

Bridge on new location. This requires only a short section of new right of way, moves the road further from the surf zone (beyond the 2060 erosion zone) in the area of the breach (particularly to the South as inlets tend to migrate South; eg. Oregon Inlet), places it on a bridge so the current inlet can be left for sound water outflow relief from potential sound flooding and provides better interconnect to the North if the conceptual road / bridge (or portions thereof) ever need to be built to the North.

And any improvement should consider access to the boat ramp at New Inlet. We should not lose access to this boat ramp.

For Rodanthe Breach:

Bridge in Pamlico Sound. It seem foolish to build anything within the current easement, knowing it will soon be in the surf zone; (ie the easement is within the 2060 erosion zone) . The history of this area includes Loggerhead Inlet in this general location and sooner, rather than later, this area will be breached badly. When it is badly breached, it would obviously be better that any bridging in the area was not eventually in the surf zone.

Ted A. Hamilton
6 Jib Ct
Hampton VA 23664

Property owner in Salvo NC for 40 years

Cheers Ya'll

Ted A. Hamilton
(aka Salvo Jimmy)

Smyre, Elizabeth A

From: Ted Hamilton <tedsalvo@earthlink.net>
Sent: Tuesday, January 17, 2012 6:20 AM
To: Smyre, Elizabeth A
Subject: RE: Comments on Proposed NC 12 Improvements

Two other comments came to mind similar to comments on electric power supply.

I recall Charter has for years wanted a fiber optic system on Hatteras Island but has been prohibited from putting a cable on the present Bonner Bridge because of weight considerations. I believe they will be allowed to use the replacement bridge. Any solution should consider how such a fiber optic system would be accommodated, including access for maintenance.

Likewise, CenturyLink phones are underground, at least within the villages. I don't know if underground cables are used on Pea Island, but if so, that needs to be accommodated. In addition consideration of providing for upgrade to the phone system to fiber optic should be included in any solution.

-----Original Message-----
>From: Ted Hamilton <tedsalvo@earthlink.net>
>Sent: Jan 14, 2012 12:39 PM
>To: "Smyre,Elizabeth A" <bsmyre@ncdot.gov>
>Subject: RE: Comments on Proposed NC 12 Improvements
>
>Thanks for the reply.

>Re the 1997 law and USFWS: I recall that law is fairly general and not real specific thus making it open to wide interpretation which is what I think DOI / USFWS is doing in this case. It's hard for me to imagine that where reliable access is needed for the health, welfare and safety of residents and visitors, particularly during medical emergencies and storm events requiring evacuation, that such need would not trump even the letter of this 1997 law. It makes no sense to expend funds staying strictly within the present right of way knowing that in a relatively short time the road would be in peril.

>BTW you did not address the issue of these "old" deeds supposedly giving the state access as needed without regard to "present" right of way. That, if true, would also seem to trump even this 1997 law.

>
>-----Original Message-----
>>From: "Smyre, Elizabeth A" <bsmyre@ncdot.gov>
>>Sent: Jan 13, 2012 11:02 AM
>>To: Ted Hamilton <tedsalvo@earthlink.net>
>>Subject: RE: Comments on Proposed NC 12 Improvements
>>

>>Ted-
>>Thank you for your comments! To answer some of the questions included in your email:

>>
>>- In 1997, Congress passed the National Wildlife Refuge System Improvement Act of 1997, which is an update of a similar law from the 1960's. This law stipulates how the US Fish & Wildlife Service makes decisions on activities within the Refuge system. The 1997 Act restricted what activities the USFWS could consider allowing within a Refuge;

essentially, any activity must now be consistent with the mission and purpose of that Refuge. New large-scale road and bridge construction outside of the existing NC 12 easement, as you can imagine, aren't necessarily consistent with the mission of a wildlife refuge, so we've been told that they would not be allowed. Therefore, road relocations that were allowed prior to 1997 wouldn't be allowed today. We've discussed this act and its implications to our project alternatives in our previous environmental documents for the project.

>> We work closely with the Cape Hatteras Electric Co. on determining the potential impacts of our alternatives on their utility easements. We provide them with copies of all our environmental documents, and any information they provide us on potential rate increases is considered as part of the overall decision.

>> We do consider the impacts of our alternatives on the ability to access the Refuge and the Seashore. Certainly, any bridging option at either of the breach sites will restrict access to the Refuge in those locations.

>> Again, thank you for your comments, and please let me know if you have any other comments or questions!

>> Thanks,
>> Beth

>>-----

>> Beth Smyre, P.E.

>> Project Planning Engineer

>> NC Department of Transportation

>> Project Development & Environmental Analysis Unit

>> 1548 Mail Service Center

>> Raleigh, NC 27699-1548

>> (919) 707-6043

>>

>>

>>-----Original Message-----

>> From: Ted Hamilton [mailto:tedsalvo@earthlink.net]

>> Sent: Thursday, January 12, 2012 7:11 AM

>> To: Smyre, Elizabeth A; norburn@ncdot.gov

>> Subject: Comments on Proposed NC 12 Improvements

>>

>> The following are my comments on NC 12 proposed solutions in the Pea Island area.

>>

>> 1. Many of us have never seen a really definitive reason why NCDOT now has trouble getting permits from USFWS to move the road from its current right of way. In 1988 the road was relocated well to the West of the then right of way in the S-Curve area. Again in 1996 the same type of relocation occurred in the Sand Bag area.

>>

>> What has changed to make this type of movement more difficult if not impossible????

>>

>> It is one thing if it has resulted from new law but a whole different matter if it is just new DOI and/or USFWS policy. If the latter, that should be seriously challenged by the state in order to provide the best long term solution for a given area of the route. I have even seen articles indicating deeds exist that give the state basically right of way where ever it is needed, although some environmental groups disagree.

>>

>> The public should be informed definitively as to the reason for this right of way difficulty, because common sense says that in general the farther West (away from the surf zone) the road is located, the better the long term survival.

>>

>> 2. Any solution should carefully consider the impact on electric rates to relocate power lines in order to provide reliable maintenance access. In 2007 CHEC estimated that an approximate 42% rate increase would be required to fund the relocation of the line on or near the then proposed 17 mile bridge that bypassed Pea Island. No doubt a similar

Smyre, Elizabeth A

From: Abbott, Steve
Sent: Wednesday, December 14, 2011 4:46 PM
To: Smyre, Elizabeth A
Subject: NC 12 comment

Hi,

Here is one from Contact Us

Steve

Tim sorrells

Phone: (443)789-9176

Email: drsorrells@yahoo.com

Comment History Tracking Number: 50VJSMBQUY

[Print](#)

Sent By: Tim sorrells

Date/Time: 12/14/2011 4:37 PM

Comment:

I am in support of beach nourishment as a potential solution to the problem in Mido Beach and Rte 12. I favor this over the construction of bridges. I feel we should try nourishment first and if it becomes obvious that is not working, then talk about bridge alternatives. I own a house in Waves, NC so I obviously have a personal investment here. Thank you, Tim Sorrells

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increase would be needed if the now USFWS proposed 7 mile long bridge was to be built. I say similar increase because the increase would not be directly proportional to bridge length because design, environmental impact studies, etc would be similar in cost regardless of bridge length.

>> >>3. Any solution should carefully consider the impact on public access to areas of Pea Island. When the 17 mile bridge was first proposed NCDOT indicated they would obviously not maintain any sort of road on Pea Island. USFWS indicated they certainly would not maintain any sort of paved access and further indicated they would likely require the pavement be removed. In addition USFWS indicated that individual access by private vehicles would likely not be allowed, but would most likely go with a 4WD bus system similar to that used at Back Bay in VA.

>> >>Such access limitations as above would be unacceptable. At a minimum private vehicle access by at least 4WD vehicles on sand roads similar to the Interdunal Road near Cape Point and Pole Road at Hatteras Inlet should be provided for.

>> >>Now that said let me be clear in my expectations. If, for example, the 7 mile bridge proposed by USFWS is built, I would expect to see a sand road from the North end of Rodanthe to the South side of the new Pea Island Inlet and a sand road from the North terminus area of the bridge to the North side of the new Pea Island Inlet. But if, for example, an inlet was eventually formed at the S-Curve area, or any other area, I would not expect any bridging or fill of such an inlet to accommodate a sand road. We should at least start with reasonable sand road access and let new inlets dictate what access remains over time. Such access should be agreed to by USFWS as part of this process and factored into the road improvement decisions. It should not be left undecided and for USFWS to decide in the future as they indicated during discussions on the 17 mile bridge.

>> >>4. Any bridge / raised roadway solutions should carefully look at what wind restrictions may be needed and their impact on travel / access. I refer you to wind restrictions on the Chesapeake Bay Bridge Tunnel as examples of a similarly exposed roadway that is purposely not used as an evacuation route because of the wind restrictions.

>> >>Now having said all the above, I think the following are the best compromise solutions that would address my 4 concerns.

>> >>For Pea Island Breach:

>> >>Bridge on new location. This requires only a short section of new right of way, moves the road further from the surf zone (beyond the 2060 erosion zone) in the area of the breach (particularly to the South as inlets tend to migrate South; eg. Oregon Inlet), places it on a bridge so the current inlet can be left for sound water outflow relief from potential sound flooding and provides better interconnect to the North if the conceptual road / bridge (or portions thereof) ever need to be built to the North.

>> >>And any improvement should consider access to the boat ramp at New Inlet. We should not loose access to this boat ramp.

>> >>For Rodanthe Breach:

>> >>Bridge in Pamlico Sound. It seem foolish to build anything within the current easement, knowing it will soon be in the surf zone; (ie the easement is within the 2060 erosion zone) . The history of this area includes Loggerhead Inlet in this general location and sooner, rather than later, this area will be breached badly. When it is badly breached, it would obviously be better that any bridging in the area was not eventually in the surf zone.

>> >>Ted A. Hamilton
>> >>6 Jib Ct
>> >>Hampton VA 23664

>> >>Property owner in Salvo NC for 40 years

>> >>Cheers Ya'll
>> >>Ted A. Hamilton
>> >>(aka Salvo Jimmy)

>> >>_____

>> >>Email correspondence to and from this sender is subject to the N.C. Public Records Law and may be disclosed to third parties.

>> >>Cheers Ya'll
>> >>Ted A. Hamilton
>> >>(aka Salvo Jimmy)

>> >>Cheers Ya'll
>> >>Ted A. Hamilton
>> >>(aka Salvo Jimmy)

Smyre, Elizabeth A

From: Haug <haug@astound.net>
Sent: Wednesday, December 14, 2011 12:32 PM
To: Smyre, Elizabeth A
Subject: Hwy 12 - Outer Banks

I strongly support the beach nourishment options to create a stable corridor for the road.
Karl and Billi Haug
Owners
Sandbox at Salvo

Smyre, Elizabeth A

From: Bluesadvice@aol.com
Sent: Friday, December 09, 2011 11:49 AM
To: Smyre, Elizabeth A
Subject: Rodanthe road options

Dear Ms. Smyre,

This letter is for the purpose of asking NCDOT to proceed with the beach nourishment option for Highway 12 into Rodanthe. The bridge options, particularly the bridge in the sound, would harm the idyllic atmosphere of Miffo Beach and the surrounding area. My second choice would be the shorter bridge into Rodanthe along with the beach nourishment option.

The other bridge options are too disruptive to the area, too expensive, and would leave Rodanthe open to further erosion and loss of property value.

Nancy Hawkins

Norburn, Robert E.

From: Smyre, Elizabeth A [bsmyre@ncdot.gov]
Monday, January 23, 2012 8:57 AM
To: randy hirscher; Norburn, Robert E.
Cc: Office of the Governor; governor.office@governor.ncmail.net; LT, Governor
Subject: RE: Mirlo Beach/Hwy 12 Beach Fix Options

Randy, Julie-
Thank you for your comments on the NC 12 projects. Every comment that NCDOT receives will be carefully considered as the planning process for the projects moves forward. If you have any further comments or questions, please feel free to contact me.
Thanks,
Beth

Beth Smyre, P.E.
Project Planning Engineer
NC Department of Transportation
Project Development & Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548
(919) 707-6043

From: randy hirscher [mailto:rhirscher@yahoo.com]
Sent: Friday, January 20, 2012 6:26 PM
To: Smyre, Elizabeth A; norburn@pbworld.com
Cc: Office of the Governor; governor.office@governor.ncmail.net; LT, Governor
Subject: Mirlo Beach/Hwy 12 Beach Fix Options

Ms. Smyre and Mr. Norburn:

I wanted to take the opportunity to contact you to provide my input to the Mirlo Beach Breach Fix Options that are under consideration and which NC DOT and the Office of the Governor will be making a decision about shortly. As one of the ocean front home owners in Mirlo Beach who is directly experiencing the effects of the overwash and erosion that is regularly occurring, and whose property will be directly impacted by any decision that is made on the breach fix option, I am dismayed to hear that beach nourishment option has been eliminated--right from the start--from serious consideration as a viable option to restore the highway while preserving the natural beauty that Hatteras Island is known for around the world. Any of the bridge options that might be chosen, besides being a more costly long-term option and contradicting the natural essence of the Island, will essentially commit our community (Mirlo Beach), including our house, to the sea. The Army Corps of Engineers built an engineering marvel that would stand any test of time when it built the dunes that line the island...that is, until the groin was set up at Oregon Inlet which shut off the natural flow of sand up and down the island. I would ask that NC DOT seriously reconsider the beach nourishment option -- one that is established and maintained like the Army Corp set up. NC DOT has a constant long-term source of sand that is being dredged at Oregon Inlet to maintain any beach nourishment option.

Thank you for your consideration of our comments!

Many best regards,

Randy and Julie Hirscher
22009 Sea Gull Street
Rodanthe, NC 27968

COMMENT SHEET

**Bonner Bridge Replacement Project
Public Workshops - Phase II
TIP No. B-2500
Dare County**

NAME: MR & MRS Robert Horning
ADDRESS: P.O. Box 132, Occoake, NC 27960
E-MAIL:

COMMENTS AND/OR QUESTIONS:

We strongly recommend building the long bridge - make absolutely no case to rebuild the bridge or close to the inlet - building across the strand where it would be more protected and the road would be more secure seems to be the most logical and sane way to go

Respectfully,
Mrs. Julie Hirscher

Comments may be mailed by January 20, 2012 to:

Ms. Beth Smyre, PE
NCDOT - Project Development and Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548
Email: bsmyre@ncdot.gov

Smyre, Elizabeth A

From: Ben Hutchinson <ben.hutchinson@gmail.com>
Sent: Wednesday, December 14, 2011 11:18 PM
To: Smyre, Elizabeth A
Subject: Beach Nourishment Plan

Dear Ms. Smyre,

I am writing you this email to express my support for consideration of the beach nourishment plan in Hatteras Island. I understand that you are meeting about this issue tomorrow, and I would like to add my voice to any others there might be in support of assessing the feasibility of the plan. My family has been coming to the Outer Banks for several decades now, and not only have we regularly supported the rentals-based economy and local businesses there, but we also own property in Rodanthe and are invested heavily in its future. From my understanding of the various proposals, the nourishment plan seems to be well worth considering given its relatively low cost and non-intrusive nature. I hope that you ultimately choose what is best for Rodanthe, and I believe that course of action to include at least looking into the nourishment plan. Many thanks for your time.

Best,
Ben Hutchinson

Smyre, Elizabeth A

From: Beth Hutchinson <beth.b.hutchinson@gmail.com>
Sent: Wednesday, December 14, 2011 11:57 AM
To: Smyre, Elizabeth A
Subject: Mirlo beach nourishment

Dear Ms. Beth Smyre,

Although I do not currently live in North Carolina, I've been vacationing in the Outer Banks for most of my life. I visit at least twice a year, I was married at Bodie Island lighthouse and I consider our family vacation home in Mirlo Beach my second home.

I realize that you will be meeting with other representatives tomorrow as part of a merger team to discuss action regarding solutions for the erosion and transportation issues affecting highway 12 near Mirlo Beach. **I hope you will strongly consider beach nourishment as a solution.** This approach has the potential to preserve the natural beauty of this special place in a *cost-effective, forward-thinking and sensible* way.

Thank you for your time.

Sincerely,
Beth Hutchinson

Smyre, Elizabeth A

From: Hutchinson, Wes <jwhutch@wharton.upenn.edu>
Sent: Tuesday, December 13, 2011 2:09 PM
To: Smyre, Elizabeth A
Baker, Sterling D; Capehart, Bob; Nance, Jon G; Bouchelle, Tammy; Roseam
Cc: Verrecchio, mike.bryant@fws.gov; Scott_lanier@fws.gov; dennis_stewart@fws.gov
Office of the Governor
Subject: NC12 in Mirlo Beach - Comments for the Dec 15 meeting of the Bonner Bridge
Merger Team
Attachments: MirloBeachErosionOpinion-CSE-1Nov2011.pdf

Beth,

<https://sites.google.com/site/mirlobeachnc/home>

The above URL links to a website we have developed to inform the general public and specific stakeholders about the opinions of the Mirlo Beach Home Owners Association (MBHOA) regarding the beach nourishment design option for the Rodanthe part of Phase 2. **WE STRONGLY FEEL THE NOURISHMENT OPTION MERITS FURTHER STUDY.** Unless you know exactly where the sand is (and isn't), we cannot see how you can make an informed final decision that is in the best interests of the citizens of the State of North Carolina and all of the others who find value in the outer banks.

When you and I met at the NCDOT workshop (Monday 12/5/11), you suggested that I put all of our comments in one place. I am sure that individual home owners will contact you separately, but on behalf of MBHOA, I have pasted below "The 10 Top Reasons to Support Beach Nourishment" from our website. I have also pasted below the letter we emailed to you on November 4, 2011, and I have attached the report by Coastal Science and Engineering, which we also sent earlier.

Since you and John Page (PB Americas) indicated at the workshop that the cost of nourishment is difficult to quantify and that you do not attempt to quantify the costs of the bridge options in terms of damage to the local economy (which are qualitatively outlined in the FEIS), please note Reasons #6 and #8, respectively. These are necessarily very approximate estimates; however, we will continue to refine them and update our website as we do more research and consult more with a variety of experts.

After we learn which options have been retained by the Merger Team for further study and receive a copy of the expert report (which you said you would send), we will almost certainly have more comments to submit.

Thanks again for all of your hard work and that of the Merger Team.

--wes

The 10 Top Reasons to Support Beach Nourishment

- 1. Beauty.** The ribbon of sand that is the Outer Banks of North Carolina provides some of the most beautiful beaches in the world, some of the most beautiful wildlife, some of the most beautiful sunrises and sunsets. Nourishment preserves this beauty. Let's be honest, bridges are ugly.
- 2. Working with nature.** Nourishment maintains a beach with sand matched to that beach. Pumping sand back onto a beach is simply using a human force to repair damage done by a natural force -- erosion. No concrete, no steel, no permanent manmade changes to nature.
- 3. Permanence.** It is sometimes said that beach nourishment is not a permanent solution, but that just means that the nourishment must be repeated. This is how New York, New Jersey, and Delaware maintain their beaches (along with many

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states and countries). The Final Environmental Impact Statement (FEIS) estimated that the nourishment cycle for Rodanthe would be once every 4 years. However, we will never know until we try it. It could be shorter; it could be longer. Thus, we should nourish as soon as possible to learn the facts.

- 4. Speed.** Nourishment is the fastest way to protect NC12. The main thing that delays nourishment, is getting the needed permits. In South Nags Head, that took several years, which is about how long it takes to design and build a bridge. We assume that a project this big and important will be fast-tracked by the appropriate government agencies. NC12 needs protection ASAP!
- 5. Flexibility.** Because nourishment is an ongoing solution, it can be repeated sooner or later depending on conditions. It leaves open the possibility of better solutions 20 years down the road based on new technologies. A bridge can always be built later if experience proves that nourishment is too costly or ineffective. A bridge cannot be "unbuilt" later, if nourishment is shown to be better or if better alternatives emerge. A bridge cannot even be stopped halfway if cost overruns show it to be much more expensive than expected.
- 6. Saves money.** The cost of a bridge in Rodanthe is \$114 million to \$240 million (NCDOT estimate in 2006 dollars, \$128MM to \$270MM in 2011 dollars) and \$169 million to \$212 million (our estimate in 2011 dollars based on figures provided by Coastal Science and Engineering). However, build a bridge today, pay for it today. Begin beach nourishment and you pay only 1/12 of the total cost today, and the "present value" cost of nourishment is only \$106 million to \$133 million.
- 7. Due diligence.** The BIG question with nourishment is whether or not sand can be found. This is why nourishment needs to be one of the alternatives selected by NCDOT and the Merger Team on December 15 for additional study. What the experts have said is that there is very little sand in Wimble Shoals (several miles from Rodanthe), but there is a lot of sand in Platt Shoals, which is 6 - 9 miles north and there may be sources of sand in between. Experts also say that even 10 - 20 miles can be economically feasible. We need to know where the sand is!
- 8. Preserves the Hatteras Island economy.** All of the bridge alternatives will have a devastating effect on the cultural and economic life of north Rodanthe (not just Mirlo Beach). Popular uses such as fishing, birding, surfing, wind surfing, and kite boarding will all be negatively affected or eliminated. Vacation rentals and property values will plummet. The Mirlo Beach subdivision alone has a tax value of over \$50 million, and the rest of northern Rodanthe is worth at least that much. Thus, the annual tax contribution to Dare Co. is over \$400,000. Over the 50-year life of a bridge, that is \$20 million. Add to that the rental revenue and retail sales to vacationing renters and it is clear that bridges will result in a substantial financial loss to our community. ... and our community is one of the few that send more tax revenue to Raleigh than is spent here on government services.
- 9. Rodanthe is the test case for all of OBX.** All of Hatteras Island is experiencing erosion problems; private homes in the villages, Pea Island Wildlife Refuge, and the Cape Hatteras National Seashore. What happens in Rodanthe will be a model for everywhere else. Do we really want a policy of simply building bridges and abandoning the current NC12 and the lands it supports? Is it right to just let the island dissolve into the Atlantic, when nourishment might keep the place just like it is now?
- 10. Send a message.** It took 20 years to make a decision about the Bonner Bridge. The North Carolina Department of Transportation and the Federal Highway Administration worked with a Merger Team with representatives from many local, state, and national governmental organizations. But the people who live, work, and play here always come last. We get a month or two of public comment, then a decision is made. It is time for common sense to prevail. Please send a message to everyone who will be in the room when this decision is made and everyone who can directly influence this decision. It is now or never.

The message below was sent 11/4/11:

Jerry, Beth, and others at NCDOT and USFWS,

Thanks again for your responsiveness in providing information in the past and for arranging for Jim Hoadley to attend the meeting on Monday (10/31/11) at Mirlo Beach where NCDOT, USFWS, CHEC, and MBHOA (board members and affected property owners) were represented.

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secured bids to complete the work. Unfortunately, the MBHOA does not have the funds to complete this project. We have filed for FEMA/SBA loans; however, this process is long, and approval for such loans is not guaranteed. Our current understanding, based on your previous responses, is that NCDOT has no further forms of assistance for us, and our only recourse is to make a legal claim of damage. Is that true? Is that true for USFWS as well? This is not something we are eager to do, except as a last resort. We would much rather find a more cooperative solution. Thus, we need to know that it is our only remaining option before we go down that path. Do you think assistance might be available from some other NC or federal agency?

As always, we deeply appreciate your efforts; the information you have provided, and your willingness to engage in frank and productive discussions.

Sincerely,

Wes Hutchinson
Vice President, Mirlo Beach Homeowners Association

I would like to share two opinions that have emerged among MBHOA members. Opinion 1 involves the more immediate issue of the erosion of private property on the west side of NC 12, and Opinion 2 involves the more long term beach erosion and ongoing damage to NC 12 and private property. Both of these opinions are based on our frequent observations of the area and a preliminary expert report prepared for MBHOA by Coastal Science and Engineering (CSE). Major CSE projects in North Carolina include the beach nourishment project at Mags Head and the Bogue Bank project in Carteret County. Their report is attached to this email for your review.

We would be very interested to know whether or not you share our opinions, and, if not, we hope you will share the evidence that leads you to different conclusions. Overall, our opinion is that NCDOT and USFWS decisions and actions, however well intended and cost effective at the time, have contributed significantly to the extreme erosion damage that occurred during Hurricane Irene. From our common sense perspective, we believe some type of significant assistance from both agencies is appropriate and deserved. Moreover, we hope that the information we are providing assists both agencies in their current decisions about the future of Hatteras Island and that they will fully take into account the likely damage to Mirlo Beach that will almost certainly result from some alternatives under active consideration.

OPINION 1: THE CAUSES OF THE EXTREME EROSION AT MIRLO BEACH DURING HURRICANE IRENE. The erosion in question occurred on the west side of NC12 from Blue Sea Rd. to Green Lantern Ct. and removed most of the sand in that area transforming property that was approximately 4 foot above sea level into a pond whose bottom is now several feet below sea level. Nine Mirlo Beach properties as well as MBHOA roads and common areas were directly affected. All Mirlo Beach properties were indirectly insofar as ocean access is now limited for properties west of NC12. We also believe the power poles in standing water and remaining debris represent a significant safety hazard.

We believe there were **four important causal factors** that created this extreme and focused erosion rather than the diffuse and limited erosion that normally occurs in sound side flooding. **First**, the narrow breach at the boundary of Rodanthe and Pea Island Wildlife Refuge created a singular point of drainage for the 4 - 5 foot of water that flooded the area when the winds from Irene shifted to the southwest. **Second**, this focal breach was most immediately caused by the canal running between the ponds in the Refuge (Paul's Ditch), which significantly increased the water pressure at the point of the breach. (Evidently this canal has been in place for many years and is jointly maintained by NCDOT and USFWS. Several residents noted that it was cleared and re-established just prior to the storm.) **Third**, the sandbags placed on the east side of NC12 just north of the breach formed a dam which prevented overwash or secondary breaches, forcing all of the water through the narrow breach (plus NC12 and elevated beachfront properties south of the breach also acted as a dam). **Finally**, from a broader perspective, this breach (indirectly) and previous ocean side breaches (more directly) were caused by the high beach erosion rate at this "hot spot." Given this, the breach would have been prevented had there been a program of beach nourishment of sufficient scale in prior years. In particular, based on our previous discussions with you, we know that such a project had been planned (at least for study, R-3116D), but was set aside several years ago in deference to the Bonner Bridge plan. Of course, there may have been good budgetary and political reasons for not engaging in beach nourishment in previous years, but it is a fact, nonetheless, that such nourishment would have prevented this damage.

OPINION 2: BEACH NOURISHMENT IS A VIABLE LONG-TERM SOLUTION TO THE RODANTHE HOT SPOT PROBLEM. At our meeting on Monday, Dennis Stewart (USFWS) told us that there had been a high-level, inter-agency meeting about long-term solutions the previous Monday (10/24/11), which he attended. He said that during that meeting evidence was presented that while there was appropriate sand close to Mirlo Beach (e.g., within 3 miles) that this source was not sufficiently large to supply a long-term solution. He also mentioned that a distance of 6 miles was considered, but was thought to be too costly. You will note in the attached CSE report that distances of 10 to 20 miles are sometimes economically viable. Thus, based on the currently limited information that we have about NCDOT plans, we are very concerned that NCDOT is prematurely abandoning beach nourishment in favor of a bridge. We believe that, if only as a matter of due diligence and fairness, NCDOT should also get an analysis from CSE (i.e., more detailed and thorough than the one attached). While there are many experts that can provide valuable input to the NCDOT decision, it is hard to think of anyone with more practical and scientific knowledge of actual nourishment projects on the NC coast.

As we all know, the Governor has mandated that a long-term solution to the NC 12 problem be developed and implemented as soon as possible. Thus, we believe it is important for you to understand our Opinion 2 and for us to understand your opinions and the process you now plan to follow. However, the issues in Opinion 1 are a more immediate concern for us. MBHOA has contacted the necessary agencies to secure permits to fill in the erosion on the west side of NC 12. We have also

Smyre, Elizabeth A

From: Hutchinson, Wes <jwhutch@wharton.upenn.edu>
Sent: Tuesday, December 13, 2011 9:08 PM
To: Smyre, Elizabeth A
Subject: FW: Mirlo Beach and Phase 2 of the Bonner Bridge Project

FYI.

--
Wes Hutchinson
Stephen J. Heyman Professor
Marketing Dept., 746 Jon M. Huntsman Hall
The Wharton School, University of Pennsylvania
Philadelphia, PA 19104-6340

office: (215) 898-6450
fax: (215) 898-2534

From: Robert Dean <rd dean@coastal.lafayette.edu>
Date: Tue, 13 Dec 2011 20:41:38 -0500
To: John Wesley Hutchinson <jwhutch@wharton.upenn.edu>
Subject: RE: Mirlo Beach and Phase 2 of the Bonner Bridge Project

Hello:

Without knowing all the background information, I believe that "further study for nourishment" should be worthwhile. I suspect that the "UF expert" that Beth Smyre referenced was Dr. Max Sheppard. However, to the best of my knowledge, he does not work with beach nourishment.

Let me know if I can assist further.

Best regards,

Bob Dean

From: Hutchinson, Wes [<mailto:jwhutch@wharton.upenn.edu>]
Sent: Tuesday, December 13, 2011 1:29 PM
To: rd dean@coastal.lafayette.edu
Subject: MirloBeach and Phase 2 of the Bonner Bridge Project

<https://sites.google.com/site/mirlobeachnc/home>

I am the VP of the Mirlo Beach Home Owners Association and several paths have led me to you. As you probably know know the Bonner Bridge merger team will be meeting on Thursday to decide which design options to retain for further study for Phase 2 of the Bonner Bridge Project. While researching beach nourishment, I came across a 2004 report you did with Robert Dolan, at the NCDOT workshop last week. Beth Smyre mentioned that one of their experts was from UF (so I googled you, BTW I was on the UF faculty for 13 years before coming to U Penn), and this morning when I asked Tim Kana (Coastal Science & Engineering)

about you, he said, "Bob Dean is revered in our profession and would be a great resource for you." Thus, I would love to know your opinions about beach nourishment as a Phase 2 solution for the Rodanthe hot spot.

As you might expect, the MBHOA is a strong advocate of further study for nourishment. We think it's worth the time and money to find out exactly where the sand is (or isn't) before a final decision is made. We will be "going public" this afternoon with a website (link is above -- gotta love Google). I am running it by the experts we have contacted for comments and especially to confirm that the facts behind our opinions are right (even though others might arrive at different opinions based on the same facts). We would value any thoughts you might have.

--WES

--
Wes Hutchinson
Stephen J. Heyman Professor
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Philadelphia, PA 19104-6340

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fax: (215) 898-2534

bar is foolish, building a fixed structure behind the dike is fool-hardy.

We would appreciate a response to our comments.

Thanks

Windsor J

Smyre, Elizabeth A

From: Lynn & Windsor Jacques <frisconc@embarqmail.com>
Sent: Sunday, December 11, 2011 10:12 PM
To: Smyre, Elizabeth A
Subject: comment on the rt12 pea island fix

Lynn & Windsor Jacques
51170 Lassiter Lane
P.O. Box 1025
Buxton, NC 27920-1025
Tel 252-995-3760
e-mail: frisconc@embarqmail.com
Cell Phone 252-995-2125 or 252-305-1040
December 11, 2011

Ms. Beth Smyre, PE
NCDOT - Project Development and Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548

Re. Comment concerning the Bonner Bridge replacement project - phase II TIP No. B-2500 Dare county

Ms. Smyre.

My wife & I attended the NCDOT Bonner Bridge Public Workshops meeting in Rodanthe on 12/6/11. I want to compliment you & your staff on presenting a well organized and informative meeting. The NCDOT personnel were knowledgeable & personable.

As you know, the Pea Island road situation is critical to the survival of Hatteras Island, & Dare county as a whole, both economically & socially. We firmly believe that the solutions presented at the meeting to fix the Pea Island situation were stop-gap & temporary at best. If NCDOT, the state, Dare county, the federal government &, most of all, the residents, are serious about providing sustainable access on & off Hatteras Island, we need to reconsider the Pea Island causeway by-pass, which was part of the original Bonner Bridge replacement proposal. During the December 6 meeting, the only reason we were given for not considering the Pea Island by-pass was that it would be too expensive. This being said, there are creative & innovative ways to finance such a project which could include tolls, a special tax on the people who benefit, municipal bonds or private investment. Yes, it will be expensive; & not politically attractive but it should be evaluated. One option that should be considered would be to tie a by-pass into the existing Bonner bridge. The existing bridge may not meet modern design criteria but is being maintained to be safe & useable.

During the meeting, when we mentioned a ferry system around Pea Island. We were told that NCDOT had evaluated a ferry solution & felt that a ferry system could not be engineered which would be able to handle the traffic & therefore did not present it as a viable solution. This answer is a cop-out. Given the gravity of the situation, we need to include a ferry solution as part of the evaluation process. I feel a ferry solution could be engineered & may be the least expensive & the most effective.

Pea Island is a dynamic westward moving, environmentally sensitive sand bar in the Atlantic ocean, the ocean is rising, storms are unavoidable, beach erosion is inevitable, engineering & building a sand dike on this sand

Smyre, Elizabeth A

From: Frank A. Jakob <capehatreal@yahoo.com>
Sent: Tuesday, December 06, 2011 7:56 PM
To: Smyre, Elizabeth A
Cc: Jerri Getty, ccjake44@gmail.com; Warren Judge; Warren Judge
Subject: Public Comment Rodanthe Dec 6, 2011 re NC Hwy 12 and new Bonner Bridge
Attachments: 12062011 faj proposed stumpy point bridge scan0003.pdf, 12062011a aerial ocean front and sound front Dare co parcels rodanthe scan0004.pdf

Dear Beth Smyre,

I attended the public comment in Rodanthe this evening, December 6, 2011 regarding the construction of the new parallel Bonner Bridge and alternatives on how to maintain NC Highway 12 to Rodanthe. This was the fourth such meeting in the past 6 years and many more of the same meetings I've attended over the past 20 years. Hopefully we are getting closer to a solution.

After reviewing your site plans and many proposals, I'd like to offer my comments below:

First off, I would like to tell you a little about myself. I have an engineering back ground and worked as a project engineer for 10 years with United Engineers and later, Stone and Webster in the construction of Electrical Power Plants and Steel Mills. I relocated to Rodanthe in 1976 and have been in the development and construction of real estate here for over 30 years. I currently own and operate Cape Hatteras Realty and Construction Corp in Salvo, NC. I'm the broker who was responsible for the sale of Iannet's Fishing Pier and later indirectly Manns Harbor Marina to the State of North Carolina, as well as many similar projects in my 30+ year experience. I have seen the effects of beach erosion on NC Highway 12 thru-out Pea Island and Rodanthe with over 1,800 feet lost due to erosion in one storm (south side of Oregon Inlet circa 1970's). There are many plotted lots in Rodanthe that are now in the ocean, including a 28 unit condo project on S Holiday Ave. The highway has been relocated 3 times since I've lived here, and now there is no land left to relocate it again. After reviewing historical maps from the 17th and 18th century Rodanthe was an inlet for centuries. Trying to combat the natural southerly flow of ocean currents in this hemisphere with beach erosion is a losing battle.

Sometimes you have to step back and take another look to see the forest thru the trees. Attached is a site plan marked "Alternate III" and aerial of Dare County property in Rodanthe. The only reason we have a problem with NC Highway 12 thru Pea Island is because we are **building a new bridge** in the **wrong location**. "Forget a new bridge across Oregon Inlet". Take the funds and build a new 1.3 mile bridge across the sound from the NC State Ferry terminal in Stumpy Point to the NC State/Dare County Ferry Landing in Rodanthe (behind the community center). Leave Pea Island alone for the wildlife. There would be no need for beach nourishment or maintenance of NC Hwy 12 or property acquisitions.

Let mother nature take care of the Rodanthe and Pea Island Breech. Make it accessible for walk on traffic only. Dare County already owns 9.82 ac sound-front (Rodanthe-Waves-Salvo community center) and 7.33 ac vacant ocean front land across the road from the community center. The county already applied for a grant on the ocean front parcel to build a recreation center with public parking. This would allow public walk-on access along the beach front to Pea Island.

This could be a simple solution to a unsolvable complex problem (and getting bigger).....provided you can get thru the political hoop net. The life line of over 5, 000 Hatteras Island residents and 1,500 hundred Ocracoke residents, including hundreds of small mom and pop businesses and emergency services depend on safe dependable access from Rodanthe.

After all, the State and Feds are almost finished building a new high speed interstate US/NC 64 from I-95 (Rocky Mount, NC) to Manns Harbor/Nags Head, NC which could easily intersect Stumpy Point, NC.

"Bingo"

Please feel free to contact me if you have any questions.

Thanks and Have a Great Day!



"Without hard work, nothing grows but weeds"

Frank

Frank A. Jakob, President Realtor-Broker-Auctioneer
Buyer-Seller Agent & Investment Broker (1031 Tax Deferred Exchanges)
Residential-Commercial-Business Broker

MLS Services (IDX All Listings updated daily)
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Smyre, Elizabeth A

From: Thomas Kligge <tdkligge@gmail.com>
Sent: Wednesday, December 14, 2011 11:35 AM
To: Office of the Governor
Cc: Smyre, Elizabeth A; timspear@ncleg.net; Warren Judge; allenb@darenc.com; joshua.bowfen@mail.house.gov; kara_weishaar@burr.senate.gov; aaron_suntag@hagan.senate.gov
Subject: Beach Nourishment

Dear Government Officials, in addition to all information that you probably have received supporting beach nourishment for the Rodanthe area, a quick personal story: In May 2011, my wife and I invested our life savings in our dream house in Mirlo Beach. After exploring the entire eastern coast from Delaware to South Carolina, we both decided this is where we wanted to be. We felt we were safe investing on the west side of Route 12, thinking it would be there to protect us. Now, several options proposed, are threatening the entire northern area of Rodanthe. Please decide to pursue beach nourishment to protect this beautiful and historic area for us and our descendants. Thank you, Tom and Janet Kligge.

Smyre, Elizabeth A

From: Cathy Lane <LANECA@pwcs.edu>
Sent: Thursday, December 15, 2011 3:05 PM
To: Smyre, Elizabeth A
Subject: Beach Nourishment

I am writing to you today with concerns about the proposal to ensure access to Hatteras Island through a beach nourishment project. Because I spend my summers in Hatteras Village and plan to retire there, I am greatly interested in keeping full time access to Hatteras Island available. However, I do have some questions that I would like to see addressed before a decision is made to go ahead with beach nourishment. Those questions are as follows:

- 1) Where is the sediment coming from? Will it be dredged and pumped onto the beach, or brought by dump trucks? If the sediment is being brought in, how will the eventual erosion of the new material affect the offshore environment? If it is being pumped in, how will the loss of sediment offshore and the dredging affect the offshore environment?
- 2) What will the size of the sediment be? Will it match the current grain size on the beach or be larger or smaller? Will the sediment be well sorted or poorly sorted? This will make a difference in how quickly the new beach erodes.
- 3) Will there be mud and silt mixed in? These tend to erode quickly and cause poor water quality directly offshore. In addition, contaminants tend to build in mud and silt.
- 4) Will the new sediment be compacted more than the existing sediment? Organisms that currently use the beach might not be able to survive if the sediment becomes too compacted.
- 5) Will a sediment toxicology study be done before the project is started?
- 6) Will the beach profile be affected? Will the "new" beach be steeper than the existing beach? This will affect how quickly it erodes and what organisms can utilize the beach.
- 7) Has a biological impact study been done? Will sea turtle nests be affected (sea turtles would be unable to nest on a compacted beach and cannot crawl onto a steep beach profile)? If there is mud and/or silt in the sediment greater than a few %, are there offshore filter feeders (clams, mussels, etc) that could be affected by the resulting poor water quality as the mud and silt erode?
- 8) Where is the funding coming from?

I thank you for taking the time to read this e-mail. I also thank you in advance for taking the answers to these questions seriously before any decision is made regarding beach nourishment. While, again, I want access to Hatteras Island, I do not want it at an exorbitant cost. Nor do I want the environment harmed to too great an extent. After all, it is for the great beauty of the Outer Banks that I spend my summers there.

Thank you,

Cathy Lane
Oceanography Instructor
Science Department Chair
C.D. Hylton High School

Smyre, Elizabeth A

From: Chris Lazinski <clazinsk@gmail.com>
Sent: Thursday, January 19, 2012 3:24 PM
To: Smyre, Elizabeth A
Subject: Comments on the Future of S-Turns

Hello Ms. Smyre,

I'm writing in response to a recent article in ESPN Surfing (<http://espn.wzBcbh>) that details the potential outcomes of NCDOT's planning for the future of the Pea Island and North Rodanthe beach sites. As a resident of Hatteras Island whose employment depends on access to the waters of the ocean and the sound, I urge you to consider the needs of the surfing community in designing the future road structure of the S-Turns area. I teach kiteboarding and surfing lessons full-time for Real Watersports in the town of Waves, and I can attest that a very significant portion of our year-round business comes from tourists who travel to Hatteras Island specifically for surfing or kiting. By designing a road structure that does not easily preserve access to this area, we risk losing at least some of these surfers and kites to other, more easily accessible riding locations. This risk is unacceptable to an island that was so physically and economically damaged by Hurricane Irene this past August. In years past, the lack of public parking or designated public beach accesses in the S-Turns area has led to conflicts with property owners and a weakening of the dune structure due to constant human traffic. Barring any more large natural events, the surf breaks at the north end of Rodanthe won't be going anywhere, and as a consequence, neither will the surfers. By designing a long-term plan that takes the needs of surfers into account, such as the needs for parking, bathrooms/changing rooms, and designated beach accesses, we can preserve access to these breaks while also pleasing local property owners and helping preserve the dunes in that area. I feel that this win-win-win outcome should be the goal of your design process, and I hope the DOT listens to our concerns.

Best,
Chris Lazinski
Kiteboarding Coach, Real Watersports
www.realwatersports.com

B-56

COMMENT SHEET

**Bonner Bridge Replacement Project
Public Workshops – Phase II
TIP No. B-2500
Dare County**

NAME: Rush Little

ADDRESS: 23310 Hwy 1a

RODANTHE, NC 27968

E-MAIL: PO BOX 876

Mailing Address HADY, VA 24101

COMMENTS AND/OR QUESTIONS:

I oppose the bridge I own a sound
front home in Rodanthe. The bridge
would take away the view and taking at
traffic not the sound front. Windbreaks
will be trying to go over and under
bridge which would be dangerous,
It would be a lose of revenue

Comments may be mailed by January 20, 2012 to:

Ms. Beth Smyre, PE
NCDOT – Project Development and Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548
Email: bsmyre@ncdot.gov

Smyre, Elizabeth A

From: SC SEA <scseasurfer@gmail.com>
Sent: Friday, January 06, 2012 12:22 PM
To: Smyre, Elizabeth A
Subject: Surfers' Environmental Alliance (SEA) support for public parking at "S-Curves" surf break on the Outer Banks

SURFERS' ENVIRONMENTAL ALLIANCE (SEA)

The Leading Edge of Coastal Activism

Respectful greetings from Surfers' Environmental Alliance (SEA),

SEA asks that any bridge-building or public transportation project on the Outer Banks include provision for public parking for recreational beach users and surfers. We believe beach access is a public right and public funds should not be used to eliminate or reduce said existing access. This request applies to the S-Curves surf break, in particular. This is a well-known break and used by surfers year-round. Such recreational activities help power the local economy, as well.

As a preliminary matter, Surfers' Environmental Alliance (SEA) is committed to the preservation and protection of the environmental and cultural elements that are inherent to the sport of surfing. Our goals are achieved through grassroots activism, community involvement, education and humanitarian efforts. We engage in projects that strive to conserve the quality of our marine environment, preserve or enhance surf breaks, protect beach access rights, and safeguard the coastal surf zone from unnecessary development. www.seasurfer.org

SEA operates nationally and overseas also when appropriate, so we are extremely interested in the Outer Banks situation. Any public action which reduces water quality, beach access, or surfing access is strongly opposed by all SEA members.

We all urge you to preserves beach access parking for surfers and all other beach users.

Jim Littlefield
West Coast Environmental Projects Director
Surfers' Environmental Alliance (SEA)
www.seasurfer.org

Smyre, Elizabeth A

From: Matthew_McCambridge@bd.com
Sent: Friday, December 09, 2011 4:54 PM
To: Smyre, Elizabeth A
Subject: Rodanthe NC 12 road options,

Dear Ms. Smyre:

This letter is to ask the NCDOT to implement the beach nourishment option for stabilizing Highway 12 into Rodanthe. It makes the most sense economically and would have the least disruptive effect of the four options. In particular, the bridge in the sound would ruin the Mirco Beach area. As a frequent visitor to the area, I know that it would harm the active sound life that is so popular. Kiteboarders, stand-up paddlers, windsurfers, kayakers, and families enjoying the shallow warm waters would all be harmed by a bridge in the sound.

I fear that any program without beach nourishment would lead to further severe erosion and the gradual elimination of the northern Rodanthe area. Thank you for your considerations.

Very Respectfully,
Matt McCambridge



Matt McCambridge
Distribution / Supply Chain

BD
1 Becton Dr., Franklin Lakes, NJ 07417 USA MC: 017
tel: 201-847-5853
E-mail: Matthew_McCambridge@bd.com Website: www.bd.com

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Headquarters Mailing Address: BD (Becton, Dickinson and Company) 1 Becton Drive Franklin Lakes, NJ 07417 U.S.A. *****

COMMENT SHEET

Bonner Bridge Replacement Project
Public Workshops - Phase II

TIP No. B-2500
Dare County

NAME: GEORGE MEAD
ADDRESS: 27251 DORA RD - SOWO
E-MAIL: GEOMEAD@CHARTER.NET

COMMENTS AND/OR QUESTIONS:

IT SEEMS TO ME THAT BENCH
NOVISHMENT IS A LAST CHANCE
IT SEEMS TO BE COSTING A GREAT DEAL
WITH ONLY TEMPORARY RESULTS
A RAISED STRUCTURE APPEARS TO BE
AN APPROACH THAT PROMISES LONGEVITY
IN THE LONG RUN, LESS OVERALL COST
AND BETTER RELIABILITY. PER LEO

Comments may be mailed by January 20, 2012 to:

Ms. Beth Smyre, PE
NCDOT - Project Development and Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548
Email: bsmyre@ncdot.gov

See Do What You Have to Do.

COMMENT SHEET

Bonner Bridge Replacement Project
Public Workshops - Phase II

TIP No. B-2500
Dare County

NAME: Shirle Mead
ADDRESS: PO Box 364 Rodanthe NC 27968
E-MAIL: GRMEAD@CHARTER.NET

COMMENTS AND/OR QUESTIONS:

I don't see much movement to a terrible
waste of money. We need a bridge and
not a temporary one. This bridge (whatever
kind you choose) needs to be started
immediately. Please don't waste
any more money repairing the road.
every time we have a storm set off the pot!!
Build a bridge.

Comments may be mailed by January 20, 2012 to:

Ms. Beth Smyre, PE
NCDOT - Project Development and Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548
Email: bsmyre@ncdot.gov

Smyre, Elizabeth A

From: Diane Medley <Diane.Medley@mcmcpa.com>
Sent: Wednesday, December 14, 2011, 1:27 PM
To: Smyre, Elizabeth A; Tim.Spear@ndleg.net; warrenj@darenc.com; allenb@darenc.com; Office of the Governor; Joshua.Bowlen@mail.house.gov; kara_weishaar@burr.senate.gov; aaron_suntag@hagan.senate.gov
Subject: Permanent Solution to Highway 12 Erosion Issues

Importance: High

Dear Government Officials and Other Leaders:

I am writing this email to plead with you to seriously consider the Beach Nourishment proposal currently being discussed for Highway 12. I am a homeowner of three houses on the Outer Banks and I have vacationed there for over 30 years. This area of your state is extremely important to many people who do not live in North Carolina but who go there on a regular basis and spend lots of time and money there every year. This portion of your state has had some misfortune of late with the storms that have damaged the infrastructure. It is very important that you consider this situation and take action now to stabilize and support this portion of your state for the future and future generations.

I appreciate your consideration of this matter and hopefully the solution that can and must occur.

Sincerely,

Diane Medley



Diane B. Medley, CPA-ABV, CVA
Co-Managing Partner
Phone / Fax (502) 882-4303

MAIN PHONE: (502) 749-1900 FAX: (502) 749-1930
2000 MEIDINGER TOWER • 462 SOUTH FOURTH STREET • LOUISVILLE, KY 40202

LOUISVILLE | LEXINGTON | FRANKFORT | CINCINNATI
AN INDEPENDENT MEMBER OF BAKER TILLY INTERNATIONAL 888-587-1719 WWW.MCMCPA.COM

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Smyre, Elizabeth A

From: Jer Mehta <jmehta@speechsoft.com>
Sent: Wednesday, January 11, 2012 5:09 PM
To: Smyre, Elizabeth A
Subject: RE: Bonner Bridge Replacement Project Phase II - Public Workshop Comments

Hi Beth,

Now that beach nourishment has been dismissed as an option for the Rodanthe S-curve project, I want to go on record as favoring the option to elevate NC 12. I am still very opposed to building a new bridge in the Pamlico Sound as it would have a very negative impact to my sound front home in Rodanthe.

As stated in my email below, a bridge in the Pamlico sound will destroy the charm and character of this unique natural resource and diminish the beauty of the entire area. It will ruin the property values of all the homes in Rodanthe, specifically the sound front homes. Our sound front home on Pappy Lane is right next to the planned termination point of the Pamlico bridge. The chaos, noise and disruption caused during construction will virtually put our rental home out of business. Additionally, this bridge will destroy the areas sport of kite boarding, windsurfing, and sailing, and would ruin the vacation rental business, a source of county revenue. We currently get a lot of rentals in the April, May, June, September and October months from kite boarders, wind surfers. This revenue will be lost for all homes north of the bridges termination point. Furthermore it will ruin the natural beauty of the wildlife refuge as well as the natural environment of the Pamlico sound waters.

Overall the option to build a bridge in the Pamlico Sounds would have a tremendous negative impact on the area that so many people are trying to preserve in its natural state and ruin the businesses and home values in Rodanthe.

Please take this into consideration as you assess the 2 remaining options for Rodanthe. Is there a target date when a decision will be made public?

Regards,
Jer Mehta

From: Smyre, Elizabeth A [mailto:bsmyre@ncdot.gov]
Sent: Monday, December 12, 2011 1:42 PM
To: Jer Mehta
Subject: RE: Bonner Bridge Replacement Project Phase II - Public Workshop Comments

Jer-
Thank you for your comments! Please let me know if you have any further comments or questions.
Thanks,
Beth

Please note my phone number has changed, effective March 30, 2011- see below.

Beth Smyre, P.E.
Project Planning Engineer
NC Department of Transportation
Project Development & Environmental Analysis Branch
1548 Mail Service Center

Raleigh, NC 27699-1548
(919) 707-6043

From: Jer Mehta [<mailto:jmehta@spechtisoft.com>]

Sent: Sunday, December 11, 2011 9:57 AM

To: Smyre, Elizabeth A

Subject: Bonner Bridge Replacement Project Phase II - Public Workshop Comments

Hi Ms. Smyre,

Thank you for taking the time to discuss the Bonner Bridge Replacement Project Phase II at the public workshop held 12/5 in Manteo.

My name is Jer Mehta. My husband Morris Neuman and I own a sound front home at 23177 Pappy Lane, Rodanthe and another home at 22197 Green Lantern Court, Mirlo Beach, Rodanthe. Both houses are used as a rental business and the option of a new bridge in Pamlico Sound would destroy our business and investments.

For the Rodanthe beach area, I strongly favor the Beach Nourishment Option and am very opposed to the option of building a new bridge in the Pamlico Sound connecting Pea Island to Rodanthe.

The alternative for a new bridge in the Pamlico Sounds will be abandoning Rodanthe, our beach and destroying our sound. This alternative will have a huge negative impact to our homes, investments and businesses.

The beach is a national resource, unrecoverable once lost. Millions of people come to the beaches to vacation, enjoy fishing and for water sports, providing tourist dollars to the county and the state. All thru the eastern coast, county/state governments help local towns preserve the tourist business e.g. Ocean City MD, Bethany Beach MD. In NY, the beach shoreline is protected via jetties. The beach nourishment effort in Nags Head preserved a lot of investments during this past storm and has helped rejuvenate the image of Nags Head as a tourist destination. Places like Aspen CO spend millions of dollars each year grooming their ski slopes to preserve the tourist business, even though each year the snow melts and has to be replenished. Once the bridge is built, the existing NC 12 will be abandoned and the shoreline erosion will destroy not only the ocean front homes but the homes west of NC 12 (like our home) will be unmaintainable by the owners. The roadway and beach front as you enter Hatteras must not be abandoned. It should be nourished and preserved to showcase the natural beauty of this island and as the gateway to Hatteras.

The Pamlico Sounds is the largest body of water in the US with clear waters and unobstructed views. This bridge in Pamlico sound will destroy the charm and character of this unique natural resource and diminish the beauty of the entire area. It will ruin the property values of all the homes in Rodanthe, specifically the sound front homes. Our sound front home on Pappy Lane is right next to the planned termination point of the Pamlico bridge. The chaos, noise and disruption caused during construction will virtually put our rental home out of business. Additionally, this bridge will destroy the areas sport of kite boarding, windsurfing, and sailing, and would ruin the vacation rental business, a source of county revenue. We currently get a lot of rentals in the April, May, June, September and October months from kite boarders, wind surfers. This revenue will be lost for all homes north of the bridges termination point. Furthermore it will ruin the natural beauty of the wildlife refuge as well as the natural environment of the Pamlico sound waters.

Overall the option to build a bridge in the Pamlico Sounds would have a tremendous negative impact on the area that so many people are trying to preserve in its natural state and ruin the businesses and home values in Rodanthe.

There is continuous dredging to keep the Oregon Inlet open to fishing boats. The Sound is also quite shallow and requires dredging to keep the channel open. This sand should be made available and used to nourish/maintain our shoreline. Jetties should also be considered to preserve our beach.

Beach nourishment will preserve our national treasures - our beaches and a natural Pamlico Sound for thriving vacation business and enjoyment for millions.

15

After Hurricane Irene, any option but beach nourishment will be akin to abandoning Rodanthe.

Elevating Hwy 12 with beach nourishment seems like the least invasive option after beach replenishment.

Thank you for your consideration.

Regards,

Jer Mehta
914-384-3047 (cell)

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Smyre, Elizabeth A

From: Miale, Rick
Sent: Friday, January 06, 2012 6:10 PM
To: Smyre, Elizabeth A
Subject: S-Turns and parking

I saw the article in ESPN about parking at S-Turns. Since you've asked for comments I'd like to share.

I've surfed since the early 80s. I spent a lot of time on the Outer Banks, usually between Rodanthe and Frisco. Some visits were to go surf, some visits were to go fish. Hatteras is a very important place for me. Anyway, I'd love to see a parking lot at S-Turns. Even if it was inland a bit and required a walk it would beat having parking eliminated. I've always feared parking on 12 as it's dangerous and there are very few parking places in Rodanthe. Most of the streets are private or are too narrow to offer parking. I can understand why people wouldn't want their streets clogged with vehicles - when I lived in Virginia Beach (home) we lived a few blocks away from the water and it was always a zoo. Both sides of the street would be full and at times it was hard for us to pull into our driveway. When the city added some additional parking lots that really helped. The traffic went from the streets into the lots. It was then safe to walk on the streets again. One idea that I'm ok with is paid parking. A few bucks to park all day is a bargain and would help to offset the price of the lot, maybe even making the town of Rodanthe some extra money in the process.

Thanks for reading this!

Rick Miale
NC Division of Public Health/Early Intervention
www.ncei.org

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Smyre, Elizabeth A

From: bsmyre@ncdot.gov
Sent: Monday, November 28, 2011 5:06 PM
To: Smyre, Elizabeth A
Subject: I have Carbon Copied you on this ContactUs message

Comment History

Tracking Number: WEV01Y5RTT

Unit Name: Bonner

Sent By: Contact Us Administrator

Date/Time: 11/27/2011 5:56:52 PM

Comment:

Ronald- Thank you for your comment on the Bonner Bridge project; all comments are important and will be fully considered as we move forward with the next phase of the project. Please let us know if you have any further comments or questions! Thanks, Beth Smyre

Sent By: Ronald Moorse

Date/Time: 11/27/2011 5:56:52 PM

Comment:

In light of the Hurricane Irene effects, it is my considered opinion that building a new bridge is unwise. Spending \$215 million on the bridge will give the people of North Carolina a connector between nowhere and nowhere when the next hurricane hits. It would be better to build ferry terminals; quick and easy to repair at much lower cost.

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Norburn, Robert E.

From: Smyre, Elizabeth A [bsmyre@ncdot.gov]
Sent: Friday, January 20, 2012 4:46 PM
To: Brenda J Morris; Norburn, Robert E.
Office of the Governor
Cc:
Subject: RE: DOT options for fix for NC 12, Rodanthe

Brenda, Robert-

Thank you for your comments on the NC 12 projects. Every comment that NCDOT receives will be carefully considered as the planning process for the projects moves forward. If you have any further comments or questions, please feel free to contact me.

Thanks,
Beth Smyre

From: Brenda J Morris [brexmor@optonline.net]
Sent: Friday, January 20, 2012 2:07 PM
To: Smyre, Elizabeth A; norburn@pbworld.com
Cc: Office of the Governor
Subject: DOT options for fix for NC 12, Rodanthe

To: Beth Smyre and Bobby Norburn,

Re: NC 12 fixes

My husband and I own an oceanfront house in Rodanthe, on Seagull Street, in the Mirlo Beach Development. It was built in 1990. We also own a lot across the street on Cross Of Honor Way in the Mirlo Beach development.

My husband, Robert, and I purchased the lot, on Seagull Street, in 1989 and built the house months later in 1990. We intended to rent the house to pay the mortgage and then retire to this area later on. After we built the house, we noticed the beginning of the groin project at the Bonner Bridge area. I remember the project was to build the groin on each side of the inlet, east of Bonner Bridge and put into place a pumping system on each side so as to direct the sand, that was dredged, southward or northward so that the beaches, south and north, do not lose sand from this project. The beaches were not to be starved of sand as a result of this groin and dredging activity. The project was never finished, with only one groin in place and no pumping systems to direct the dredged sand to the ocean. Instead, there are new islands being created every year in the sound, with the sand that is supposed to travel up and down the coastline. NC prohibits "permanent structures" on the beaches, however, this "permanent structure" was allowed to save a broken down building, which does not generate revenue, and to make a convenient route for fishing boats, which caused properties south and north of it to lose their beach sand, as well as property owners to lose their homes on the ocean. This project was only a band-aid for the Bonner Bridge, as it should have been replaced years ago, while the "always delayed" process took place for bridge replacement.

My husband and I have witnessed, since this groin was put in, the deterioration of the beaches in our area as well as the beaches north of us in Nags Head, Kill Devil Hills and Kitty Hawk. We strongly believe that the problems from Hurricane Irene, the inlets that were cut at Pea Island and Mirlo, were largely a result of the stripping of our sand, over the years, caused by the dredging at the Bonner Bridge area which still takes place. We loved the beaches in our area in 1989. We purchased the ocean lot because of this. We know that sand comes and goes every year, however, the escalation has

been speeded up at a ridiculous pace due to the dredging. If you notice, the lifesaving station, that was ready to fall in the water, has a huge island around it now. This is, basically, our lost beach!

Beach nourishment is used all over the US coastline and it works! Look at Atlantic City, NJ and Ocean City, MD. Robert and I believe that replacing the sand on our beaches would not only save NC 12 in this area, but the Mirlo Beach oceanfront homes as well. It took years for us to lose this sand and our beaches are almost non-existent now. The bridge option in the sound, which comes in on Sixteenth of August Street in Mirlo, will definitely destroy all of our properties, as well as the bridge option coming in at the Island Convenience campground. All the properties north of the campground will be left and forgotten. This revenue for the state will be gone, as the roads will be slowly abandoned by the NCDOT! A very large piece of Rodanthe will disappear, from ocean to sound! Both bridge options will affect all properties north of Island Convenience and will also need to be maintained with possible sand replenishment in the future so as to protect NC 12 and the rest of Rodanthe and Waves from disappearing.

Property and sales taxes could be raised to generate the money needed for sand replenishment for the beaches. Since Hatteras Island gives much more to the state, in taxes, than it has ever received, we think it's time to help this island because its beaches are disappearing at an alarming rate. Hatteras Island was once a beautiful island with beautiful beaches and now it looks like a disaster zone after every hurricane or nor'easter that passes by. Hatteras Island has long been neglected by NC state and the Federal Government, that took it over years ago, then promising to maintain it but instead, having FEMA haul away our sand after every disaster instead of putting it back on our beaches.

Robert and I believe that the small bridge at Pea Island, where the ocean cut through north of Mirlo, along with beach nourishment in that area and extending into or thru Mirlo would solve the problem and help the beaches to rebuild themselves from what was stolen from them years ago and continues to be stolen now, the sand!

Respectfully,

Brenda and Robert Morris
29 White Birch Rd.S.
Pound Ridge, NY 10576
914 764-4056

Cc: Governor Beverly Perdue

Email correspondence to and from this sender is subject to the N.C. Public Records Law and may be disclosed to third parties.

Smyre, Elizabeth A

From: Angela Nagele <anagele@gmail.com>
Sent: Wednesday, December 14, 2011 3:45 PM
To: Smyre, Elizabeth A
Subject: Beach Nourishment

Please support Beach Nourishment. It is vital to our community.

Angela Nagele
North Carolina

Smyre, Elizabeth A

From: Abbott, Steve
Sent: Tuesday, January 03, 2012 4:58 PM
To: Smyre, Elizabeth A
Subject: from Contact Us on NC 12

From: Evan Nesch **Phone:** (252)202-1963 **Email:** enetsch@gmail.com

Comment History

Tracking Number: OPHXVIO9SY
Sent By: Evan Nesch **Date/Time:** 12/29/2011 3:32 PM
Comment:
Hi NCDOT Staff,

My concerns and suggestions are relative to the HWY 12 recovery plan, on Hatteras Island, NC.

I have lived in Kitty Hawk, NC for the majority of my life, worked in Rodanthe for the past 6 years in the summers and am now a senior at University of North Carolina at Wilmington, studying environmental science and economics. I have a particular interest in management of coastal areas.

I found out about the workshop on Ocracoke, but unfortunately will be out of the country on Jan. 5th and will not be able to attend. However I would still like to voice my opinion and recommendations if possible. Living on the OBX for the majority of my life and spending a lot of time back and forth between Kitty Hawk and Rodanthe, I have become very familiar with the issues associated with HWY 12. Just a month ago I finished writing a major research paper on management and recovery options for HWY 12, in particular the section for the Oregon Inlet to Mirlo Beach in Rodanthe.

In short, after much research and personal experience over the years, I concluded that small land bridges over problematic areas would be the best solution. I considered the ideas of moving the road west and extending the Bonner Bridge 17 miles in the Pamlico Sound to Rodanthe. Each solution has pros and cons, but by far a series of small land bridges is the best economical and environmentally practical solution. These land bridges would be about 10-12ft above the ground, and allow for general over wash during hurricanes and Nor Easters to wash under the road. The sections of elevated highway would not only be build over areas such as the newly formed inlet at the Ranger Station but also areas that require constant maintenance and are possible was out spots. For example the 2 miles immediately south of Oregon Inlet, where sand is being constantly cleared from the road, and the S-turns area just north of town. Footings for the elevated highway would be deep enough if the area for a small inlet during a storm and a lot of sand was lost from beneath the bridge the bridge would still stand. It would also eliminate annual maintenance and repair costs to these sections of unstable roads.

I would like to share my findings with NCDOT in hopes to help find the best fix for HWY 12 in respect to the economy and doing the best to preserve the Pea Island National Wildlife Refuge. Some areas of HWY 12 are more protected than others, and not every mile of the road needs to be moved. Obviously like any east coast barrier island, Pea Island is moving westward. And eventually after decades the road will be in the ocean. But with the average life span of a bridge being between 50 and 100 years, the phrase "permanent fix" is relative to this time period.

Access to Pea Island would still be available for bird watching, beachgoers, surfing etc. with the

sections of elevated highway, opposed to the long bridge option. Marsh, ponds and migratory bird areas would not be destroyed by moving the road west either, which protection the valuable marsh and estuarine habitat is a major part of the National Wildlife Refuge's mission. Nor would the upfront cost associated with this option be as high as construction an entirely new bridge, as building small bridges over land is much cheaper than building a long one over water. Reasons for this solution are extensive, and range from safety, to short and long term economic benefits, user convenience, and reasons regarding environmental integrity.

I look forward to hearing back as soon as possible, and would like to help in any way that is needed in this project, and share a more in detailed description of my solution to HWY 12. Environmental Studies is my major, and issues such as coastal development and management is what my degree is intended for, and being a proud resident of the Outer Banks, I hope to see the best solution for HWY 12.

Please email me at enetsch@gmail.com

Or feel free to call me at 252-202-1963. I will not have phone access until January 15th, but will frequently be checking my email.

Thank You,
Evan Netsch

Email correspondence to and from this sender is subject to the N.C. Public Records Law and may be disclosed to third parties.

Smyre, Elizabeth A

From: Morris Neuman <neuman@speechsoft.com>
Sent: Wednesday, December 14, 2011 11:09 AM
To: Office of the Governor, Joshua.bowlen@mail.house.gov;
aaron_suntag@hagan.senate.gov; kara_weishaar@burr.senate.gov; Smyre, Elizabeth A;
Tim.Spear@ndleg.net; warrrenj@datenc.com; allenb@datenc.com
jmehra@speechsoft.com
Cc: Save our National Treasure and Valuable Resources - Hatteras Island, Rodanthe
Subject:

Dear Elected Representative

I am writing to all who have been elected by the people of North Carolina to serve the people's interest about a matter that is of immediate importance to the people of North Carolina and all the people of the United States, the conservation of Hatteras Island. The Governor and almost all of you have personally witnessed the devastation of hurricane Irene unleashed on Hatteras Island this past August. Now a decision will be made shortly by anonymous parties as to the future of Rodanthe - the Gateway town of Hatteras Island. I implore you all to proactively direct that decision to be in favor of beach nourishment.

If beach nourishment is abandoned as a viable option to consider at this next decision point it effectively abandons the people and businesses of Rodanthe to a future of ongoing erosion of the shoreline and all the tax generating property in that town that we have worked hard and spent millions to develop into one of the unique vacation destination for millions of Americans from all 50 states. It will be a squandering of our nations truly unique natural resources on the scale and level of the Grand Canyon or Yellowstone National Park.

My name is Morris Neuman and I am a home owner in Rodanthe. I came here in 2005 seeking an escape from the urban life of the big city New York. Although discouraged by locals from purchasing in Rodanthe due to erosion issues back then I was taken with the stark beauty and serenity of the area. I can now say that after traveling the whole east coast from Maine to the Florida Keys this slice of nature is truly unique in every way and once lost can never be recreated. Once Rodanthe is allowed to fall to the oceans relentless erosion in due time the neighboring Hatteras Island towns of Waves and Salvo will surely follow. No one can afford to lose such precious real estate.

I will never forget the first time I drove down highway 12 towards Rodanthe. After passing magnificent dunes and undisturbed landscapes of Pea Island I saw the town of Rodanthe on the horizon and it immediately brought to mind the vision Dorothy had when she first saw the Land of Oz on her quest to find the Wizard to get her home. I knew I was home. It is unimaginable that anyone could just make a decision on preserving this magical place based on strict cost analysis ignoring all other considerations that motivate millions of people to vacation here.

In support of our effort to make everyone aware of what Hatteris Island is all about we have created a website "Top 10 Reasons to Support Beach Nourishment", please visit our website <http://tinyurl.com/miriobeach> created by the Mirlo Beach Home Owners Association outlining

Do not abandon our beach or our community of Rodanthe and do not destroy the natural beauty of the Pamlico Sound.

Morris Neuman
Speechsoft, Inc.
www.speechsoft.com
914-273-5560 x170
mali.neuman@speechsoft.com

COMMENT SHEET

Bonner Bridge Replacement Project
Public Workshops – Phase II

TIP No. B-2500
Dare County

NAME: JOSEPH F. NOCE

ADDRESS: 714 HARDING HWY, CARNEYS POINT NJ 08069

E-MAIL: joenocce@hotmail.com

COMMENTS AND/OR QUESTIONS:

After viewing the presentations, maps & materials, it seems as though all of the options have positive and negative aspects. After weighing all of the information, I find that the Nourishment alternative makes the most sense, but needs to be more extensive. Without beach nourishment, the village of Rodanthe would eventually die. Nourishment to the beach down to the Rodanthe Pier from the S-Corries area would invigorate the community, provide more beach habitat for wildlife at a fraction of the cost of other alternatives. Rodanthe is the Gateway village to Hatteras Island – it would be tragic to kill it with massive concrete bridges that effectively bypass this scenic village.

Comments may be mailed by January 20, 2012 to:

Ms. Beth Smyre, PE
NCDOT – Project Development and Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548
Email: bsmyre@ncdot.gov

Smyre, Elizabeth A

From: Abbott, Steve
Sent: Wednesday, January 04, 2012 9:40 AM
To: Smyre, Elizabeth A
Subject: Contact Us comment on NC 12

Peter O'Donnell Phone: (772)801-5084 Email: surfset@att.net

[Print](#)

Comment History
Tracking Number: MTJ9TG8CUU

Sent By: Peter O'Donnell Date/Time: 12/27/2011 6:27 AM

Comment:

Please consider a park and walk option for the area around Rodanthe due to the numerous good surf spots that access will be lost if bridge option is chosen. This will negatively impact tourism if consideration is not given to access to these beaches. We visit once or twice a year and would consider not coming if you cut off public access to these beaches. We would start a campaign here in Florida to "boycott Hatteras" if a reasonable solution is not found to keep public access to these beaches.

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Smyre, Elizabeth A

From: Obermeyer Ed <edobermeyer@cox.net>
Sent: Friday, January 06, 2012 2:52 PM
To: Smyre, Elizabeth A
Roanthe Access
Subject:
Attachments: BPwave copy 2.jpeg

I have been surfing since 1964 and totally support full access to EVERYONE on this area of the outer banks. After surfer's surf and even before, they usually go to the local store and spend money on food and other essentials. If the wife is in tow, you can bet she will want more than food from the local economy and will spend serious dollars on clothing's and collectables. Let me know what I can do to help.

Ed Obermeyer
<http://www.edobermeyer@cox.net>

COMMENT SHEET

**Bonner Bridge Replacement Project
Public Workshops – Phase II
TIP No. B-2500
Hyde County**

NAME: BETTY JANE OELSCHLEGEL
ADDRESS: P.O. BOX 366 398 JACKSON CIRCLE OCEAROCKE, NC 27960
E-MAIL: bjocroake@embarqmail.com

COMMENTS AND/OR QUESTIONS:

My first visit to Ocracoke was in 1974. I moved to the island in 1977, when I was 25. I have worked for 35 years to build a life on Ocracoke. I have managed, trimmed, employed, children and become all dependent on a steady stream of guests to our island. I own life line called Route 12 tentative or overnight, interrupted, the food consists of frozen and the whole system falls apart. I don't expect this life line to be maintained on the backs of the environment or wildlife. I do expect "the powers that be" to find a middle ground solution. No one had any trouble taking my tax payments, meeting payments or sales + use responsibilities. It would be unfair and immoral for you to let us damage in the wind

Comments may be mailed by January 20, 2012 to:

Ms. Beth Smyre, PE
NCDOT – Project Development and Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548
Email: bsmyme@ncdot.gov

Smyre, Elizabeth A

From: KEROR@aol.com
Sent: Friday, December 09, 2011 11:13 AM
To: Smyre, Elizabeth A
Subject: Bonner Bridge Replacement Bridge Phase 2

Dear Ms. Smyre:

I am a sound front property owner in the Mirlo Beach area of Rodanthe, NC. I am writing to express my strong support for the Beach Nourishment option. The bridge options, particularly the bridge on the new location in the sound would have a devastating impact on the life in Rodanthe.

This sound front area of Mirlo offers a unique waterfront experience that would be ruined by a bridge in the sound. Kiteboarding and windsurfing are very popular in Mirlo Beach. Even by Hatteras Island standards, Mirlo offers unusually good sailing conditions. In the summer, it gets strong thermal winds and it is also very good for the fall and winter northeast wind directions. This sailing nirvana would be lost if a bridge is put in the sound.

Outside of sailing, the sound bridge would still have a strong detrimental effect on Mirlo Beach. It would ruin the sound side views that attract vacationers and severely harm the property values of all the homes on the sound side of Rt 12.

I strongly disagree with Table 2 of the Phase 2 impacts on the Rodanthe Area. It says the bridge on new location would have no impact on the Rodanthe Cohesion and Accessibility. It will ruin Mirlo Beach and without beach nourishment, it would leave the north end of Rodanthe susceptible to further erosion and loss of property value.

Considering the negative effect on the quality of life in northern Rodanthe and the higher costs of the bridge in the sound, I think the logical choice is to institute the beach nourishment option.

Thank you.

Keith Orr
393 Hannastown Road
Greensburg, PA 15601
724-689-9062



Ms. Beth Smyre, PE
NCDOT - PDEA
1548 Mail Service Center
Raleigh, NC 27699-1548

*I'm begging you to do everything possible to make sure our
life line is viable now and in the future.*

Thank you,

Elizabeth Smyre

Smyre, Elizabeth A

From: Nelson Paul <nelson@nelsonpaul.com>
Sent: Thursday, November 17, 2011 9:38 AM
To: Smyre, Elizabeth A
Subject: Re: Highway 12 Options Meetings

Dear Ms. Smyre,

My name is Nelson Paul. I am commenting as someone who is knowledgeable of the situation on the Outer Banks having worked with the NC Division of Coastal Management as a Field Representative for their coastal permitting program on the Outer Banks in the 1980's.

Hurricane Irene severely impacted the Outer Banks and severed Highway 12 with a new inlet that NCDOT has chosen to bridge, rather than fill.

Because inlets move, the decision to bridge this inlet, rather than fill the inlet, has created a scenario that will most likely doom the economies of these Outer Banks communities over the next decade. Without an enormous commitment of scarce revenues, the shifting sands of this new inlet will likely make travel on Highway 12 intermittent and undependable.

However, worse than that, the decision to bridge the inlet has created a potential trap for residents and visitors that could likely result in the loss of life.

Imagine a scenario where a Cat 1 storm approaches the Outer Banks in mid-July. While evacuating the island, a vehicle strikes a structural member of the existing temporary bridge, making traversing the inlet by vehicle impossible. The bridge is closed. The NCDOT Ferry Service springs into action, but it is too many people and too little time. The storm increases to a Cat 3 and bears down on the island, roughly following the path of Hurricane Irene.

This is a reasonable scenario that we would have considered when I worked for the NC Division of Coastal Management. In this scenario there could be more than 10,000 people trapped in a life-threatening situation. And from our recent experience with Irene, we can easily see that people could die if it had been a stronger storm. You may want to review what happened on Ocracoke Island with Hurricane Alex in 2004.

Highway 12 being designated as the "Outer Banks National Scenic Byway" exacerbates this life and death situation. The Scenic Byway designation is intended to lure MORE tourists to the area in order to improve the local economy. Through this designation NCDOT is making substantial investments in promoting the Outer Banks as a tourist destination.

If the intent is to lure more people to the Outer Banks through the Outer Banks National Scenic Byway designation, then the responsibility for the safety of these people (as it pertains to the availability of highway transportation) rests squarely on NCDOT. The combination of an NCDOT policy that allows this inlet to remain while simultaneously implementing a NCDOT policy that promotes and encourages tourism on the Outer Banks is very dangerous. This is irresponsible and is unnecessarily endangering the public.

So, in conclusion, the NCDOT designation of the Scenic Byway is at cross purposes with the decision to allow the inlet to remain. If the inlet is allowed to remain, then the Outer Banks National Scenic Byway designation

needs to be suspended until a long-term, permanent solution is established and IMPLEMENTED regarding the inlet.

It is my opinion that this inlet should be filled as soon as possible. And future inlets, should they occur, should be filled also. This is the only long-term, cost-effective solution that MUST be established as official NCDOT policy.

Thank you,
Nelson Paul
(919) 231-4409

----- Original Message -----

From: [Smyre, Elizabeth A](mailto:Smyre,Elizabeth.A)
To: Nelson Paul
Sent: Wednesday, November 16, 2011 5:22 PM
Subject: RE: Highway 12 Options Meetings

Nelson-
Absolutely! You are welcome to send me any comments you might have.
Thanks,
Beth

****Please note my phone number has changed, effective March 30, 2011- see below.****

Beth Smyre, P.E.
Project Planning Engineer
NC Department of Transportation
Project Development & Environmental Analysis Branch
1548 Mail Service Center
Raleigh, NC 27699-1548
(919) 707-6043

From: Nelson Paul [mailto:nelson@nelsonpaul.com]
Sent: Wednesday, November 16, 2011 5:11 PM
To: Smyre, Elizabeth A
Subject: Highway 12 Options Meetings

Hi Beth, hope you are doing well today.

Can we submit comments regarding the breaches in Highway 12 through you?

Thank you,
Nelson Paul
(919) 231-4409

Email correspondence to and from this sender is subject to the N.C. Public Records Law and may be disclosed to third parties.

Smyre, Elizabeth A

From: Dale Petty <dale@surfsound.com>
Sent: Monday, December 12, 2011 3:23 PM
To: Smyre, Elizabeth A
Cc: warrenj@darenc.com; Office of the Governor
Subject: Hatteras Island Hwy. 12 Beach Nourishment

<https://sites.google.com/site/mirlobeachnc/>

Ms. Smyre,

It is my understanding that the Merger Team will meet this Thursday to decide which Pea Island Hwy. 12 alternative(s) to advance for further study. I own Surf or Sound Realty on Hatteras Island. We manage approximately 450 single family vacation homes on Hatteras Island and accommodate approximately 100,000 visitors to CHNS each year. I am writing to request that beach nourishment be included as one of the alternatives for further study. A safe and reliable corridor is essential for visitor access to Cape Hatteras National Seashore and for Hatteras and Ocracoke Island residents and property owners. Beach nourishment is an appealing option to protect the Hwy. 12 corridor through Pea Island for several reasons. I have attached the link to a web site that highlights the many positive benefits of beach nourishment.

Thank you,

Dale Petty
CEO, Surf or Sound Realty

B-69

Smyre, Elizabeth A

From: Lou Ann Phelps <laphelps@selcnc.org>
Sent: Friday, January 20, 2012 5:00 PM
To: Smyre, Elizabeth A
Subject: Bonner Bridge Replacement Project (TIP No. B-2500)
Attachments: 01-20-12 Comments to NCDOT re Phase II Options.pdf

Please see the attached comments submitted on behalf of Defenders of Wildlife, National Wildlife Refuge Association, and the Southern Environmental Law Center, regarding the above-referenced project.

Thank you for your consideration.

Lou Ann Phelps
Administrative Legal Assistant
North Carolina State Bar Certified Paralegal
SOUTHERN ENVIRONMENTAL LAW CENTER
Tel.: (919) 967-1450
Fax: (919) 929-9421
laphelps@selcnc.org

PLEASE NOTE OUR NEW ADDRESS:

601 West Rosemary Street, Suite 220
Chapel Hill, North Carolina 27516-2356

Our telephone, fax, and e-mail addresses have not changed.

COMMENT SHEET

Bonner Bridge Replacement Project
Public Workshops – Phase II
TIP No. B-2500
Dare County

NAME: JAMES F. + VICKI W. PIERSON

ADDRESS: P.O. BOX 195 OARACORE N.C. 27960

E-MAIL:

COMMENTS AND/OR QUESTIONS:

Nice presentation, especially visuals, charts/photos.
Looks like a good plan finally.
This must happen - the Outer Banks would be
devasted without the new bridge. Concern is our
Hobie we have alot of issues, but this
definitely would be an asset.
Hope the completion date of 2015 can be
achieved.

Comments may be mailed by January 20, 2012 to:

Ms. Beth Smyre, PE
NCDOT – Project Development and Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548
Email: bsmyre@ncdot.gov

Smyre, Elizabeth A

From: hpisek@aol.com
Sent: Friday, December 02, 2011 4:54 PM
To: Smyre, Elizabeth A; norburn@pbworld.com
Subject: Fwd: Dare County Bonner Bridge replacement

I meant to say: "Boys and their TOYS scenario."

-----Original Message-----
From: hpisek <hpisek@aol.com>
To: bsmyre <bsmyre@ncdot.gov>; norburn <norburn@pbworld.com>
Sent: Fri, Dec 2, 2011 12:00 pm
Subject: Dare County Bonner Bridge replacement

P-L-E-A-S-E consider the 17-mile-long bridge. In the long run, it will save the state millions of dollars trying to keep Highway 12 passable on Hatteras Island. It's almost a "boys and their boys' scenario. They have waaay tooo much fun playing with all that construction equipment.

Thank you.

Helen and Irv Pisek
5208 Birch Lane
Kitty Hawk, NC 27949

Smyre, Elizabeth A

From: Warren Powell <wpowell@prestigeccapital.com>
Sent: Monday, January 09, 2012 8:15 AM
To: Smyre, Elizabeth A
Subject: Outer Banks

Dear Beth,

I have been traveling to the Outer Banks for the past 30 years primarily to surf and fish. It would be a travesty, if the new road/bridge options did not include some way for people to reach some of the best areas for surfing on the entire East Coast. Some of my greatest memories are crossing the Bonner Bridge and running across the dunes to see amazing surf, and I hope to be able to share these experiences with my 2 sons.

Please consider all access options and understand we spend a good bit of money when traveling to and surfing on the OBX.

Cordially,

Warren Powell

Warren Powell
Sales Director Southeast Region
Prestige Capital Corporation
919-349-2866
201-944-9477 fax
wpowell@prestigeccapital.com

B-71

Flexible Accounts Receivable Funding Solutions

Smyre, Elizabeth A

From: jqquinn739@comcast.net
Sent: Wednesday, December 14, 2011 5:35 PM
To: Smyre, Elizabeth A
Subject: Rodanthe

Dear Ms. Smyre,
Please take into consideration beach nourishment as opposed to the bridge alternative which will devastate Rodanthe.
Sincerely John Quinn owner of 23176 Pappys Lane Rodanthe.

COMMENT SHEET

Bonner Bridge Replacement Project
Public Workshops - Phase II

TIP No. B-2500
Dare County

NAME: Keslie J Robusa
ADDRESS: PO Box 62 Rodanthe NC 27968
E-MAIL: lesliejoanrobusa@hotmail.com

COMMENTS AND/OR QUESTIONS:

I am fir using a smaller bridge at "Stuns"
plus beach renourishment. It is
hard enough to live on this island -
please disturb our villages as little
as possible - Everything is disappearing
as it is - we dont need one
fewer convenience store/gas station

Comments may be mailed by January 20, 2012 to:

Ms. Beth Smyre, PE
NCDOT - Project Development and Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548
Email: bsmyre@ncdot.gov

COMMENT SHEET

Bonner Bridge Replacement Project
Public Workshops - Phase II

TIP No. B-2500
Dare County

NAME: Harry Schiffman
ADDRESS: P.O. Box 489, Manteo, NC 27954
E-MAIL: schiffman@earthlink.net

COMMENTS AND/OR QUESTIONS:

Suggest a trial project on
Hatteras Island with the use of
a Floating Wave Attenuator such as
one developed by Elemental Innovations
out of N.J. in area of high
impact erosion - If successful,
it would greatly enhance the longevity
of beach nourishment.

Comments may be mailed by January 20, 2012 to:

Ms. Beth Smyre, PE
NCDOT - Project Development and Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548
Email: bsmyre@ncdot.gov

COMMENT SHEET

**Bonner Bridge Replacement Project
Public Workshops – Phase II
TIP No. B-2500
Dare County**

NAME: R. V. STEINBERG

ADDRESS: 1107 S. W. 10th St. P. O. Box 1112

E-MAIL: steinbergs@carolina.com

COMMENTS AND/OR QUESTIONS:
Please consider the needs of the residents of the islands.
we're the only one

Comments may be mailed by January 20, 2012 to:
Ms. Beth Smyre, PE
NCDOT – Project Development and Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548
Email: bsmyre@ncdot.gov

Resolution for Immediate and Permanent Repair of Highway 12 on Hatteras Island
Whereas, Commerce on Hatteras and Ocracoke Islands is deemed vital to the economies of Dare, Hyde and surrounding counties; and
Whereas, Highway 12 is essential to the residents, visitors and commerce of Hatteras and Ocracoke Islands; and
Whereas, the bridge being constructed on Highway 12 between Oregon Inlet and Rodanthe is temporary and inadequate to sustain the needs of the residents, visitors, and economies of Hatteras and Ocracoke Islands
BE IT RESOLVED, by the membership of the Albemarle-Pamlico Republican Club representing 14 Northeastern North Carolina counties:
The need exists and it is requested that Highway 12 be immediately and permanently repaired.
ADOPTED unanimously this 6th day of October, 2011.


Bob Steinberg, President
103 South Granville Street
Edenton, N. C. 27932-1831
252-482-2404
RSteinburg@aol.com
www.al-pam.com

Smyre, Elizabeth A

From: CINDY THORNE <cindy.thorne2000@yahoo.com>
Sent: Tuesday, January 17, 2012 9:18 AM
To: Smyre, Elizabeth A
Subject: NC 12

Please keep NC 12 through Pea Island open as close as possible to what is there now. Do not put the 7 mile bridge out in the sound. We are losing enough beach on the National Seashore we can not afford to lose more. I own a house in Salvo and in a few years will be retiring. Pea Island is my favorite place for just walking and shelling. The way it is going now there won't be any place left to access the beach so I guess I wasted all my money on buying a house and who would want to buy it if there is no beach. Please don't give into the environmental people or the Fish and Wildlife people.

Thank you.

Cindy Thorne
161 Nemec Lane
West Newton, Pa. 15089
724-331-1581

Smyre, Elizabeth A

From: outerbanks@surfrider.org
Sent: Wednesday, December 14, 2011 6:00 PM
To: Smyre, Elizabeth A
Subject: NC 12 options

Dear, Ms. Smyre:

On behalf of the Outer Banks Chapter of the Surfrider Foundation, we would like to offer some comments regarding the breaches along NC 12. While we're currently gathering a more official statement to submit for the comment period that ends January 20, we also understand there is a meeting tomorrow, so we thought we should voice a broad sense of what our overall stance will be. That stance, simply put, is that the DOT work as much as possible toward preserving access to surf breaks surrounding both those breaches, no matter what plan perseveres.

You may not be aware, but those particular stretches of beach are prime surfing areas. Many Outer Banks locals move to the area just to surf the Pea Island coast. And of them all, the area just north of Mirlo -- commonly called S-Turns -- is among the most famous and respected on the entire Eastern Seaboard. (Surfer Magazine named it one of its top 100 surf spots this past year.) This means plenty of surf tourism dollars for the immediate area. Sometimes the only business in the winter months when frequent storms make it a valuable resource for surfers from surrounding states as well.

Most of the time, these surfers park on the side of NC 12, which -- although easy for the surfers -- we also understand can cause conflicts with normal traffic. Our concern is that one of the bridge options will win out without any consideration of the existing surfing population who use the resource. We're hoping NC 12 and Dare County can seize this opportunity to provide some parking and access to prevent future conflict. We're not sure what that solution looks like, but it seems reasonable there is some way to look at all the options and figure out parking and access solutions for each, so that no matter what plan comes to fruition, the existing surfing population --- both local and visitor --- can continue to enjoy the surfing resource and the residents of Rodanthe can benefit from the increased business traffic without any negative impacts.

On behalf of the Surfrider Foundation's 125+ local members -- and 50,000 nationwide members -- we request you consider these options as you move through the decision-making process.

Thank you for the time and consideration. And we will file a more official request before January 20.

Sincerely,

Matt Walker
Vice Chair
Surfrider Foundation, Outer Banks Chapter

Smyre, Elizabeth A

From: Heinz Scheidemandel <hynesssch@cox.net>
Sent: Monday, November 28, 2011 7:50 PM
To: Smyre, Elizabeth A

Dear Ms.Smyre:
I have been in Hatteras village for over 50 years and I can assure you the only sensible and financially feasible long term solution is to return to a Ferry System. This is flexible and relatively inexpensive. Everything else is a waste of tax payer's money!
H.Scheidemandel, Falls Church, Va.

Smyre, Elizabeth A

From: Fred Walters <fewalt@ntelos.net>
Sent: Thursday, December 08, 2011 12:19 PM
To: Smyre, Elizabeth A
Subject: Bridge to nowhere

If the NPS keeps closing beach access, or a total closure is eminent, NO bridge will be needed!!!!!!

Fred Walters
Troutville, Va

Smyre, Elizabeth A

From: John Wasniewski <John@shoshintech.com>
Sent: Friday, January 20, 2012 1:28 PM
To: Smyre, Elizabeth A
Cc: r.matt.walker@gmail.com; ivyray@earthlink.net
Subject: Rodanthe S-Turns Design Comments - Surfrider Foundation
Attachments: RodantheSTurnsAccesspdf; PreserveSTurnsAccess.xls

Dear Beth Smyre:

On behalf of the Surfrider Foundation (www.surfrider.org), I wish to submit the attached letter and petition listing to the N.C. D.O.T. for consideration of design impacts for the area known as S-Turns in Rodanthe, Dare County. The Excel document list all signers of the petition mentioned in the letter. Especially telling are the individual comments that users of the resource have made from all over the world regarding this site.

S-Turns is a valuable economic and natural resource for North Carolina. Please consider preserving access to this location in all D.O.T. planning.

Sincerely,

John Wasniewski
Chairman
Outer Banks Chapter of the Surfrider Foundation

B-76

Smyre, Elizabeth A

From: shelley <sweisberg@cox.net>
Sent: Tuesday, December 20, 2011 11:31 AM
To: Smyre, Elizabeth A
Subject: RE: Beach Nourishment Top Ten Reasons

Dear Beth,

The news from the Merger Team meeting in Raleigh is most disappointing.

As I understand, US Fish & Wildlife is adamantly opposed to Beach Nourishment and would not move forward til it was removed from consideration.

I believe, NCDOT is favoring keeping the bridge in the existing right of way on Pea Island and maintaining a strong position supporting Beach Nourishment to protect both the Bridge and the road.

Meanwhile Rodanthe being in National Park Jurisdiction must have a permit issued from NPS.

Perhaps consideration should be given to the source of the disappearing Pea Island - Rodanthe sand... Oregon Inlet's jetty?

Dixon and Pilkey's research (The Corps and the Shore, Island Press, 1996) speaks to the inevitable loss of sand from Rodanthe if only one jetty was constructed. Time has shown this prediction true. Let's stop dredging Pea Island - Rodanthe's sand out of Oregon Inlet. Let's abate the issue of disappearing sand by re-examining the jetty situation.

Please consider investigating the potential. We need your help.

Sincerely,

Shelley & Jeff Weisberg
22012 Sixteenth August St.
Rodanthe, NA 27968

From: Smyre, Elizabeth A [mailto:bsmyre@ncdot.gov]
Sent: Wednesday, December 14, 2011 4:07 PM
To: shelley
Subject: RE: Beach Nourishment Top Ten Reasons

Shelley-
Thank you for your comments! Please let me know if you have any further comments or questions.
Thanks,
Beth

Please note my phone number has changed, effective March 30, 2011- see below.

Beth Smyre, P.E.
Project Planning Engineer

NC Department of Transportation
Project Development & Environmental Analysis Branch
1548 Mail Service Center
Raleigh, NC 27699-1548
(919) 707-6043

From: shelley [mailto:shelley@cox.net]
Sent: Tuesday, December 13, 2011 7:54 PM
To: Smyre, Elizabeth A
Subject: Beach Nourishment Top Ten Reasons

Dear Beth,

I am a home owner in Mirllo Beach, a family-oriented community on the outer banks of North Carolina located at the north end of the village of Rodanthe -- the gateway to Hatteras Island. It is a beautiful place to live and vacation.

Right now, however, we are simply trying to survive! We were devastated by Hurricane Irene and are at the center of the debate on beach nourishment versus a bridge at the Rodanthe hot spot on Hatteras Island. Please give beach nourishment the consideration it deserves. Your actions affect our future.

The Top 10 Reasons to Support Beach Nourishment

1. Beauty. The ribbon of sand that is the Outer Banks of North Carolina provides some of the most beautiful beaches in the world, some of the most beautiful wildlife, some of the most beautiful sunrises and sunsets. Nourishment preserves this beauty. Let's be honest, bridges are ugly.

2. Working with nature. Nourishment maintains a beach with sand matched to that beach. Pumping sand back onto a beach is simply using a human force to repair damage done by a natural force -- erosion. No concrete, no steel, no permanent manmade changes to nature.

3. Permanence. It is sometimes said that beach nourishment is not a permanent solution, but that just means that the nourishment must be repeated. This is how New York, New Jersey, and Delaware maintain their beaches (along with many states and countries). The Final Environmental Impact Statement (FEIS) estimated that the nourishment cycle for Rodanthe would be once every 4 years. However, we will never know until we try it. It could be shorter; it could be longer. Thus, we should nourish as soon as possible to learn the facts.

4. Speed. Nourishment is the fastest way to protect NC 12. The main thing that delays nourishment, is getting the needed permits. In South Nags Head, that took several years, which is about how long it takes to design and build a bridge. We assume that a project this big and important will be fast-tracked by the appropriate government agencies. NC 12 needs protection ASAP!

5. Flexibility. Because nourishment is an ongoing solution, it can be repeated sooner or later depending on conditions. It leaves open the possibility of better solutions 20 years down the road based on new technologies. A bridge can always be built later if experience proves that nourishment is too costly or ineffective. A bridge cannot be "unbuilt" later; if nourishment is shown to be better or if better alternatives emerge. A bridge cannot even be stopped halfway if cost overruns show it to be much more expensive than expected.

6. Saves money. The cost of a bridge in Rodanthe is \$114 million to \$240 million (NCDOT estimate in 2006 dollars, \$128MM to \$270MM in 2011 dollars) and \$169 million to \$212 million (our estimate in 2011 dollars based on figures provided by Coastal Science and Engineering). However, build a bridge today, pay for it today. Begin beach nourishment and you pay only 1/12 of the total cost today, and the "present value" cost of nourishment is only \$106 million to \$133 million.

7. Due diligence. The BIG question with nourishment is whether or not sand can be found. This is why nourishment needs to be one of the alternatives selected by NCDOT and the Merger Team on December 15 for additional study. What the experts have said is that there is very little sand in Wimble Shoals (several miles from Rodanthe), but there is a lot of sand in Platt Shoals, which is 6--9 miles north and there may be sources of sand in between. Experts also say that even 10 - 20 miles can be economically feasible. We need to know where the sand is!

8. Preserves the Hatteras Island economy. All of the bridge alternatives will have a devastating effect on the cultural and economic life of north Rodanthe (not just Mirllo Beach). Popular uses such as fishing, birding, surfing, wind surfing, and kite boarding will all be negatively affected or eliminated. Vacation rentals and property values will plummet. The Mirllo Beach subdivision alone has a tax value of over \$50 million, and the rest of northern Rodanthe is worth at least that much. Thus, the annual tax contribution to Dare Co. is over \$400,000. Over the 50-year life of a bridge, that is \$20 million. Add to that the rental revenue and retail sales to vacationing renters and it is clear that bridges will result in a substantial financial loss to our community. ... and our community is one of the few that send more tax revenue to Raleigh than is spent here on government services.

9. Rodanthe is the test case for all of OBX. All of Hatteras Island is experiencing erosion problems; private homes in the villages, Pea Island Wildlife Refuge, and the Cape Hatteras National Seashore. What happens in Rodanthe will be a model for everywhere else. Do we really want a policy of simply building bridges and abandoning the current NC12 and the lands it supports? Is it right to just let the island dissolve into the Atlantic, when nourishment might keep the place just like it is now?

10. Please listen to those who your decision effects. Our future rest in your hands. Please act responsibly.

Sincerely,

Shelley & Jeff Weisberg
22012 Sixteenth August Street
Rodanthe, NC 27968

Email correspondence to and from this sender is subject to the N.C. Public Records Law and may be disclosed to third parties.

COMMENT SHEET

**Bonner Bridge Replacement Project
Public Workshops – Phase II
TIP No. B-2500
Dare County**

NAME: Westervelt, Frederic B

ADDRESS: 25 Howard St, PO Box 505, Ocracoke, NC 27960

E-MAIL: fvestervelt@aol.net

COMMENTS AND/OR QUESTIONS:

It would be well if we could, hypothetically, set aside all environmental issues and express the best engineering option- not just alternatives- that would meet the goal. This would sharpen the argument and lead to better decisions. At present we usually find that the environmental objections are introduced preemptively at an early stage, thus cutting off constructive thinking.

Keep your eyes on the prize- the primary goal of maintaining road access. This must trump wildlife, flora and fauna- and the niceties of land management.

USFWS and NPS possessiveness have for too long heavily compromised us. Surely there are ways, legislatively or other, to revise the current climate that have crowned as king the Organic Act of 1916 and subsequent E.O.s.

Current concerns about inadequate dredging of Rollison Channel and Hatteras Inlet are relevant to this project. If this is not attended to properly NC 12 is of no use to Ocracoke. If The Corps of Engineers have no federal funding the State of NC must step in, after all, this is a State road and we are State citizens.

Thank you for your hard work. Good luck.

Fvestervelt
Comments may be mailed by January 20, 2012 to:

Ms. Beth Smyre, PE
NCDOT – Project Development and Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548
Email: bsmyre@ncdot.gov

Norburn, Robert E.

From: Page, John
Wednesday, November 30, 2011 4:27 PM
Sent: Norburn, Robert E.; Smyre, Elizabeth A
To: Bonner Citizen Contact
Subject:

I received an information line call from an Avon property owner. He was upset that no decision had been made on replacing Bonner Bridge and that the Pea Island breach bridge was too short. I explained that a design-build contractor had been selected to build the replacement Oregon Inlet Bridge. I also indicated that the bridge over the breach was a short-term fix and that NCDOT had started planning the long-term fix. I said one alternative in that area was a 1.5-mile long bridge. I offered to put him on the mailing list and he agreed.

Mr. William E. Wilson
5805 Kipling Court
Baltimore, Maryland 21212-3735

John

John Page, AICP, CEP
Parsons Brinckerhoff
34 Fayetteville Street, Suite 1500
Raleigh, North Carolina 27601
USA
919-836-4076 (office)

pagej@pbworld.com
www.pbworld.com

SOUTHERN ENVIRONMENTAL LAW CENTER

Telephone 919-967-1450 601 WEST ROSEMARY STREET, SUITE 220 FACSIMILE 919-929-9421
CHAPEL HILL, NC 27516-2356

January 20, 2012

VIA EMAIL AND U.S. MAIL

Ms. Beth Smyre, P.E.
NCDOT - Project Dev. & Env. Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548
bsmyre@ncdot.gov

RE: Bonner Bridge Replacement Project
December 2011 Proposed Options for NC 12 (TIP No. B-2500)

Dear Ms. Smyre:

Thank you for the opportunity to comment on the options proposed by the North Carolina Department of Transportation ("NCDOT") for the "Phase II" portion of the Bonner Bridge replacement project, TIP Project Number B-2500 (the "Project"). These comments are submitted on behalf of Defenders of Wildlife, the National Wildlife Refuge Association, and the Southern Environmental Law Center.

None of the proposed alternatives will provide a viable long-term solution for the ongoing transportation crisis on Hatteras Island. The options will not satisfy Governor Perdue's request for a permanent solution to transport people to the southern Outer Banks. Moreover, they will run afoul of federal law. After two decades of study, it should be clear that the only viable long-term solution is to re-route the transportation corridor off the island onto a bridge that bypasses the most unstable portion of the island and/or onto ferries.

As discussed in more detail below, the Phase II plan is flawed in the following respects:

1. The selected alternative for the Project constitutes illegal segmentation in violation of the National Environmental Policy Act ("NEPA").
2. Outdated, skewed cost estimates can no longer justify construction of a replacement bridge over Oregon Inlet in Phase I and elimination of the Pamlico Sound Bridge alternative as the solution for the entire Project.

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3. The problems with each of the individual alternatives being considered for Phase II that have been previously identified still remain and prevent their implementation.

I. General Comments

A. Background

In the Environmental Assessment ("EA") issued May 7, 2010, and the Record of Decision ("ROD") issued on December 10, 2010, NCDOT and FHWA approved and selected an alternative called the "Parallel Bridge Corridor with NC 12 Transportation Management Plan" (the "Selected Alternative"). The Selected Alternative segments the Project into several parts: "Phase I" (an initial replacement bridge over Oregon Inlet) and "Later Phases" (monitoring Highway NC 12 through Pea Island National Wildlife Refuge (the "Refuge") and maintaining it in place while the island on which it is located, Hatteras Island, erodes and moves westward). The EA and ROD also refer to the Later Phases as "Future Phases" and "Phases II-IV," and state they will "mix and match" methods of maintaining the highway from methods previously identified in the NEPA process as well as other, yet-to-be-identified methods.

NCDOT and FHWA selected this alternative and rejected the less environmentally damaging Pamlico Sound Bridge alternative on the theory that the latter was not practical because all of its costs would be borne up front, while the Selected Alternative could proceed in phases, with fewer up-front costs and much of the cost being spread out over decades. Hurricane Irene in August 2011 (along with Tropical Storm Ida in November 2010, and numerous other storms over the years) proved the fallacy of that theory. Hurricane Irene created two new inlets and disrupted NC 12 for seven weeks. One new inlet is located near the mid-point of the Refuge (the "Refuge Inlet") and has been temporarily bridged. A second new inlet is located at the southern end of the Refuge near the village of Rodanthe (the "Rodanthe Breach"), and it has been temporarily filled and shored up with sandbags.¹

Governor Perdue has asked NCDOT to develop a long-term solution to the problem of maintaining NC 12 through the Refuge. In a series of public meetings beginning December 5, 2011, NCDOT presented alternatives for long-term solutions to the recurring problems caused by breaches of NC 12 in the southern two-thirds of the Refuge, leaving the recurring problems in the northernmost portion of the Refuge to be addressed later. The materials handed out by NCDOT at the public workshops are

¹ We understand that the banks of the Refuge Inlet are already eroding to the point that emergency measures are already being taken to prevent another breach of NC 12. Lauren King, "Lane Closures on N.C. 12 Bridge at Pea Island to Begin Wed.," The Virginian-Pilot (Jan. 17, 2012). We also understand that the fill material and sandbags supporting NC 12 at the Rodanthe Breach are also endangered by ongoing erosion.

hereinafter referred to as the "NCDOT Handout." These comments address those alternatives.

B. Segmentation

According to the EA and ROD, NCDOT and FHWA plan to select the methods for accomplishing the Later Phases from the list of options that were explored in previous NEPA documents but were rejected by federal agencies in the merger process. They may also turn to additional, undisclosed methods that were not revealed or explored in any NEPA document. NCDOT and FHWA plan to delay the decision on which of these methods – each impermissible for various reasons – until the Phase I bridge is already built and renders the maintenance of NC 12 in the Refuge necessary.

However, the damage caused by Hurricane Irene has forced NCDOT and FHWA to confront the unsustainable NC 12 situation sooner than they expected. The Refuge Inlet and the Rodanthe Breach destroyed sections of NC 12 in two of the four locations where government scientists have long predicted new inlets would form. NCDOT and FHWA are now tasked with developing a long-term plan to restore or bridge those two sections of NC 12 as "Phase II," before even beginning construction of Phase I. According to news reports, NCDOT plans to award contracts for the northern-most portion of Phase II by August 2012 and for the Rodanthe area by December 2012. Construction on the Bonner Bridge replacement is not slated to begin until 2013 and is expected to last three years. The fact that Phase I and Phase II will now effectively proceed simultaneously demonstrates that the two phases are one project, the effects of which must be considered together.

Despite the fact that the Merger Team could not fully support any of the alternatives now proposed for Phase II at the time they were originally considered, NCDOT has proffered them again to the public, having failed to develop any different, workable options to keep the highway stable. Yet the problems that prevented the Merger Team from supporting each of these options still remain: they cannot receive necessary permits from various federal and state agencies, they depend upon easements that the State does not own, and/or they cannot be found compatible with the Refuge as required by the National Wildlife Refuge System Improvement Act of 1997 (the "Refuge Act").

NCDOT and FHWA cannot legally ignore the impediments and impacts of the Phase II alternatives by segmenting the difficult, environmentally damaging portions of the Project until there is no other choice but to construct them. Under CEQ's NEPA guidelines, when an agency is considering "connected actions" that "are related to each other closely enough to be, in effect, a single course of action," their impacts must be considered together. 40 C.F.R. §§ 1502.4(a), 1508.25(a). Here, the bridge over Oregon Inlet and the alternatives for addressing the damage inflicted by Hurricane Irene

constitute such "connected actions," and they must be considered a single transportation project, for which the impacts must be considered altogether.

The new breaches/inlets and NCDOT's newly accelerated timetable clarify that NCDOT cannot divide the Project into separate phases and consider only the environmental effects of Phase I at this time without violating NEPA. As we explained in previous comments,² NCDOT and FHWA's phased plan constitutes illegal segmentation by evaluating the environmental impacts of the Project piecemeal, and allowing the selection for Phase I to force choices for Phase II. The Project in this case encompasses the entire transportation corridor from Bodie Island to Rodanthe, so evaluating each "phase" of the Project separately violates NEPA. With multiple phases of this Project now underway simultaneously, it is even more apparent that NEPA documentation must evaluate the entire Project as a whole in order to analyze its environmental impacts adequately. A complete evaluation of the Project as a whole must include re-evaluating the choices made concerning Phase I.

To do otherwise – to treat Phase I's replacement bridge as a *fait accompli* when planning Phase II – impermissibly forces the decision on the Later Phases. It irretrievably commits resources to the Phase I replacement bridge in such a way that it forces the Later Phases to go forward without regard to their environmental consequences. If the environmental consequences and costs of the alternatives for the Later Phases had been considered thoroughly and realistically, the agencies would likely have selected a different alternative altogether in the ROD.

Segmentation is also inappropriate because it leaves users of NC 12 and Hatteras Island residents and visitors vulnerable to a foreseeable breach outside the two current Phase II sites. The proposed options do nothing to address the ongoing problems at the Canal Zone hot spot, for example, and another breach may open in or near the S-curves area in the very near future. NCDOT's approach suggests that, as with the Hurricane Irene breaches, it will wait until the next crisis arises before attempting to patch it and then retrospectively attempt to develop a stable solution for that particular site. This piecemeal approach falls far short of the comprehensive, long-term solution for the NC 12 corridor required by NEPA and, furthermore, requested by Governor Perdue.

C. Inaccurate Cost Estimates

The alternatives for Phase II cannot be considered without updated and accurate cost estimates, for all alternatives, including a Pamlico Sound Bridge and modern ferries, as requested by the Corps of Engineers in its letter to NCDOT of January 5, 2012. The Pamlico Sound Bridge alternative cost estimates should include estimates for a version of

² Comments dated June 21, 2010, on the EA (pp. 6-9); Comments dated October 27, 2008, on the 2008 Final Environmental Impact Statement ("FEIS") (pp. 25-27).

that bridge that does not travel as far away from Hatteras Island into the sound, but rather incorporates new bridge-building technologies that allow construction closer to the Refuge without harming submerged aquatic vegetation. Such a bridge would be shorter and presumably less expensive than the 17.5-mile version previously priced.

Although the Merger Team selected the Pamlico Sound Bridge alternative for detailed study in 2003 and generally acknowledged it to be the least environmentally damaging alternative, NCDOT and FHWA rejected it in favor of the current approach, arguing that the up-front costs of the long bridge would be too expensive while the phased approach or transportation management plan (TMP) alternatives would supposedly have fewer up-front costs with the majority of costs being spread over decades. This argument no longer justifies rejection of the Pamlico Sound alternative.

As explained above, after Hurricane Irene, Phases I and II will now overlap significantly and progress virtually simultaneously. We have attached a map showing the location of the three portions of the Project that are currently planned, created using data obtained from NCDOT. As is evident from the map, the currently planned Project portions account for at least seven to 10 miles of bridge and two-thirds of the length of the entire Project, leaving little to be accomplished in the Later Phases. In addition, in light of the current rate of erosion of the banks of the Refuge Inlet, we understand that the bridge over that portion of the Refuge might need to be much longer to last more than a few years. Accordingly, the combined up-front costs of the currently planned portions will surely begin to approach the up-front costs of the Pamlico Sound alternative. The fact that NCDOT is proposing to fund three large-scale construction projects simultaneously, even though the total cost of these projects is likely to be comparable to the less environmentally damaging Pamlico Sound Bridge, should compel reconsideration of the prior rejection of the Pamlico Sound Bridge solely on the basis of funding.

The cost estimates provided in the NCDOT Handout (p. 11) date from 2006. Even at that time, federal agencies – including the National Marine Fisheries Service (“NMFS”), Department of the Interior (“DOI”), and the Army Corps of Engineers – questioned the accuracy of those estimates. In 2006, when cost estimates of various alternatives were updated from the 2005 Supplemental Draft Environmental Impact Statement, the cost of the Pamlico Sound Bridge alternative rose inexplicably disproportionately as compared to the other alternatives. Then, in 2011, the Phase I Oregon Inlet replacement bridge contract was awarded for a mere 59% of its previously estimated price. The Pamlico Sound Bridge would likely see similar savings, and might even realize greater savings to the extent that its 2006 estimated price appears to have been inflated relative to the estimates for other alternatives.³ In addition to the passage of

³ See, e.g., U.S. Army Corps Comments on Supplement to SDEIS (Apr. 18, 2007), at p. 1 (questioning the 12.3% increase for the Pamlico Sound Bridge as compared with the 36% increase for the Oregon Inlet bridge).

time, much has changed since the 2006 estimates were generated, including construction costs, recession and inflation, the creation of new inlets in the Refuge, and other changes to the island’s geography.

The chart below shows the progression of cost estimates and contracts.

	Short / Parallel Bridge Alternative	Long / Pamlico Sound Bridge Alternatives
NCDOT’s 2005 Estimates (from NCDOT’s Supplemental Draft Environmental Impact Statement, Sept. 12, 2005, p. 2-110)	“All Bridge Alternative” \$493 million (incl. \$191 million for Phase I Oregon Inlet bridge, plus remainder for route to Rodanthe)	\$420 million to \$425 million
NCDOT’s 2006 Estimates (from NCDOT’s Revised Final Section 4(f) Evaluation, Oct. 9, 2009, pp. 26, 27, App. G-3)	Parallel Bridge Alternatives: \$602 million to \$1.524 billion (incl. up to \$368 million for Phase I Oregon Inlet bridge, plus remainder for route to Rodanthe)	\$943 million to \$1.441 billion
NCDOT’s 2006 Estimates for Phase II only (from NCDOT Handout, p. 11)	\$331 million to \$1.136 billion (for Phase II only)	N/A
NCDOT’s 2011 Estimates (from NCDOT Handout, p. 7, and article by Bruce Siceleof, News & Observer, 12/15/11, quoting NCDOT)	\$216 million – contract for Phase I Oregon Inlet bridge \$211 million to \$387 million – NCDOT estimates for Phase II alternatives over new Hurricane Irene breaches Total: \$427 million to \$603 million	\$553 million to \$846 million ?? (if actual contract came in at the same 59% discount from 2006 estimate as the Phase I Oregon Inlet bridge)

NCDOT states that it will develop more accurate cost information once the proposed options have been narrowed down through the public comment process and Merger Team meetings. However, this sequence of events deprives the public of vital information it needs before it can accurately evaluate these options. Updated cost information should have been provided to the public at the outset to inform the comments. Moreover, NCDOT and the Merger Team need accurate cost information in order to select or eliminate options reasonably. Waiting until an alternative has been selected to develop

accurate cost information prevents sound agency decision-making and risks impermissible reverse-engineering of cost estimates to support predetermined outcomes.

Moreover, the cost estimates for Phase II provided by NCDOT fail to include key components of the Project. First, all cost estimates should include the cost of replacing the Bonner Bridge (Phase I) since they are part of the same Project. They also should include the costs of foreseeable direct and indirect impacts of these options, including mitigation costs, emergency repairs of storm damage throughout the construction of the phased approach, the permanent ongoing maintenance of an elevated roadway located in the Atlantic Ocean that will result from the phased approach, etc. For instance, NCDOT has incurred costs to restore NC 12 over the two Hurricane Irene breaches and is currently incurring additional costs to shore up the bridge over the Refuge Inlet; these costs should be considered part of Phase II. Finally, despite frequent mentions of a monitoring program in previous NEPA documents, there are no cost estimates provided to reflect the costs of such a program for each of the proposed alternatives. Providing all of this information to reflect the true cost of each alternative would help the agencies and the public fairly compare these alternatives with other alternatives such as a Pamlico Sound Bridge or modern ferry system.

In sum, many factors – including the fact that Phases I and II will proceed nearly simultaneously, the likelihood that the Pamlico Sound Bridge alternative would cost far less than previously estimated, the likelihood that the true cost of Phases I and II will approach that of a Pamlico Sound Bridge, and the possibility that any sources that could fund Phase II might also be available to fund a Pamlico Sound Bridge – all mandate a re-examination and revision of the cost estimates previously provided to the public and the Merger Team.

II. Specific Problems with Each of DOT's Proposals for Pea Island and Rodanthe

Each of the alternatives currently proposed by NCDOT for Phase II is taken from options first proposed in 2005 and analyzed extensively since then. None of these options was eventually selected as the preferred alternative due to the serious legal and/or engineering problems inherent in each of them, and the fact that the same problems remain militates in favor of re-evaluating the plan for the entire Project.

According to the NCDOT Handout, p. 4, the current Phase II “Beach Nourishment” alternative equates to the 2008 FEIS’s Nourishment alternative. The current Phase II “Bridge Within Existing NC 12 Easement” alternative equates to the 2008 FEIS’s “Phased Approach.” The current Phase II “Bridge/Road on New Location” alternatives described in the NCDOT Handout equate to the 2008 FEIS’s “Road North/Bridge South” and “All Bridge” alternatives.

Because all of these options are virtually identical to past alternatives rejected by the Merger Team, our specific comments on the current proposed options are similar to (and incorporate by reference) our comments on the 2005 Supplemental Draft Environmental Impact Statement (SDEIS), the 2007 Supplement to the SDEIS, the 2008 FEIS and Section 4(f) Evaluation, the 2009 Revised Final Section 4(f) Evaluation (“Revised 4(f) Evaluation”), and the 2010 E.A.

Finally, it is striking that NCDOT essentially concedes it has no viable plan for a long-term solution to transportation problems for the Rodanthe area. NCDOT Chief Operating Officer Jim Trogon has stated that even after six years of studying the current proposed options for Rodanthe, “there’s no alternative that stands out yet.”⁴ Moreover, even the NCDOT Handout, Table 2 (p. 10), lists “Potential Constraints” that will be fatal to each of the Rodanthe options:

- The Beach Nourishment option is “[n]ot likely to be found compatible with Refuge’s mission and purpose; sand quality and sand availability . . . is [sic] a concern,” as is the “extensive dredging” that will be required to obtain the sand and the frequency with which nourishment would have to be repeated.
- The Bridge on New Location option is “[n]ot likely to be found compatible with Refuge’s mission and purpose.”
- The Bridge within Existing NC 12 Easement is subject to a “[r]apid erosion rate” that will result in parts of the elevated structure being “in the surf zone or offshore in the future,” a result that was rejected in 1991 as creating serious maintenance problems and an unreliable storm evacuation route that would bear the brunt of an incoming nor’easter or hurricane.
- The Bridge within Existing NC 12 Easement and Beach Nourishment option raises the “[s]hame concerns as with beach nourishment option [i.e., compatibility and sustainability]; in addition, rapid erosion rate in this area may cause portions of the structure to be in the surf zone or offshore in the future.”

The significant problems that NCDOT concedes with regard to each of these options demonstrate that none of them presents the viable long-term solution to the NC 12 maintenance problem requested by Governor Perdue. Any long-term solution must include moving the transportation corridor off this vulnerable stretch of Hatteras Island.

⁴ Catherine Kozak, *NCDOT Presents Options for Long-Term Highway 12 Repair to the Public*, Island Free Press (Dec. 7, 2011).

A. Problems with Beach Nourishment Alternative

NC DOT proposes to use beach nourishment combined with dune enhancement "to maintain an adequate protective beach and dune system." NCDOT plans to nourish four locations at four-year intervals, though more frequent intervals will likely be required.

1. Practical Difficulties

There are numerous practical impediments to relying on beach nourishment to try to counteract the natural movement of Hatteras Island and the formation of new breaches and inlets. Chief among these is the fact that nourishment tends to accelerate erosion by steepening the beach. This and other problems are described in more detail below.

However, in addition to these general problems, nourishment simply is not a viable option in the area of the temporary bridge over the Refuge Inlet because the inlet there is moving southward and will cause the bridge to collapse. Nourishment will not stop this movement. One of the Fish and Wildlife Service ("FWS") buildings on the south side of the new inlet has already fallen into the inlet, and several more are currently close to collapse and may have already been condemned. Just a few months after the temporary bridge was installed there, the inlet has already migrated so much that it has already become necessary to shore up the bridge. (See footnote 1.) Inlet movement is a natural part of barrier island dynamics, and the new Refuge Inlet may migrate as far south as the location of the former New Inlet. Much more intrusive structural maintenance would be required to try to stabilize the current bridge, which would be found to be incompatible with the Refuge.

Finally, the nourishment options for the Rodanthe Breach are described inconsistently in NCDOT's workshop handout. The Nourishment option's map shows nourishment stopping just south of the Refuge boundary. However, the "Bridge Within Existing NC 12 Easement and Beach Nourishment" option shows nourishment extending south of the Rodanthe Historic District. If nourishment further south will be required for the bridge option, it will be required for the nourishment-alone option as well. Thus, NCDOT appears to understate significantly the geographical extent of the nourishment required for this latter option.

2. Geological and Biological Impacts

The Nourishment and dune enhancement option would harm – both directly and indirectly – protected species with habitat in the Study Area. It would also alter the geological profile of the island in a manner harmful to the natural processes of the barrier islands. The geologic effects of nourishment will narrow the island and will cause further harm to federally protected plants and animals.

Nourishment and dune construction alter the geological profile of the target beach. "[A] steeper beach profile is created when sand is stacked on the beach during the nourishment process. This condition can lead to greater wave energy on the beach and greater beachside erosion." Atlantic States Marine Fisheries Commission, "Beach Nourishment: A Review of the Biological and Physical Impacts" 5 (November 2002). Because of this higher erosion rate with nourishment, the demand for sand increases over time. *Id.* at 6. The combined erosion on the ocean and sound sides of the island will lead to a narrowing of the island, potentially to the point that it can no longer support a highway, much less the wildlife habitat that is the purpose of the Refuge.

In addition, nourishment and dune construction prevent ocean overwash, leading to further erosion on the sound side, including erosion of sound-side wetlands. Overwash moves sand to the sound side of barrier islands and is an essential part of barrier island dynamics. *See* S.R. Riggs, *et al.*, "North Carolina's Coasts in Crisis: A Vision for the Future" ("Coasts in Crisis"), which explains how nourishment and dune construction contribute to ocean-side erosion and prevent overwash, exacerbating sound-side erosion. This article is available at: http://www.coastal_geology.ecu.edu/NCCOHAZ/downloads/Coasts%20in%20Crisis%20Booklet.pdf.

The impacts of nourishment also extend beyond the visible beach to the near-shore waters and to the offshore areas from which sand is mined. Mining sand offshore can disrupt long-shore sediment transport and the long-term sediment budget for the barrier islands and their adjacent inlets.

Beyond these negative effects on the physical structure of the island, the nourishment option will also negatively impact plant and animal species. Organisms can be harmed by nourishment either directly by sand placement or indirectly through alterations to the beach environment. For example, "birds may be displaced by dredges, pipelines, and other equipment along the beach, or may avoid foraging on the beach if they are aurally affected." Atlantic States Marine Fisheries Commission, "Beach Nourishment: A Review of the Biological and Physical Impacts" (November 2002). Other direct impacts include eggs, hatchlings, and adult birds being crushed by sand. *Id.* Indirect impacts to feeding birds are related to the sediment grain. "If the sediment is too coarse or high in shell content it can inhibit the bird's ability to extract food particles from the sand. Fine sediment that reduces water clarity can also decrease feeding efficiency of birds." *Id.* Other indirect impacts from beach nourishment can include diminished reproductive success, reduction in biomass of prey items, and long-term changes to substrate composition at dredging sites.

Long-term nourishment within the Project area would have additional adverse impacts on federally protected species, including the piping plover and North Carolina's endangered sea turtle species. By suppressing overwash, nourishment leads to loss of

designated critical sound-side feeding habitat and nesting habitat for the federally threatened piping plover. In addition, the nourishment and artificial dune system prevents natural maintenance of existing habitat by increasing vegetative succession. Furthermore, nourishment may result in a narrower, steeper beach profile, reducing the available intertidal area. See National Park Service, Natural Resource Year in Review—2004; Ecosystem Restoration in an Altered Coastal Environment, [available at http://www.nature.nps.gov/yearinreview/yir2004/01_H.html](http://www.nature.nps.gov/yearinreview/yir2004/01_H.html) (“A berm constructed to reduce the potential for island breaching has prevented natural overwash processes and has reduced habitat availability of piping plover.”).

Beach nourishment can directly impact endangered sea turtles by burying nests and disturbing nesting turtles. Nourishment also impacts turtles indirectly. Beach nourishment may result in increased sand compaction and hardness and changes in moisture content and beach slope. Furthermore, as discussed above, nourished barrier islands may erode more quickly than natural beaches. This rapid erosion creates escarpments, which hamper access to nesting sites. In a vicious cycle, the rapid erosion may necessitate re-nourishment at more frequent intervals, thereby increasing the likelihood of interference with sea turtle nesting. See Fish and Wildlife Service, Recovery Plan for the U.S. Population of Atlantic Green Turtle, 3, 1991, [available at http://www.nmfs.noaa.gov/pr/pdfs/recovery/turtle_green_atlantic.pdf](http://www.nmfs.noaa.gov/pr/pdfs/recovery/turtle_green_atlantic.pdf).

The nourishment option is also unsustainable. Narrowing the island renders it more fragile and makes maintenance of NC 12 even more difficult in the long-term. Not only does erosion accelerate as a result of nourishment, but the costs of nourishment increase greatly over time and the amount of usable sand is limited. NMFS commented that the need for nourishment appeared to be significantly understated and the availability of suitable sand appears to be significantly overstated, which “could affect conclusions about the suitability of the alternatives that have beach nourishment as a component.” (FEIS at 8-49 to 8-50). DOI noted in its comments on the nourishment option that “over 500,000 cubic yards of Oregon Inlet sand have been placed along and adjacent to the ‘Canal Zone Hot Spot’ [alone] *annually* for the past four years, and it has not been sufficient to protect the highway from overwash and sand deposition impacts.” FEIS 8-58 (emphasis added). And NCDOT admitted in its response to NMFS and DOI’s concerns that it has not adequately studied the sand supply issue to determine whether available and suitable sand sources exist for a project of this magnitude. (Response to Comment, FEIS at 8-59).

3. Inaccurate Cost Estimates

The cost estimates provided for the nourishment option are misleading for several reasons. First, like all the cost estimates provided in the handout, they are now five years out of date. Second, as discussed above, nourishment tends to accelerate beach and sound-side erosion. That means that not only will the need for more sand increase over

time, but the island will become more vulnerable to breaches as it narrows, necessitating expensive emergency repairs. NCDOT has also admitted that nourishment has increased flooding problems in the Canal Zone hot spot area. FEIS at 4-70. Cost estimates should reflect these problems. Due to the massive volume of sand (500,000 cubic yards annually) that has been required even to partially stabilize the Canal Zone hot spot area in recent years, the Department of the Interior noted that “it appears that the estimated beach stabilization and associated costs are understated.” FEIS at 8-58.

Finally, the long Pamlico Sound Bridge agreed upon by the Merger Team in 2003 was designed to last 100 years. Providing only a 50-year cost estimate for nourishment disguises the true cost of this option in comparison with a 100-year option like the Pamlico Sound bridge. The equivalent 100-year cost of nourishment would be at least double the current 50-year estimate, or \$815,490,000 to \$1,314,520,000, and it will likely be much higher when updated cost information is developed and erosion acceleration and other geologic impacts of nourishment are taken into account. When these costs are added to the cost of the Oregon Inlet bridge currently under contract, the nourishment option is significantly more expensive than the Pamlico Sound Bridge alternative.

4. Permitting and Compatibility Problems

It is unlikely that NCDOT will be able to secure necessary permits from the Army Corps of Engineers for the Nourishment alternative. Section 404(a) of the Clean Water Act, 33 U.S.C. § 1344(a), authorizes the Secretary of the Army, acting through the Corps of Engineers, to issue permits for the discharge of dredged or fill materials into navigable waters. Section 404(b)(1) directs the Environmental Protection Agency to issue guidelines (“404(b)(1) Guidelines”) defining the circumstances in which dredged or fill material may be discharged into wetlands or other waters. The Corps must deny applications for section 404 permits if the discharge that would be authorized by the permit would not comply with EPA’s 404(b)(1) Guidelines. 33 C.F.R. § 320.4(a).

The 404(b)(1) Guidelines prohibit issuance of a permit where:

- (i) There is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem, so long as such alternative does not have other significant adverse environmental consequences; or
- (ii) The proposed discharge will result in significant degradation of the aquatic ecosystem . . . ; or
- (iii) The proposed discharge does not include all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem; or

(iv) There does not exist sufficient information to make a reasonable judgment as to whether the proposed discharge will comply with these Guidelines.

40 C.F.R. § 230.12(a)(3). An alternative to discharge to navigable waters "is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purpose." 40 C.F.R. § 230.10(a)(2) (emphasis added). Where a discharge "is proposed for a special aquatic site" and is not "water dependent," all practicable alternatives to the proposed discharge which do not involve a discharge to a special aquatic site "are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise." 40 C.F.R. § 230.10(a)(3). As a federal wildlife refuge, the area at issue in this case is a special aquatic site, and the use is not "water dependent" since the transportation route could be placed elsewhere, including over Pamlico Sound. 40 C.F.R. §§ 230.2(q-1); 230.40. "If such an alternative exists . . . the [Clean Water Act] compels that the alternative be considered and selected unless proven impracticable." *Utahns for Better Transp. v. U.S. Dep't of Transp.*, 305 F.3d 1152, 1188-89 (10th Cir. 2002) (emphasis added).

The fact that NCDOT has a contract for construction of an Oregon Inlet bridge replacement does not preclude this required alternatives analysis, because practicable alternatives must be evaluated relative to the overall project purpose. The Pamlico Sound Bridge and the development of a ferry network are two examples of practicable alternatives that fulfill the project purpose with far less impact on the island's ecosystems. The decision to proceed simultaneously with three costly projects in the transportation corridor demonstrates that the funding concerns raised by FHWA in no way proved the Pamlico Sound Bridge impracticable as required by the Clean Water Act. As the Corps of Engineers explained in its letter to NCDOT dated January 5, 2012, "the primary reason [it] believed that the Pamlico Sound Bridge was not a practicable alternative was based on cost estimates and the assertion that the project could not reasonably be funded." If this underlying rationale is proven false and the Pamlico Sound Bridge re-emerges as the least environmentally damaging practicable alternative, the Corps will not be able to issue a § 404 permit for the Selected Alternative or any of its component parts, including the Nourishment option for Phase II.

In addition to these § 404 permitting concerns, the Nourishment option within the Refuge requires depositing sand outside the State's NC 12 easement, and therefore constitutes a use of the refuge under § 4(f) of the Department of Transportation Act of 1966. Use of publicly owned land is prohibited unless "(1) there is no prudent and feasible alternative to using that land; and (2) the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use." 49 U.S.C. § 303(c). Depositing sand on the Refuge beaches is without question a use of the Refuge property. Thus, it is prohibited where

there are prudent and feasible alternatives. For the reasons discussed above, NCDOT's plan to construct three components of the transportation corridor project simultaneously reveals that the up-front funding concerns used to justify the rejection of the Pamlico Sound Bridge as not prudent were in fact arbitrary and capricious, and should be rejected in light of the current situation. Because feasible and prudent alternatives to this use of the Refuge land exist, this option cannot be approved under § 4(f). Even if no feasible and prudent alternatives exist, § 4(f)'s implementing regulations require that "the Administration may approve *only* the alternative that . . . [c]auses the least overall harm." 23 C.F.R. § 774.3(c)(1) (emphasis added). The Nourishment option does not cause the least overall harm, even among NCDOT's current Phase II options.

Moreover, the Nourishment option's use of the Refuge property also triggers a required compatibility determination: "[T]he Secretary shall not initiate or permit a new use of a refuge or expand, renew, or extend an existing use of a refuge, unless the Secretary has determined that the use is a compatible use and that the use is not inconsistent with public safety." 16 U.S.C. § 668ddd(d)(3)(A)(i). "Compatible use" "means a wildlife-dependent recreational use or any other use of a refuge that, in the sound professional judgment of the Director, will not materially interfere with or detract from the fulfillment of the mission of the System or the purposes of the refuge." 16 U.S.C. § 668ee.

Inherent in fulfilling the System mission is not degrading the ecological integrity of the refuge The Refuge Manager must consider not only the direct impacts of a use but also the indirect impacts associated with the use and the cumulative impacts of the use when conducted in conjunction with other existing or planned uses of the refuge, and uses of adjacent lands or waters that may exacerbate the effects of a refuge use.

65 Fed. Reg. 62484, 62490 (Oct. 18, 2000).

Here, the direct and indirect impacts of nourishment and dune construction are incompatible with the purpose of the Refuge because would they harm plants and animals in the Refuge as well as the species' ecosystems and designated critical habitat, and they would negatively alter the geological condition of the Refuge land by contributing to increased erosion and island narrowing. NCDOT acknowledges that the Nourishment option is "[n]ot likely to be found compatible with Refuge's mission and purpose." (Handout p. 10).

Finally, the Cape Hatteras National Seashore extends 150 feet offshore of the Refuge, so NCDOT would also need a Special Use Permit from the National Parks Service ("NPS") in order to pursue the Nourishment option. The harmful impacts of nourishment, which result in narrowing the island, are not compatible with the NPS's goal of supporting the natural processes of barrier island dynamics.

B. Problems with Bridge Within Existing Easement Alternative

This "Bridge Within Existing Easement" alternative involves elevating NC 12 onto bridges within the State's current easement and is part of the "Phased Approach" that was effectively rejected by not being designated the preferred alternative in the EA or the selected alternative in the ROD. This option has two components in the current Phase II proposal: a longer, permanent bridge over the Refuge Inlet, along with two bridge options for the Rodanthe Breach site. Though NCDOT's workshop materials do not disclose this, the Phased Approach option may also involve nourishment and the construction of artificial dunes.

NCDOT claims that elevating NC 12 in the Refuge will not use the Refuge so long as the Project stays within its existing easement. As a result, NCDOT claims there are no potential constraints on this option (Handout p. 8). However, this option is highly unlikely to stay within its easement, and even if it does, it will constitute a use of the Refuge that is subject to a compatibility determination.

In a 2007 letter to then-Governor Easley, DOI stated that the Phased Approach would require actual use of Refuge land and therefore was likely incompatible with the Refuge's purpose:

While the intent is to construct these new bridges within the existing road's right-of-way, we believe this alternative would require *continued maintenance outside of the existing road's right-of-way* through the Refuge until each subsequent phase of bridge construction along NC 12 is completed. Current information also indicates that all 4 phases would require at least 13 years of actual construction during a 28-year timeframe. Based on the information that the Service currently has, *it is unlikely that we could find this alternative to be compatible with the purposes for which the refuge was established*, as required under the Refuge Improvement Act.

Letter from David Verhey, Acting Assistant Secretary for Fish and Wildlife and Parks, to Governor Easley, dated September 11, 2007 (emphasis added).

The Phase II NCDOT Handout and other materials also fail to mention the projected dune-building and maintenance activities through 2030 that were integral to the Phased Approach as it was described in the FEIS (pages 4-70 to 4-72), much less explain how maintenance and any future dune-building will stay within the easement and cause no further encroachment onto the Refuge. Absent credible information to the contrary, it is simply not realistic for NCDOT to claim it will be able to accomplish all of the activities it proposes – new dune construction and maintenance, a temporary road, and constructing a long bridge more than 40 feet wide while keeping the existing highway

open— while staying entirely within its existing easement. It is virtually inevitable that these activities will "use" the Refuge within the meaning of Section 4(f). Moreover, the FEIS acknowledged that the Phased Approach "may require some beach nourishment," which would constitute a further use of Refuge land. (FEIS at 4-107). For all these reasons, it is foreseeable that the Phased Approach will result in actual use of Refuge land.

In addition to these actual uses of Refuge land, this option will constructively use Refuge property as well. The elevated roadway will soon be located on the beach, in the surf, and eventually in the Atlantic Ocean as the island migrates westward. NCDOT acknowledges that the end result of this option will be a long bridge located in the ocean. See FEIS at 4-172. This is an absurd result. The U.S. Army Corps reminded NCDOT in its 2007 comments on the Supplement to the SDEIS that an ocean bridge was rejected in 1991 (in the form of the "East Bridge" alternative) because wave and storm impacts would create unjustifiably high maintenance costs. Those same problems will plague an elevated NC 12 that winds up in the ocean under the Phased Approach as well. Large sections of the proposed bridge will sit in highly dynamic breaker zones, where they will be subject to waves, scour, and severe storms, including nor'easters and hurricanes. Beyond the severe maintenance problems this would create, the route would also fail utterly to provide a safe, reliable storm evacuation route. For this reason alone, this option must be rejected.

Moreover, beyond these problems, the bridge's eventual location in the surf also constitutes a constructive use of the Refuge: "A constructive use occurs when the transportation project does not incorporate land from a Section 4(f) property, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired." 23 C.F.R. § 774.15(a). An ocean-side bridge will negatively affect Refuge geology, including erosion rates, inlet formation, ocean overwash, etc. Indeed, NCDOT has admitted that the presence of bridge piles on the beach or in the ocean and the accompanying scour effects would create erosion problems and "could accelerate the development of a breach" during storms. The scour area on the ocean floor anticipated by NCDOT to result from the elevated roadway is approximately 15.6 acres. (FEIS at 4-61). As we discussed in our comments on the FEIS, scour effects from a long ocean-side bridge running parallel to the shore have not been adequately studied and may be much more significant than revealed in the FEIS. Moreover, dune construction and/or nourishment will increase ocean-side erosion, prevent overwash, and increase sound-side erosion, reducing valuable wetland habitat.

The Refuge Act specifically mandates that a compatibility determination consider the direct, indirect, and cumulative impacts on Refuge land and any adjacent land or waters that affect the Refuge use. It is clear that the elevated roadway option will have adverse impacts on the Refuge, and it is therefore subject to a compatibility

determination. For the reasons already discussed, FWS is likely to find the proposed activity is incompatible with the mission and purpose of the Refuge.

This option also would be subject to a compatibility determination even if it did not constitute a physical use of Refuge land under § 4(f). First, this option would use the Refuge as a historic property due to the significant visual impact of an elevated bridge through the length of the Refuge. NCDOT acknowledges that a long bridge through the Refuge or on the beach will create a “sizeable visual intrusion in to the landscape of the Refuge,” all the more so in light of new bridge height requirements developed after Hurricane Katrina.

Second, irrespective of § 4(f) use, maintenance of an existing right-of-way is subject to review and approval by the FWS and is restricted to minor actions such as minor expansions or minor realignments to meet safety standards. *See* Final Compatibility Policy Pursuant to the National Wildlife Refuge System Improvement Act of 1997, 65 Fed. Reg. 62484, 62490 (Oct. 18, 2000). The impacts of a major project to elevate the length of NC 12 through the Refuge will include significant direct and indirect effects and therefore cannot be exempted from a compatibility determination.

Assuming that NCDOT plans to continue this option under a phased approach and thus will not elevate the entire roadway at once, this option will have significant indirect impacts on the Refuge and impermissibly interfere with the FWS’s ability to manage the Refuge for the benefit of federally protected species. Because of the unpredictable nature of barrier island dynamics – including inlet/breach formation, shoreline erosion rates and locations, and sound-side erosion – NCDOT’s plan to elevate sections of the highway as problems arise will likely occur suddenly and require “temporary” or “emergency” actions that will permanently and adversely affect the Refuge. As has been the case for maintaining NC 12 in the past, these temporary measures include sand bags, beach nourishment, dune rebuilding, dune sprigging, fencing, and road relocation. As NCDOT admitted in the FEIS, it has never conducted these emergency or maintenance measures within the existing right-of-way. Such an approach would also recreate the significant transportation problems and economic losses that Hatteras residents suffered as a result of recent NC 12 breaches, including the six to seven weeks they were cut off in the wake of Hurricane Irene.

In addition to the harmful impacts on Refuge land, an ocean bridge would harm essential fish habitat (“EFH”). NCDOT has stated that the ocean bridge that would result from this option

could permanently affect diversity and density of some aquatic wildlife within these [ocean] communities Because of habitat alteration and diminished vegetative growth, shading could impact managed species by locally diminishing the primary producers on which the managed species

rely for food and cover, thereby resulting in an overall reduction in local carrying capacity. Fish abundance and growth have been found to be lower beneath fishing piers compared to adjacent waters The high energy around the piers may reduce habitat quality for larval and adult fish, as well as reduce invertebrate species abundance and diversity.

(FEIS at 4-107.) The Magnuson-Stevens Act, 16 U.S.C. § 1801 *et seq.*, requires agencies to consult with the U.S. Secretary of Commerce before undertaking any action that might adversely affect EFH.

In addition, maintenance activities on this bridge in the surf zone “would . . . represent a long-term impact” to EFH and federally protected species. *See* FEIS at 4-108. Permanent, ongoing maintenance would be a necessity for bridge piles located in the high-energy surf zone, as the vast majority of the elevated roadway would be over the next 50 years, and this intrusive activity would be a major detriment to EFH. Permanent, on-going maintenance of an ocean bridge would also constitute another use of the Refuge, would require a Special Use Permit from the NPS, and likely a section 404 permit from the Army Corps as well.

The dune-building activities associated with this option will disrupt overwash and other barrier island dynamics, as described above in the discussion of the Nourishment option. Once these natural processes are interrupted, the bridge will adversely affect migratory bird and other wildlife habitat. For example, the eventual presence of bridge pilings in the surf or on the beach would impact the quality of nesting habitat for the federally protected piping plover and green and loggerhead sea turtles. Because this result is readily foreseeable, this option is incompatible with the purpose of the Refuge due to the significant negative impacts of a long bridge located on the beach or in the ocean.

Beyond these problems within the Refuge, there are serious legal and logistical problems with elevating the existing roadway in the Rodanthe area as well. By NCDOT’s own calculations, a bridge in this area will be located in the breakers by 2020 – *in eight short years* – creating tremendous maintenance and erosion problems. By 2060, NCDOT calculates the bridge could be 930 feet offshore. FEIS at 4-30, 4-62. Cost estimates should reflect the certainty of this section of bridge being located in the Atlantic Ocean. Moreover, as discussed above, the bridge’s eventual location in the breakers and offshore would render the bridge unusable as an emergency evacuation route.

A Rodanthe bridge will also create access problems and significant effects on the human environment for property owners and tourists. As one example, NCDOT noted in its 2010 EA that the bridge will have to terminate in a full-height stub so that it can be continued farther into Rodanthe when continuing erosion cuts off planned temporary access ramps. Furthermore, NCDOT concedes that the bridge being in the surf will

impede views and beach access for residents and visitors and likely will accelerate the erosion problems that already threaten structures in Mirlo and Rodanthe, to the detriment of local property owners.

The Bridge with Nourishment option for Rodanthe is not feasible either. It would have the same erosion problems as the longer Rodanthe bridge, and would also require a compatibility determination in order to deposit sand and construct dunes in the Refuge. As NCDOT acknowledges—as well as for the reasons given above—this activity is likely to be found incompatible with the Refuge. (Handout p. 10).

Finally, the cost of this option was estimated by NCDOT to be higher than that of the Pamlico Sound Bridge when the most recent cost estimates were calculated in 2006. The Phased Approach was estimated to cost between \$1.171 and \$1.497 billion, or between \$1.149 billion and \$1.524 billion if nourishment was also used in the Rodanthe area. (Rev'd Final 4(f) Evaluation, FEIS at B-26). The Pamlico Sound Bridge, by contrast, was estimated to cost between \$942.9 and \$1.441 billion. Cost cannot therefore justify rejecting the Pamlico Sound Bridge in favor of this current proposal.

C. Problems with Road or Bridge on New Location West of Existing Easement in the Refuge

NCDOT has conceded that the two options to relocate NC 12 west of its existing easement are not viable because they could not obtain the necessary easements and compatibility determinations. Jim Trogdon has admitted that “[o]n Pea Island, any option that stays in the right of way is preferred, and in some cases, required.”⁵ Several agencies on the Merger Team rejected these options in 2009 due to their substantial wetlands impacts. Moreover, the NCDOT Handout (p. 8) acknowledges that neither relocation option would be likely to be found compatible with the Refuge. These admissions should have prevented NCDOT from presenting such unrealistic options to the public.

The information provided to the public about these options is also unrealistic because it artificially understates the impacts to wetlands and other lands within the Refuge. The NCDOT Handout states that the wetlands impact for the “Bridge on New Location” option is 0.1 acre and that it is 3.0 acres for the “Road on New Location” option. However, the FEIS reveals that relocating the easement west as proposed by the current options will result in permanent wetlands impacts of 8.5 acres filled for an “All Bridge” option, and between 67.5 and 79.4 acres for a relocated roadway. SDEIS at 4-58, FEIS at 2-73. The workshop handout does not explain this discrepancy. It may stem from the fact that “Phase II” of this option entails temporarily linking the relocated corridor back to existing NC 12 just north of the new Refuge Inlet. However, given that this alignment is admitted to be temporary and will inevitably be replaced by a new

⁵ Kozak, “NCDOT Presents Options for Long-Term Highway 12 Repair to the Public,” Island Free Press (Dec. 7, 2011).

corridor that extends through the entire length of the Refuge, the true impacts of this option and their implications for the viability of this option must be disclosed to the public. To withhold those impacts until the remainder of the corridor is relocated is another instance of illegal segmentation.

In fact, neither of these options stands any chance of being constructed. Because of their massive impacts on jurisdictional wetlands and other Refuge wildlife habitat described above, these relocation options cannot be approved by FWS or the Army Corps. First, in order to be constructed, NCDOT would have to obtain a new easement for each of these options. FWS could not grant such an easement, however, because these options are manifestly incompatible with the mission and purpose of the Refuge. The huge footprint of a new road or bridge through the length of the Refuge, including cutting through vital waterfowl impoundments, would clearly degrade the ecological integrity of the Refuge as a wildlife habitat and therefore must be found to be an incompatible use.

In addition, there is no viable compensatory wetlands mitigation within the Refuge to offset these impacts. Even if FWS were willing to accept NCDOT’s abandonment of its existing easement as partial mitigation – which is unlikely, especially since on information and belief NCDOT plans to undertake no pavement removal or restoration work in the Refuge – the new route would use more acres of the Refuge than the existing easement and thus would require additional mitigation that simply does not exist. See EA at 2-24. Mitigation would also be required for the degraded state of the abandoned easement. DOI has reminded NCDOT that “mitigation cannot be used to make an otherwise incompatible proposed use compatible with the mission and purpose directives.” FEIS 8-70.

For similar reasons, the Army Corps could not issue a § 404 permit for the massive amount of wetlands fill that these options would necessitate. The existence of other proposed options that would be less harmful to jurisdictional wetlands, in addition to the even less intrusive long Pamlico Sound Bridge or ferry options, preclude the issuance of a § 404 permit for these options.

D. Problems with Bridge in Pamlico Sound Near Rodanthe

The proposed bridge from Rodanthe through the Pamlico Sound was originally proposed as part of the “Road North/Bridge South” and “All Bridge” alternatives. Because it now could also be combined with one of the other proposed options, we discuss it separately from the relocation options covered in the previous section.

No matter which other option the proposed bridge would be linked to, a Rodanthe area bridge would require a new easement through two acres of estuarine emergent wetland areas in the Refuge in order to rejoin the existing NC 12 corridor; such a new easement would likely be denied as incompatible for the reasons given above. Here too,

on-site compensatory mitigation would be impossible because there are no equivalent wetlands NCDOT could restore. For all these reasons, the NCDOT Handout concedes that this option is "[n]ot likely to be found compatible with the Refuge's mission and purpose," and thus it could not be constructed. (Handout at 10).

In addition, the proposed bridge would travel through areas of known submerged aquatic vegetation (SAV), which are also classed as EFH because they provide refuge from predators and foraging areas for juvenile and adult fish. As discussed above, the Magnuson-Stevens Act requires consultation with the Secretary of Commerce before any action is taken that might adversely affect EFH. In this case, the proposed bridge would fill approximately 1.4 acres of SAV (see FEIS at 4-88) and shade 5.3 acres of SAV (Handout at 10).

The bridge would also require a § 404 permit from the Army Corps of Engineers for discharge and fill in jurisdictional waters. Such discharges are not permitted if a practicable alternative exists that would have a lesser adverse impact on the aquatic ecosystem. 40 C.F.R. § 230.10(a)(2). As discussed earlier, the in-corridor Rodanthe bridge, as well as a long Pamlico Sound Bridge or a ferry system, would offer practicable alternatives with lesser adverse impact.

The Rodanthe terminus of this bridge would apparently be in the same location as the Rodanthe Bridge Within Existing NC 12 Easement. As discussed above, NCDOT has acknowledged potential problems with the terminus of the latter option being located seaward of the projected 2060 shoreline. The same problem is likely to affect the Bridge on New Location option, raising its costs and increasing its environmental impact as a result.

Lastly, the proposed bridge would be quite expensive to construct due to the shallow water in the proposed bridge corridor. The water depth is less than six feet for virtually all of the bridge length. NCDOT is prohibited from dredging in SAV areas in order to use barges to construct the bridge, so instead a temporary work bridge would have to be constructed and the proposed bridge built off of that. (FEIS 4-90, 4-177). This is a much more expensive construction method than conventional barge-based bridge construction and likely means the estimates provided in the handout are artificially low.

E. Seven-Mile Bridge in Pamlico Sound Bypassing Rodanthe Breach and Refuge Inlet

Although it was not included in NCDOT Handout or other materials distributed at the public meetings, we understand that NCDOT is also considering a seven-or-more-mile long bridge to bypass the southern half or even two thirds of the Refuge in the Pamlico Sound as yet another alternative for Phase II. We have marked our understanding of the general path of such a bridge in magenta on the attached map.

Because this alternative has not been explained by NCDOT nor evaluated during the NEPA process, it is difficult to comment thoroughly on it. Generally, it represents a step in the right direction insofar as it would remove the transportation corridor from the most unstable portion of Hatteras Island and would eliminate the need for the much of the nourishment, construction, maintenance, and other activities that would constitute use of the Refuge under the Refuge Act. Once the details of this alternative are revealed, however, there may well be problems to be addressed, such as the use of the Refuge land where the northern end of the bridge makes landfall on the Refuge, the maintenance of the remaining miles of NC 12 (especially in the future inlet locations identified by government scientists), impacts on submerged aquatic vegetation on the sound side of the Refuge, harm to EFH, and impacts to wetlands, among other things.

The consideration of this medium-length bridge alternative again raises the issue of cost: if NCDOT has the funding necessary to build both the 2.5- to 3.2-mile Phase I bridge over Oregon Inlet as well as a seven-or-more mile bridge to bypass both the Rodanthe Breach and the Refuge Inlet, why should that money not be spent to build the less environmentally damaging Pamlico Sound Bridge alternative? Such a bridge would bypass the entire Refuge, eliminate impacts to the Refuge, eliminate the need for the Later Phases of the current Selected Alternative, and result in a safe and reliable route predicted to last 100 years.

III. NCDOT Must Reconsider Off-Island Options

As discussed above, the ostensible justification for rejecting a long Pamlico Sound Bridge – its cost – has been disproven. At Governor Perdue's request, NCDOT has accelerated its timetable to try to provide a long-term solution to the breaches caused by Hurricane Irene. As a result, NCDOT now proposes to construct Phase I and Phase II of the Bonner Bridge replacement at once, with three major components, incurring costs that will surely be comparable to the likely contract price of the Pamlico Sound Bridge. Accordingly, that option must now be reconsidered by the Merger Team as the least environmentally damaging alternative, or "LEDPA," and as a feasible and prudent avoidance alternative under § 4(f), because it would cause significantly less environmental harm and would provide a much more stable long-term solution to the current transportation crisis on Hatteras Island.

In addition, however, it is time for NCDOT and the rest of the Merger Team to give serious consideration to a system of modern, high-speed ferries that would link the Hatteras communities to Bodie Island and the mainland. Ferry technology has come a long way since the ferry option was studied in 1991 and dismissed in the 1993 DEIS. For example, quadrimaran ferries already in use elsewhere appear to offer the combination of high speed, extremely shallow draft, and low wake that could meet the needs of transportation across Pamlico Sound. See, e.g., William A. Hockberger, "Quadrimaran

Ferries: High Speed with Shallow Draft," 2033 Transportation Research Record: Journal of the Transportation Research Board at 1-7 (2007).

Privatizing a ferry system for Hatteras Island would introduce competition and multiple route options while allowing the private sector to bear the costs of expensive new ferry technologies. Spreading the transportation burden among multiple routes (and possibly among multiple carriers) would help address the objection that a ferry system could not match the carrying capacity of the Bonner Bridge, since each route would only need to carry a fraction of the total demand by taking passengers directly to their final destination in Rodanthe, Cape Hatteras, Bodie Island, etc.

Finally, ferry terminals located in currently isolated mainland towns like Stumpy Point could have a tremendous positive economic impact on these communities. Ferries would create permanent jobs on the Outer Banks and the mainland while also supporting the creation of other local businesses to serve ferry passengers.

NCDOT's previous response to comments regarding ferries has indicated a resistance to meaningfully considering this option. For example, in its response to comments on the 2010 EA, NCDOT stated that other island communities served exclusively by ferries are "not in any way equivalent" in part because they have been "accessed by boat, ferry or plane for their entire modern histories." (ROD at C-53.) This is not a meaningful reason to refuse to study modern ferry options for Hatteras Island. NCDOT also argued that these other communities have lower permanent and seasonal populations than Hatteras Island, but again, dividing the transportation load currently carried by the Bonner Bridge among multiple ferry routes to key locations on Hatteras Island would alleviate any capacity issues.

One point made in our comments on the EA bears repeating in light of Hurricane Irene: ferry systems provide a much more reliable and resilient transportation option after a major storm. While the Hatteras communities were cut off for over six weeks after Hurricane Irene breached NC 12, ferry service to Ocracoke Island was up and running within days. Hatteras residents and businesses suffered a major economic loss as a result of NCDOT's dependence on the vulnerable stretch of NC 12 through the Refuge. In contrast, an updated ferry system would provide a much quicker recovery from hurricanes during tourist season.

In short, rather than finding reasons to reject ferries out of hand, NCDOT should study this option seriously, investigating other public and private ferry systems in the United States and internationally to determine whether such an option is practicable. NCDOT claimed in its response to comments on the EA that the FEIS provided an adequate discussion of the ferry option, but that discussion, like discussions in previous NEPA documents, appears merely to summarize and repeat assumptions made in a 1991 feasibility study. Given the lack of viable options among those it is currently proposing

for Phase II, NCDOT can no longer afford to dismiss this alternative using out-of-date assumptions, data, and reasoning.

Conclusion

The Merger Team must revisit the entire Bonner Bridge replacement project. The Selected Alternative has proven inadequate because NCDOT has not developed any viable options for NC 12 and has instead been forced to rely upon old options already rejected by the Merger Team. Storm damage and erosion will only continue to reveal the shortcomings of this piecemeal approach. These realities have forced NCDOT to find funding to pursue three simultaneous components of its proposed transportation corridor, but the cumulative costs of these components are without question comparable to other alternatives, including the likely contract price of a long Pamlico Sound Bridge.

A safe and secure Pamlico Sound Bridge, predicted to last 100 years, and/or an updated ferry system, are surely a better use of the money than a series of precarious bridges and roads predicted to last only 50 years and to be beset by erosion and storm damage throughout their useful life. Thus, the Merger Team must reconsider off-island alternatives – including a Pamlico Sound Bridge and ferries – in light of the immense challenges and true costs of maintaining a long-term NC 12 corridor through the Refuge. These options are practicable, feasible, and prudent alternatives that will be far more stable and less environmentally damaging than the options presented to the public in the current Phase II process.

Sincerely,



Julie Youngman
Senior Attorney
Southern Environmental Law Center

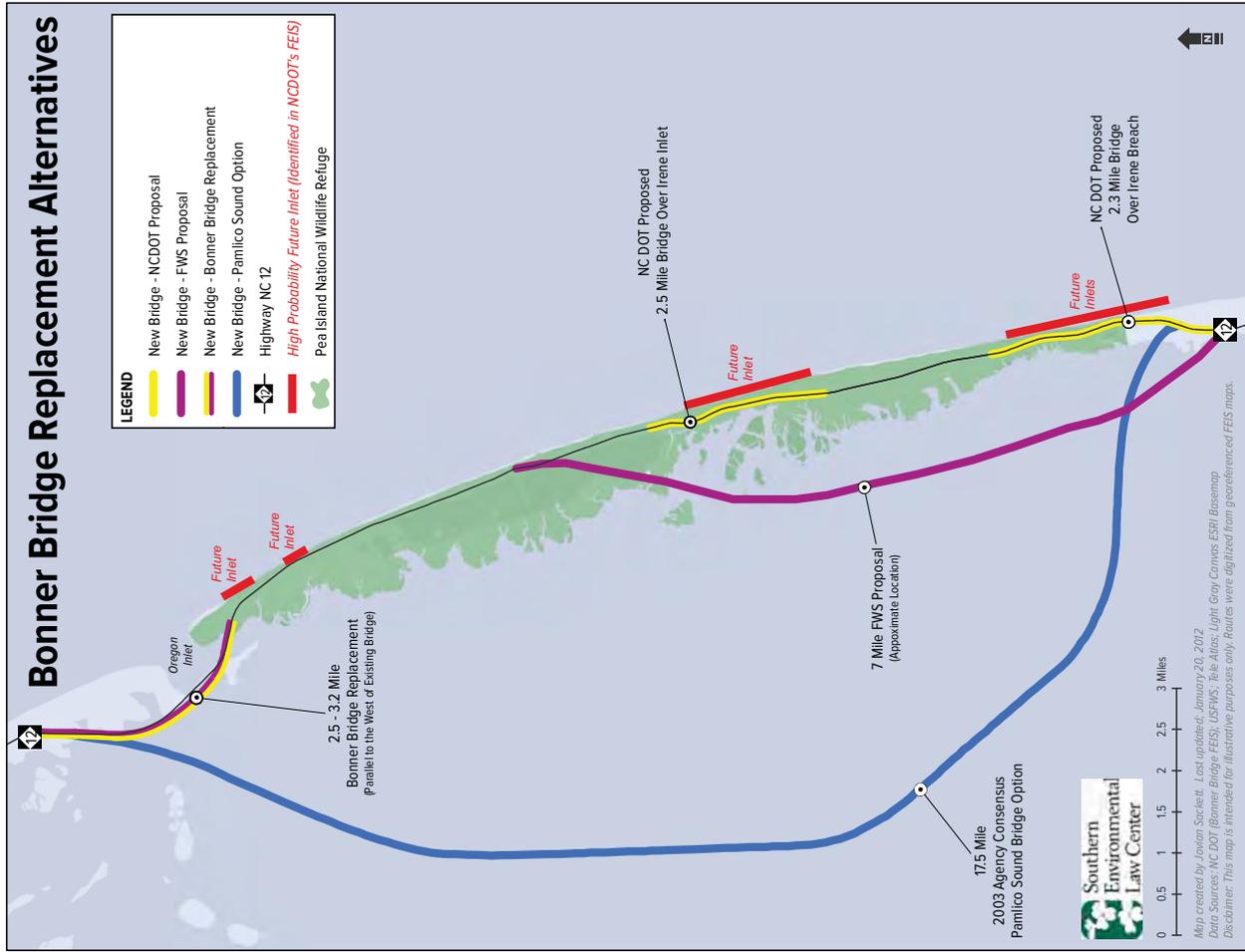
Jason Rylander
Senior Staff Attorney
Defenders of Wildlife

Robert Morgan
General Counsel
National Wildlife Refuge Association

Attachment

Ms. Beth Smyre, P.E.
 January 20, 2012
 Page 25

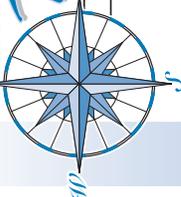
cc (by e-mail only, with attachment):
 Dr. Gregory Thorpe, Ph.D., NCDOT
 John Sullivan, FHWA
 Clarence Coleman, FHWA
 Stacey Bosshardt, Esq., USDOJ, attorney for FHWA
 Thomas H. Henry, Esq., NCDOT, attorney for NCDOT



Bonner Bridge Update

TIP Project No. B-2500

Dare County, North Carolina



ENVIRONMENTAL ASSESSMENT FOR PERMANENT BRIDGE OVER NEW PEA ISLAND INLET AVAILABLE FOR REVIEW

The North Carolina Department of Transportation (NCDOT) has released an Environmental Assessment (EA) for public comment for Phase IIa (Pea Island inlet) of the Bonner Bridge Replacement Project. The Bonner Bridge Replacement Project includes both a new bridge over Oregon Inlet (Phase I) and future phases that provide for the long-term maintenance of NC 12 from Oregon Inlet to Rodanthe. Phase IIa of the project is the long-term solution for the section of NC 12 at the Pea Island inlet, which formed as a result of Hurricane Irene in 2011.

The EA identifies the Bridge within Existing NC 12 Easement Alternative as the Preferred Alternative for Phase IIa. The Preferred Alternative is shown on the figure on the next page. The EA also describes the changes in the environment since the release of the 2010 Record of Decision (ROD), in particular the formation of the new Pea Island inlet. As described in the EA, the Preferred Alternative for Phase IIa would include the following characteristics:

- An approximately 2.1-mile-long bridge within the existing NC 12 easement to replace the existing surface road and the temporary bridge over the Pea Island inlet.
- Designed to account for the potential expansion and migration of the current inlet in the future, as well as potential future breaches in the area (see figure on next page).
- Constructed on the ocean side of the NC 12 easement except in the area of the temporary bridge, where it would be on the sound side, due to the location of the existing temporary bridge.
- Traffic would be maintained on NC 12 throughout construction of the permanent bridge.

PUBLIC HEARINGS SCHEDULED

Locations and times of the public hearings scheduled for March 11, 12, and 13, 2013 are listed to the left on the Bulletin Board. The purpose of the hearings is to give citizens the opportunity to express their opinions about the Phase IIa alternative and design under consideration. The hearings will be informal, with the public welcome to drop in any time between 4:00 PM and 7:00 PM. Study team members will be available to explain the alternative and design under consideration and answer questions. The same information will be available at all three meetings.

NCDOT will provide auxiliary aids and services under the Americans with Disabilities Act for disabled persons who wish to participate in these hearings. Anyone requiring special services should contact the study team.

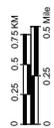
Bulletin Board PHASE IIa PUBLIC HEARINGS

- March 11, 2013**
MANTEO
 Dare County
 Administration Building
 954 Marshall Collins Drive
 Manteo, NC
 4:00 pm - 7:00 pm
- March 12, 2013**
RODANTHE
 Rodanthe-Waves-Salvo
 Community Center
 23166 Myra Peters Road
 Rodanthe, NC
 4:00 pm - 7:00 pm
- March 13, 2013**
OCRACOKE
 Ocracoke Community Center
 1009 Irvin Garrish Highway
 Ocracoke, NC
 4:00 pm - 7:00 pm

Bonner Bridge Update

BRIDGE WITHIN EXISTING NC 12 EASEMENT ALTERNATIVE

Aerial date: October 21, 2011



WHAT HAPPENS NEXT

After reviewing comments from citizens, local government, and state and federal regulatory and resource agencies, NCDOT and the Federal Highway Administration (FHWA) will determine if the proposed Phase IIa project results in any significant new impacts beyond those taken into consideration in the 2010 ROD and if a Supplemental Final Environmental Impact Statement (SFES) is necessary. If a



North Carolina Department of Transportation
 Project Development and Environmental Analysis Unit

Attention: Beth Smyre

1548 Mail Service Center
 Raleigh, North Carolina 27699-1548

(continued from above)

SFES is not needed, a ROD will be issued in the spring of 2013 and permit applications will be submitted to regulatory agencies. NCDOT plans to award a construction contract as early as the summer of 2013. An EA assessing alternatives for a long-term solution to NC 12 overwash in the Rodanthe area (Phase IIb) is expected to be released in the summer of 2013.

Feel Free to Contact the Study Team

If you have any questions or wish to be added to our newsletter mailing list, please call John Page on our Toll-Free Project Information Line, 1-866-803-0529. You may also write the study team at:

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EA Review Locations

The EA and maps of the Preferred Alternative design are available for public review at the following locations:

- Dare County, North Carolina
 library locations in Hatteras
 Village, Kill Devil Hills, and Manteo
- NCDOT Resident Engineer's Office
 349 Water Plant Road, Unit B
 Manteo, NC
- Fessenden Recreation Center in
 Buxton, NC
- Ocracoke School & Community Library
 225 Back Road, Ocracoke, NC
- Dare County Planning and Inspections Satellite Office
 49815 NC Highway 12, Buxton, NC

The EA and maps also are posted for online review on NCDOT's website at <http://www.ncdot.gov/projects/bonnerbridgephase2/>



WELCOME to the NC 12 – Pea Island Long- Term Improvements (Bonner Bridge – Phase IIa) Public Hearings

March 11, 2013

4:00 p.m. to 7:00 p.m.

Dare County Administration Building
954 Marshall Collins Drive, Manteo

March 12, 2013

4:00 p.m. to 7:00 p.m.

Rodanthe-Waves-Salvo Community Center
23186 Myrna Peters Road, Rodanthe

March 13, 2013

4:00 p.m. to 7:00 p.m.

Ocracoke Community Center
1009 Irvin Garrish Highway, Ocracoke

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PURPOSE OF PUBLIC HEARING

Today's public hearing is an important step in the North Carolina Department of Transportation's (NCDOT) procedure for making you, the public, a part of the project development process. The purpose of the public hearing is to obtain public input on long-term improvements to NC 12 within the Pea Island National Wildlife Refuge (Phase IIa) of the Bonner Bridge Replacement Project. NCDOT is holding three public hearings. The same information will be available at all of the hearings.

Hurricane Irene hit the North Carolina coast on August 27, 2011 and breached NC 12 in two locations – northern Rodanthe and within the Pea Island National Wildlife Refuge (Refuge). NCDOT completed temporary repairs at the two breach sites and reopened NC 12 to traffic on October 10, 2011. With traffic restored to the area, NCDOT has been working on long-term solutions for these two sites. The long-term solution at the Pea Island inlet site in the Refuge (where the temporary bridge is today) is considered Phase IIa of the Bonner Bridge Replacement Project.

NCDOT released an Environmental Assessment (EA), which documents the planning and environmental studies for this project, for public comment for Phase IIa in February 2013. The 2013 EA identifies the Bridge within Existing NC 12 Easement Alternative as the Preferred Alternative for Phase IIa. The 2013 EA also describes the changes in the environmental setting since the release of the 2010 Record of Decision (ROD) for the Bonner Bridge Replacement Project, in particular the formation of the new Pea Island Inlet.

The 2013 EA and maps displaying the location and design of the Preferred Alternative are available for public review at the following locations:

- Dare County Libraries in Manteo at 700 N. Hwy 64/264, in Hatteras at 57709 NC Hwy 12, and in Kill Devil Hills at 400 Mustian Street
- Fessenden Recreation Center, 46830 NC Hwy 12, Buxton, NC
- Dare County Planning and Inspections Satellite Office, 49815 NC Hwy 12, Buxton, NC
- NCDOT Resident Engineer's Office, 349 Water Plant Road, Unit B, Manteo, NC
- Ocracoke School and Community Library, 225 Back Road, Ocracoke, NC

Project maps, documents, and related project information are also available online at: <http://www.ncdot.gov/projects/bonnerbridgephase2/>.

YOUR PARTICIPATION

Today's public hearing is intended to provide you with an opportunity to learn more about Phase IIa, as well as to make comments on what you see today and on the findings presented in the 2013 EA. The public hearing will be informal, with the public welcome to drop in at any time during the scheduled hours to view displays of the proposed Phase IIa Preferred Alternative. Study team members will be available to explain and answer questions about the alternative and design under consideration, as well as its environmental impacts.

You are encouraged to share your ideas, thoughts, and suggestions with study team members at today's public hearing. You also are encouraged to participate in the project development process by making your comments and/or questions a part of the public record. This may be done in several ways:

- You may write them on the comment sheet attached to this handout and leave them with a project team member or in the comment box.
- You may record verbal comments during the hearing that will be transcribed following the hearing. A recording device is available; please ask a project team member if you are interested.
- You may mail/e-mail/fax your comments by March 28, 2013 to the following address:

Mr. Drew Joyner
NCDOT – Human Environment Section
1588 Mail Service Center
Raleigh, NC 27699-1598
Email: djoyner@ncdot.gov
Phone: (919) 707-6077
Fax: (919) 212-5785

WHAT IS DONE WITH THE INPUT?

After the comment period ends on March 28, 2013, all comments will be reviewed by the NCDOT project team. A post-hearing meeting will be held among that team, which includes planners, engineers, right-of-way agents, and other professionals from a variety of transportation specialties who play a role in the project development process. Other agencies, such as the Federal Highway Administration (FHWA), the US Army Corps of Engineers (USACE), and the NC Department of Environment and Natural Resources will participate, as well as local government representatives.

All written and recorded verbal requests and comments will be discussed at the post-hearing meeting. Most issues will be resolved at that time. NCDOT considers safety, costs, traffic service, social, environmental and property impacts, and public comments in making decisions. Complex issues may require additional study and may be reviewed by higher management, Board of Transportation Members and/or the Secretary of Transportation.

Minutes of the post-hearing meeting will be prepared and a summary will be available to the public. You may request this document on the attached comment sheet.

WHAT HAPPENS NEXT?

- After reviewing comments from citizens, local government, and state and federal regulatory and resource agencies, NCDOT and FHWA will determine if there are any significant new impacts since the issuance of the 2010 Record of Decision (ROD) and if a Supplemental Final Environmental Impact Statement (SFEIS) for Phase IIa is necessary. If so, the SFEIS will be completed.

- If a SFEIS is not needed, a ROD for Phase IIa will be issued in the spring of 2013. NCDOT will apply for the permits required for construction. A contract for construction of Phase IIa will be awarded as early as the summer of 2013. Construction of Phase IIa will begin once all permits are received.

- NCDOT will continue the current comprehensive coastal monitoring program of NC 12 between Oregon Inlet and Rodanthe that started in early 2011. This program will be used to help decide what the long-term solution for future phases of the Bonner Bridge Replacement Project should be and when they should be implemented.

- NCDOT and FHWA expect to release an EA for the long-term improvements of NC 12 at Rodanthe (Phase IIb) for public comment in the summer of 2013. This document will analyze the impacts of the options currently proposed for the Rodanthe site. Two options are under consideration, the Bridge within Existing NC 12 Easement and the Bridge on New Location. Additional public hearings for the long-term improvements at Rodanthe will be scheduled following release of the EA.

PROJECT DESCRIPTION

NCDOT is proposing to implement a long-term solution for the portion of NC 12 around the Pea Island inlet, which was formed during Hurricane Irene in August 2011. The Preferred Alternative for this section of NC 12, the Bridge within Existing NC 12 Easement Alternative, would include the following characteristics:

- An approximately 2.1-mile-long bridge would be constructed within the existing NC 12 easement to replace the existing surface road and the temporary bridge over the Pea Island inlet.
- The project would be designed to account for the potential expansion and migration of the current inlet in the future, as well as to bridge the entire area considered susceptible to breaches in the Pea Island inlet area.
- The new bridge would be constructed on the ocean side of the NC 12 easement except in the area of the temporary bridge, where it would be on the sound side, because of the location of the existing temporary bridge.
- Traffic would be maintained on NC 12 throughout construction of the permanent bridge.

The location of the Preferred Alternative is shown on Figure 1 on the next page. Detailed drawings are being presented at today's public hearing.

The long-term improvement at the Pea Island inlet is Phase IIa of the Bonner Bridge Replacement Project, which includes the replacement of the Herbert C. Bonner Bridge (Bonner Bridge) in Dare County, the demolition and removal of the existing Bonner Bridge, and improvements to NC 12 between the community of Rodanthe and Oregon Inlet.

FHWA and NCDOT issued the decision document for the Bonner Bridge Replacement Project, which is called a Record of Decision (ROD), on December 20, 2010. It selected the Parallel Bridge Corridor with NC 12 Transportation Management Plan as the alternative for the project. This alternative includes:

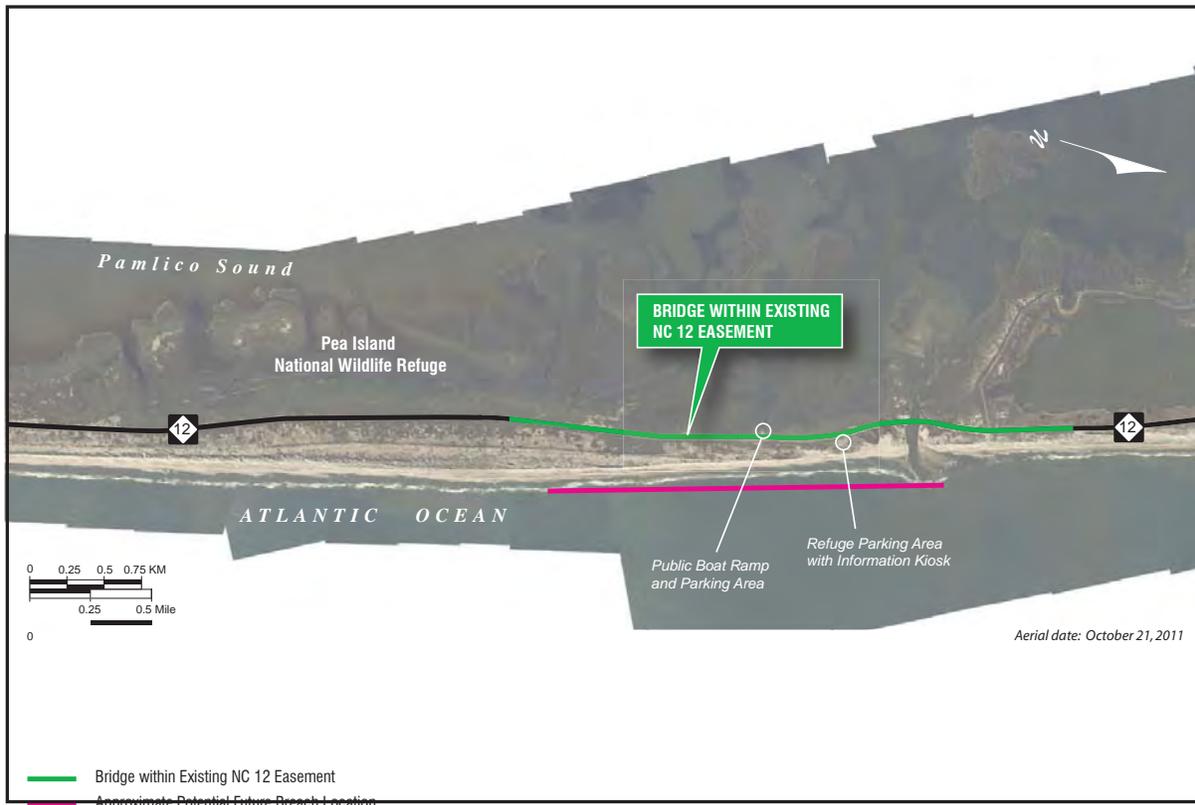
- Construction of a new parallel bridge ("short bridge") across Oregon Inlet as soon as possible (Phase I of the project); and
- The implementation of a coastal monitoring program on Hatteras Island between Oregon Inlet and Rodanthe to determine when and what to build for future phases of the project.

Phases I and II of the NC 12 Transportation Management Plan are illustrated in Figure 2 on the next page. The coastal monitoring program began in 2011 and will continue during the planning and implementation of Phase II to determine the areas that later phases of the project should address.

WHAT OTHER ALTERNATIVES WERE UNDER CONSIDERATION?

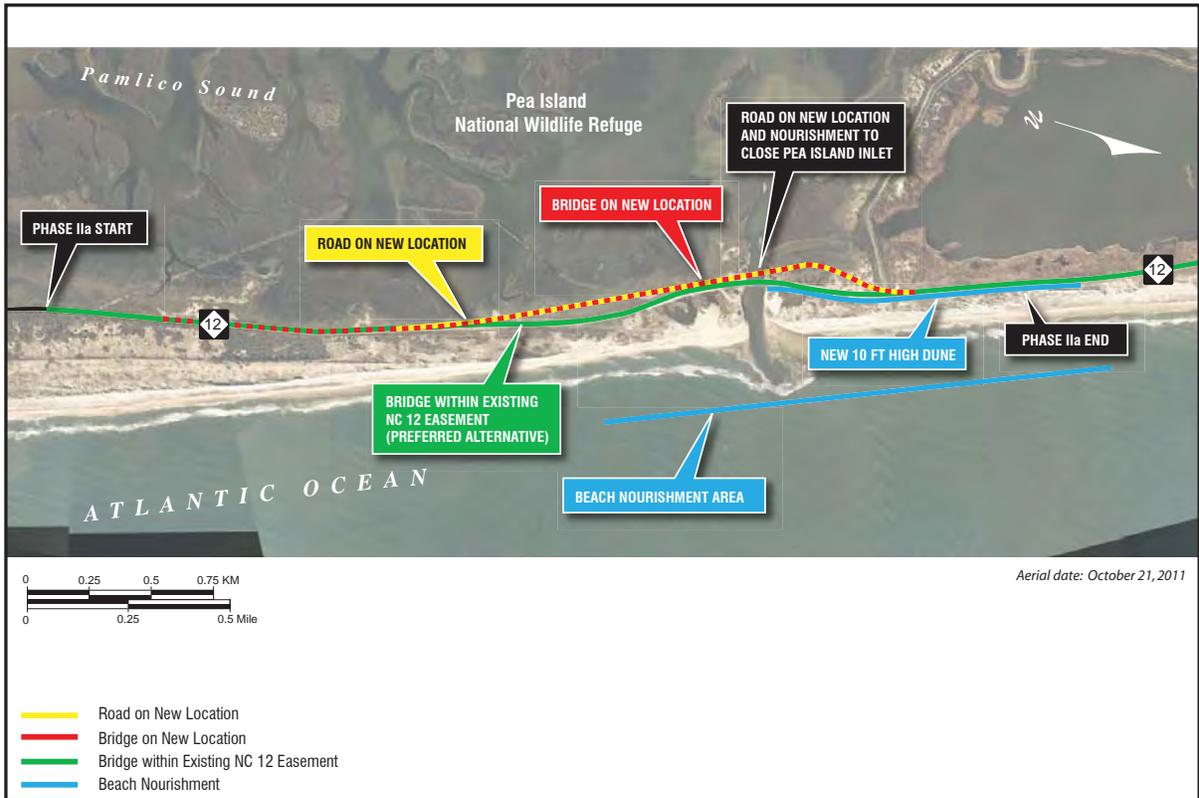
Under the Parallel Bridge Corridor with NC 12 Transportation Management Plan, the alternatives that were studied in the 2008 Final Environmental Impact Statement (FEIS) and the 2010 EA for the section of NC 12 between Oregon Inlet and Rodanthe may be used in future sections of the project. These alternatives were presented to the public as part of the Parallel Bridge Corridor at public hearings in November 2005, March 2007, and July 2010. Based on these original Parallel Bridge Corridor alternatives, four alternatives were considered in the 2013 EA during the selection of the Preferred Alternative for long-term improvements in the Phase I/a Pea Island inlet study area. These alternatives (see Figure 3 on page 7) were presented at the Phase II workshops in December 2011 and January 2012 and are described below:

- Beach Nourishment – NC 12 would remain in its current location and beach nourishment (combined with dune enhancement) would be used to maintain an adequate protective beach and dune system. Nourishment would likely be repeated at four-year intervals. This alternative was eliminated because of uncertainties related to the availability of a suitable sand source; it would necessitate the closure of the Pea Island inlet by NCDOT; it would not adequately protect NC 12 from the formation of potential future breaches/inlets; it would not allow natural island movement to occur; and it is not likely to be found compatible with the Refuge's mission and purpose.
- Road on New Location (part of Road North/Bridge South Alternative in the 2008 FEIS) – NC 12 would be relocated as a road west of the forecast 2060 high-erosion shoreline within the Phase I/a study area. This alternative was eliminated because it would necessitate the closure of the Pea Island inlet; it would not adequately protect NC 12 from the formation of potential future breaches/inlets; and it is not likely to be found to be compatible with the Refuge's mission and purpose.
- Bridge on New Location (part of All Bridge Alternative in the 2008 FEIS) – NC 12 would be relocated onto a bridge west of the forecast 2060 high-erosion shoreline within the Phase I/a study area. This alternative was eliminated because it is not



BRIDGE WITHIN EXISTING NC 12 EASEMENT ALTERNATIVE

Figure 1



ALTERNATIVES CONSIDERED

Figure 3

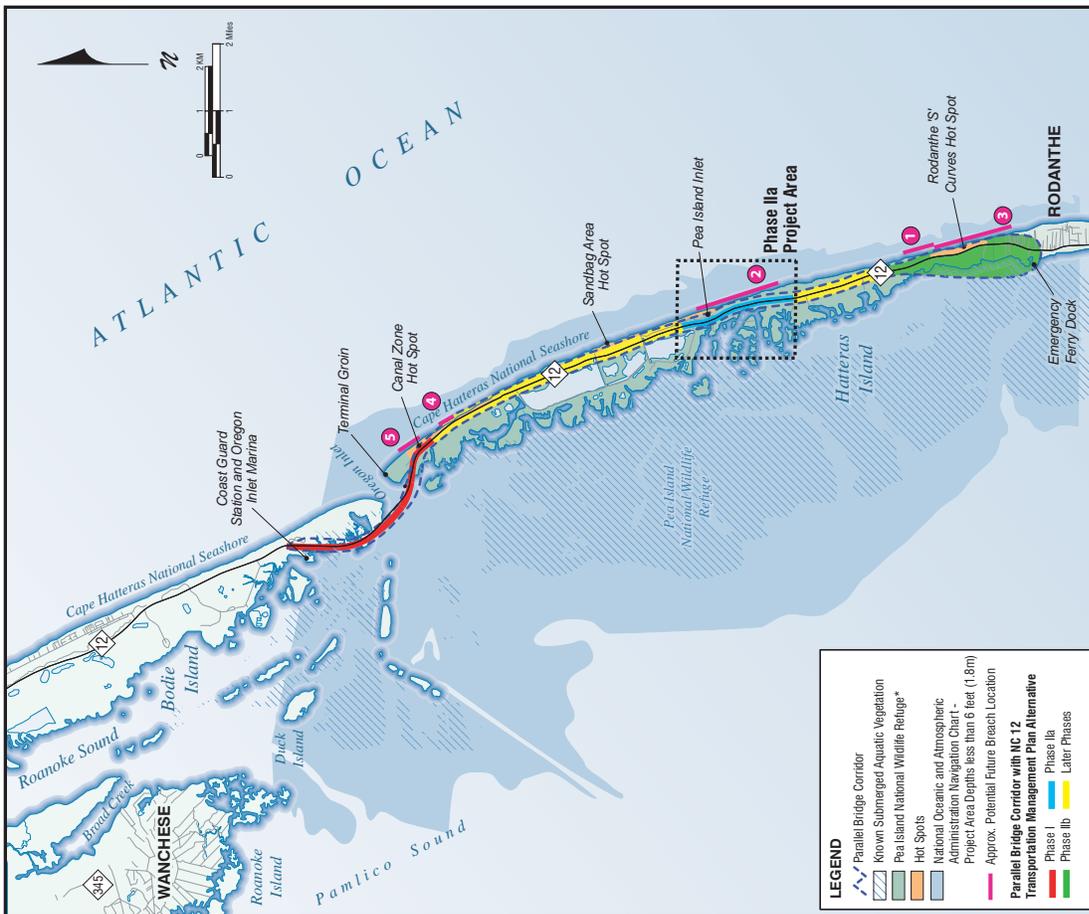


Figure 2

**PARALLEL BRIDGE CORRIDOR WITH NC 12
TRANSPORTATION MANAGEMENT PLAN ALTERNATIVE**

likely to be found to be compatible with the Refuge's mission and purpose, and it would impact an historic resource – the southern dike around a Refuge pond.

- Bridge within Existing NC 12 Easement (Preferred) (Phase III of Phased Approach Alternatives in the 2008 FEIS) – NC 12 would be elevated in its current easement within the Phase IIa study area. The reasons that NCDOT has selected this as the Phase IIa Preferred Alternative include: it would be designed to account for the potential future expansion and migration of the Pea Island inlet; it would bridge the entire area considered geologically susceptible to breaches in the Pea Island inlet area (see Figure 1 on page 4); it would not be affected by future shoreline erosion; it would bridge wetlands in the area; it would have fewer adverse impacts than the other alternatives that were considered for this phase; and, being within the existing NC 12 easement, a compatibility determination by the Refuge would not be required.

PROJECT COSTS, FUNDING, AND SCHEDULE

Based on the proposed final design, the construction cost estimate for Phase IIa is \$98 million (2012 dollars), including removal of the temporary bridge. No right-of-way cost is expected with the Phase IIa Preferred Alternative, as it is located entirely within federal lands and the existing NC 12 easement.

Phase IIa primarily would be funded through existing federal and state funding sources available to transportation projects and allocated to NCDOT Division 1 in the State Transportation Improvement Program (STIP). The proposed project is a Federal-Aid Highway Project and will be constructed under the State-Federal Aid Highway Program. Financing for these types of projects typically consists of 80 percent Federal funds and 20 percent State funds provided through the North Carolina Highway Trust Fund. However, FHWA has advised NCDOT that a portion of the cost of Phase II (including Phase IIa and Phase IIb) may be eligible for reimbursement under federal Emergency Relief (ER) funding. The amount of ER funding available for Phase II will depend upon the scope of the long-term solution as compared to the original storm-related damage. FHWA currently estimates that 34 percent of the long-term solution at the Pea Island inlet site (Phase IIa) will be eligible for ER funding. NCDOT is responsible for the selection and scheduling of projects on the Federal-Aid System, including their location, design and maintenance cost after construction. FHWA is responsible for the review and approval of the previously mentioned activities to ensure that each Federal-Aid Project is designed, constructed, and maintained to Federal-Aid Standards.

Final design for Phase IIa has been completed and permit application materials have been prepared. A contract will be awarded for construction of the new bridge after the Phase IIa ROD is issued. Phases I (Bonner Bridge Replacement), IIa (Pea Island inlet) and IIb (Rodanthe breach) have all been allocated funding in the current (2012 to 2018) STIP. Therefore, the construction of Phase I should proceed as soon as all permits are received, and Phase IIa would be implemented as soon as possible to qualify for ER funding. Phase IIa construction is anticipated to last from 3 to 3.5 years, including removal of the temporary bridge.

PROJECT IMPACTS

The Preferred Alternative would have the following impacts in the Phase IIa project area:

- Visual Impacts – The Preferred Alternative would be a new linear man-made feature that would represent a sizeable intrusion into the landscape of the Refuge. The top of the bridge deck would be approximately 20 feet above the ground, or 25 feet above the mean high water line. The bridge would be approximately seven feet higher over the inlet in order to allow traffic to be maintained on the existing temporary bridge during construction. The visual impact of the bridge would present a stark contrast with the natural character of the Refuge, which is also a historic site. The new bridge would have an adverse effect on the historic landscape of the Refuge.
- Parks and Recreation Impacts – The Preferred Alternative would have the following parks and recreation impacts:
 - Permanent impacts to 1.47 acres of land within the existing NC 12 easement due to the placement of roadway fill material and bridge piles.
 - Temporary impacts to 3.84 acres of Refuge land outside the existing easement as a result of temporary construction easements, but this land would be restored after construction is completed, if required as a part of a Refuge Special Use Permit.
 - Motor vehicle access would be lost to the public boat ramp and the public parking lot near Pea Island inlet. Both would be removed.
 - As the beach erodes as a part of natural coastal processes, the Preferred Alternative bridge would be located first over the beach and then in the ocean. As a result, several recreational activities that occur on Hatteras Island, including fishing, hiking, surfing, wind surfing, kite boarding, swimming, ocean kayaking, and birding, would be affected by the presence of the bridge.
- Natural Resource Impacts – The Preferred Alternative would have the following natural resource impacts:
 - The bridge over the Pea Island inlet would be a potential source of pollutants to the inlet and adjacent waters; a stormwater management plan will minimize these impacts.
 - Permanent impacts to approximately 12.36 acres of biotic communities, including 1.46 acres from fill and pile and 10.90 acres from shading.
 - Temporary impacts to 3.84 acres of biotic communities outside the existing NC 12 easement from construction related activities. However, because the alignment occurs within the existing NC 12 easement, most of the impacts would occur within upland, previously disturbed/maintained areas.
 - Permanent impacts to 0.01 acre of wetlands and 0.04 acre of open waters.

- Temporary impacts to 1.12 acres of wetlands and 0.28 acre of open waters. There also would be 0.42 acre of hand clearing in wetlands for the project.
- The newly formed Pea Island inlet area provides potential new nesting habitat for piping plovers, a protected species. The area previously only included foraging habitat. The location of some bridge piles, as well as shading associated with the bridge deck, may impact this habitat. However, as shoreline erosion progresses, this habitat is eventually expected to be outside the bridge area. The new bridge would use less than one acre of habitat for this species. Some temporary impacts would come from lights, noise, and vibration associated with construction.
- The project is likely to disturb nesting on the beach by the leatherback, green, and loggerhead sea turtles. However, it is not likely to adversely affect sea turtles in the water. Although the new Pea Island inlet presents a potential new passage for sea turtles to travel between the ocean and Pamlico Sound, there has yet to be any documented use of the inlet by sea turtles. The potential affects to sea turtles in the water are temporary construction disturbance, highway runoff, and, once the bridge piles are in the ocean, predation on hatchlings by fish attracted to piling habitat.
- The project is not likely to adversely affect the following protected species: Roseate Tern, West Indian Manatee, Seabeach Amaranth, and two species of sturgeon.
- The Pea Island inlet is considered essential fish habitat. Approximately 0.05 acre of the inlet bottom would be permanently affected by bridge piles. Alteration of estuarine/marine waters, intertidal flats, and some estuarine emergent wetlands would result from shading 0.32 acre. Although some minor adverse impacts to essential fish habitat would occur during construction, the impacts would be temporary and minor.

PURPOSE AND NEED OF THE BONNER BRIDGE REPLACEMENT PROJECT

The purposes of the Bonner Bridge Replacement Project (which includes Phase IIa, the reason for today's hearing) are to:

- **Provide a new means of access from Bodie Island to Hatteras Island for its residents, businesses, services, and tourists prior to the end of Bonner Bridge's service life.**
Needs Addressed: Although Bonner Bridge is reaching the end of its service life, demand for convenient daily and emergency access across Oregon Inlet is expected to continue.
- **Provide a replacement crossing that takes into account natural channel migration expected through year 2050 and provides the flexibility to let the channel move.**

Needs Addressed: The natural channel or gorge through Oregon Inlet migrates. A replacement bridge needs to provide spans of sufficient height and width for navigation through the anticipated areas of future natural channel migration, thereby helping to reduce future dredging needs. Construction of the replacement crossing west of Oregon Inlet where less sand movement occurs also could help reduce future dredging needs.

- **Provide a replacement crossing that will not be endangered by shoreline movement through year 2050.**

Needs Addressed: The southern terminus of Bonner Bridge is north of portions of NC 12 threatened by shoreline erosion and overwash. Placing the southern terminus of a replacement bridge south of these areas, or including a long-term NC 12 maintenance and protection component, will reduce the need for frequency of maintenance of these threatened segments of NC 12. All the alternatives were ultimately developed for a service life through 2060.

CONSISTENCY WITH LOCAL LAND USE PLAN

The preferred alternative, the Parallel Bridge Corridor with NC 12 Transportation Management Plan Alternative, is consistent with the *Dare County Land Use Plan* and zoning.

RIGHT-OF-WAY ACQUISITION

Construction of Phase IIa of the project will not require the purchase of land from private property owners.

STATUS OF PHASE I (OREGON INLET BRIDGE)

A design-build contract for Phase I (the new Oregon Inlet bridge) was awarded in July 2011. The final design of the new bridge is nearly complete. Construction was scheduled to start in early 2013, pending the results of an ongoing lawsuit and the receipt of all necessary environmental permits. NCDOT expected to open the new bridge to traffic in 2015, with all remaining work (including the demolition of the current bridge) to be completed in 2016. More information about Phase I of the project is available at today's public hearing.

ADDITIONAL INFORMATION

As mentioned above, please leave comments in the comment box at the public hearing or send them to Mr. Joyner at the address on page 2. Additional information can be found on NCDOT's web sites and other social media resources listed below:

- Bonner Bridge Replacement Project Phase II Web Site – <http://www.ncdot.gov/projects/bonnerbridgephase2/>

TITLE VI PUBLIC INVOLVEMENT FORM

Completing this form is **completely** voluntary. You are not required to provide the information requested in order to participate in this meeting.

Meeting Type: Public Hearing	Date: 3/11/13, 3/12/13, 3/13/13
Location: Mantee/Rodanthe/Ocracoke	
TIP No.: B-2500A	
Project Description: NC 12: Pea Island Long-Term Improvements (Phase IIa)	

In accordance with Title VI of the Civil Rights Act of 1964 and related authorities, the North Carolina Department of Transportation (NCDOT) assures that no person(s) shall be excluded from participation in, denied the benefits of, or subjected to discrimination under any of the Department's programs, policies, or activities, based on their race, color, national origin, disability, age, income, or gender.

Completing this form helps meet our data collection and public involvement obligations under Title VI and NEPA, and will improve how we serve the public. Please place the completed form in the designated box on the sign-in table, hand it to an NCDOT official or mail it to the PDEA-Human Environment Section, 1598 Mail Service Center, Raleigh, NC 27699-1598.

All forms will remain on file at the NCDOT as part of the public record.

Zip Code: _____ Street Name: _____ <small>(i.e. Main Street)</small> Total Household Income: <input type="checkbox"/> Less than \$12,000 <input type="checkbox"/> \$47,000 – \$69,999 <input type="checkbox"/> \$12,000 – \$19,999 <input type="checkbox"/> \$70,000 – \$93,999 <input type="checkbox"/> \$20,000 – \$30,999 <input type="checkbox"/> \$94,000 – \$117,999 <input type="checkbox"/> \$31,000 – \$46,999 <input type="checkbox"/> \$118,000 or greater	Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female Age: <input type="checkbox"/> Less than 18 <input type="checkbox"/> 45-64 <input type="checkbox"/> 18-29 <input type="checkbox"/> 65 and older <input type="checkbox"/> 30-44 Have a Disability: <input type="checkbox"/> Yes <input type="checkbox"/> No
Race/Ethnicity: <input type="checkbox"/> White <input type="checkbox"/> Black/African American <input type="checkbox"/> Asian <input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Native Hawaiian/Pacific Islander <input type="checkbox"/> Hispanic/Latino <input type="checkbox"/> Other (please specify): _____	National Origin: (if born outside the U.S.) <input type="checkbox"/> Mexican <input type="checkbox"/> Central American: <input type="checkbox"/> South American: <input type="checkbox"/> Puerto Rican <input type="checkbox"/> Chinese <input type="checkbox"/> Vietnamese <input type="checkbox"/> Korean <input type="checkbox"/> Other (please specify): _____

How did you hear about this meeting? (newspaper advertisement, flyer, and/or mailing) _____

For more information regarding Title VI or this request, please contact the NCDOT Title VI Section at (919) 508-1808 or toll free at 1-800-522-0453, or by email at slipscomb@ncdot.gov.

Thank you for your participation!

- NC 12 Projects Web Site – <http://www.ncdot.gov/nc12/>. (Note that this web page includes links to information about Phases I and II of the Bonner Bridge Replacement Project.)
- NC 12 Recovery Web Site – www.ncdot.org/travel/nc12recovery
- NC 12 Twitter Feed – http://twitter.com/NCDOT_NC12
- Repairing NC 12 Blog – <http://nc12repairs.blogspot.com/>
- NC 12 Facebook Page – <https://www.facebook.com/NCDOT>

Additional information also can be obtained by calling John Page at the Project Information Line (toll-free): 1-866-803-0529.



COMMENT SHEET

**NC 12 – Pea Island Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIa)
Public Hearing
TIP No. B-2500A
Dare County**

NAME: _____

ADDRESS: _____

E-MAIL: _____

COMMENTS AND/OR QUESTIONS:

Comments may be mailed by March 28, 2013 to:

Mr. Drew Joyner
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598

Phone: (919) 707-6077 FAX: (919) 212-5785
Email: djoyner@ncdot.gov

**NCDOT - PDEA
Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598**



Welcome

NC 12: Pea Island Long-Term Improvements (B-2500A)

BONNER BRIDGE REPLACEMENT PROJECT PHASE IIA

Public Hearings

March 11, 12 and 13, 2013

TIP Project No. B-2500

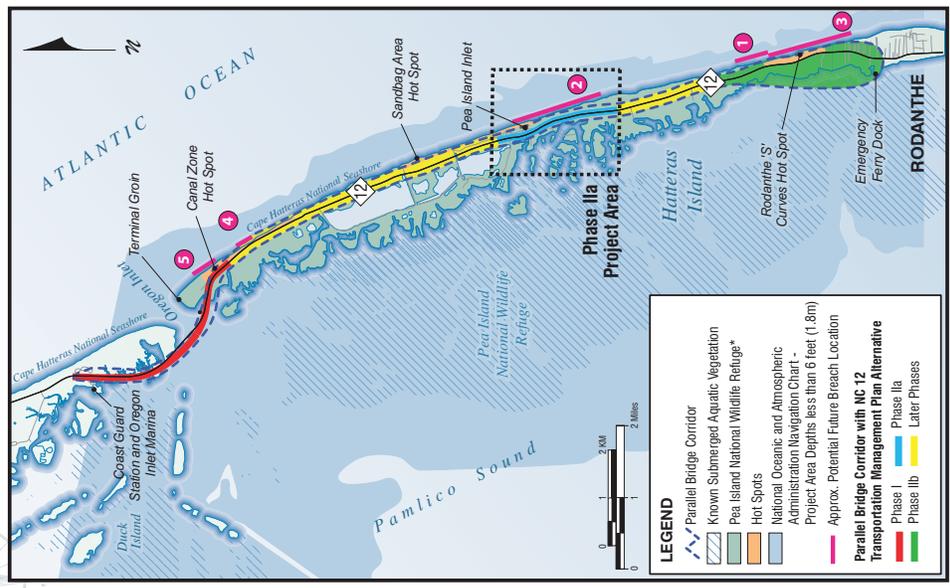
Mr. Drew Joyner
NCDOT - Human Environment Unit
1598 Mail Service Center
Raleigh, NC 27699-1598



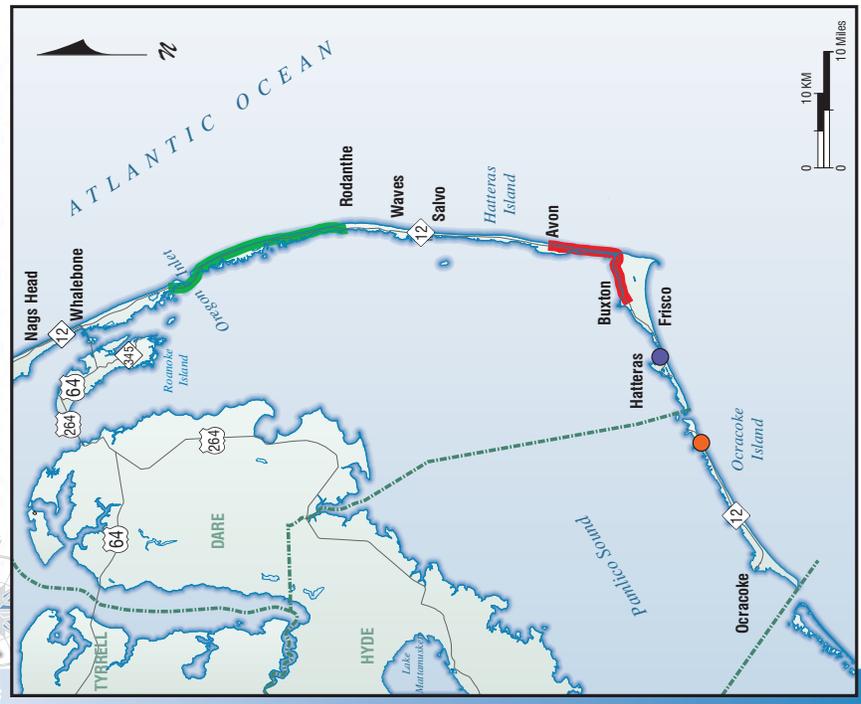


NC 12: Pea Island Long-Term Improvements (B-2500A)

PROJECT AREA



NCDOT Projects on North Carolina's Outer Banks



- NCDOT Projects**
- Bonner Bridge Replacement Project (STIP No. B-2500)
 - Buxton to Avon Planning and Environmental Studies for Maintaining Roadway (STIP No. R-4070B)
 - Ocracoke Island Hot Spot Interim Improvements (STIP No. R-3116A)
 - Hatteras Village Hot Spot Interim Improvements (STIP No. R-3116B)

NC 12: Rodanthe Long-Term Improvements (B-2500B) ALTERNATIVES



Phase I (New Oregon Inlet Bridge) Photo Simulations



Plan View of Project Area



View of Channel Spans



Proposed South Approach



NC 12: Pea Island Long-Term Improvement

TIP B-2500A

Public Hearing Schedule

March 11th in Manteo

Dare Co. Administration Building
Public Workshop – 4 p.m. to 7 p.m.

March 12th in Rodanthe

Rodanthe-Waves-Salvo Community Center
Public Workshop – 4 p.m. to 7 p.m.

March 13th in Ocracoke

Ocracoke Community Center
Public Workshop – 5 p.m. to 7 p.m.

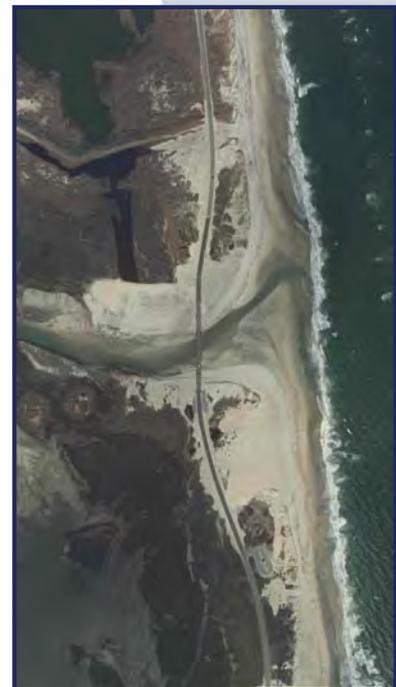


NC 12: Pea Island Long-Term Improvement

TIP B-2500A

WELCOME!

Public Hearings:
March 11, 12, and 13, 2013





NC 12: Pea Island Long-Term Improvement

TIP B-2500A

Public Hearings



- Informal – Speak one-on-one with project team members
- Consists of several “Stations”
- Opportunity to provide written or oral comments



NC 12: Pea Island Long-Term Improvement

TIP B-2500A

Public Hearing Goals

- 1** Present the proposed Long-Term Improvement for NC 12 at Pea Island Inlet
- 2** Hear your comments and concerns on the Pea Island Improvement
- 3** Answer your questions about the NCDOT’s other NC 12-related activities

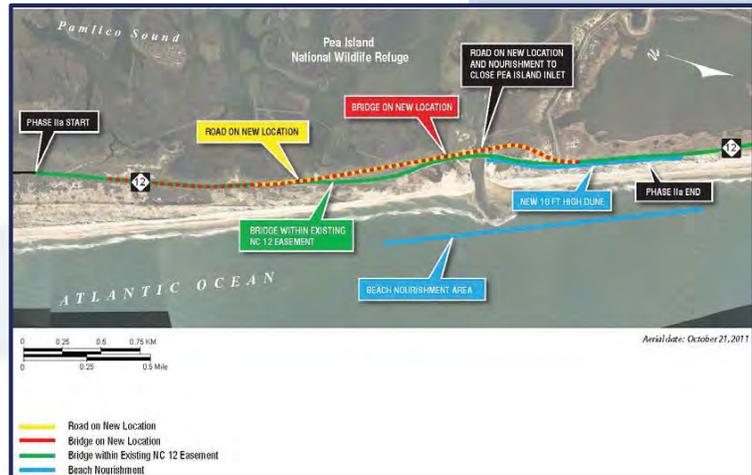


NC 12: Pea Island Long-Term Improvement

TIP B-2500A

Alternatives Considered: Pea Island

- Beach Nourishment
- Road on New Location
- Bridge on New Location
- Bridge within Existing NC 12 Easement



NC 12: Pea Island Long-Term Improvement

TIP B-2500A

Preferred Alternative: Bridge within Existing NC 12 Easement

- Approx. 2.1-mile bridge within the existing NC 12 easement to
- replace the existing surface road and the temporary bridge over the Pea Island inlet.
- Accounts for the potential expansion & migration of the current inlet, as well as potential future breaches in the area
- Constructed on ocean side of the NC 12 easement, except in the area of the temporary bridge
- Traffic would be maintained on NC 12 throughout construction of the permanent bridge





NC 12: Pea Island Long-Term Improvement

TIP B-2500A

Impact Analysis (continued)

- Natural Resource Impacts:
 - Runoff: May be a potential source of pollutants to the Pea Island Inlet and adjacent waters; final stormwater management plan will be developed to minimize these impacts
 - Biotic communities:
 - Permanent: Approx. 12.36 acres
 - Temporary: Approx. 3.84 acres outside existing NC 12 easement from construction related activities



NC 12: Pea Island Long-Term Improvement

TIP B-2500A

Impact Analysis

- Visual Impacts: Proposed Ila bridge will be approx. 20 feet off the ground (30-foot height assumed in 2008 FEIS)
- Cultural Resource Impacts : Adverse visual impact on the Refuge as a historic landscape
- Parks and Recreation Impacts
 - Permanent: 1.47 acres of Refuge land within easement
 - Temporary: 3.84 acres of Refuge land outside easement (during construction, will be restored after construction)
 - Motor vehicle access lost to public boat ramp & public parking lot near Pea Island Inlet
 - Activities (kayaking, surfing, etc.) may be affected by the presence of the bridge. Because of natural beach erosion, the proposed bridge will first be located on beach, but will eventually be located in the ocean.



NC 12: Pea Island Long-Term Improvement

TIP B-2500A

Right-of-Way Acquisition

No purchase of private property is associated with the NC 12: Pea Island Long-Term Improvement



NC 12: Pea Island Long-Term Improvement

TIP B-2500A

Impact Analysis (concluded)

- Natural Resource Impacts:
 - Section 404 Jurisdictional Areas (Wetlands):
 - Permanent: Approx. 0.05 acre of Section 404 jurisdictional areas
 - Temporary: Approx. 1.12 acres of wetlands and 0.28 acre of open waters.
 - 0.42 acre of hand clearing in wetlands
 - Protected Species: Unchanged from FEIS; Biological Conclusion for Shortnose sturgeon: “May Affect, Not Likely to Adversely Affect” (same as for Atlantic sturgeon)
 - Essential Fish Habitat (EFH):
 - Permanent: Approx. 0.05 acre impacted
 - Shading impacts from new structure over Pea Island Inlet: 0.32 acre
 - Temporary: minor adverse impacts to EFH during construction, but impacts temporary not expected to result in significant short-term or long-term adverse effects

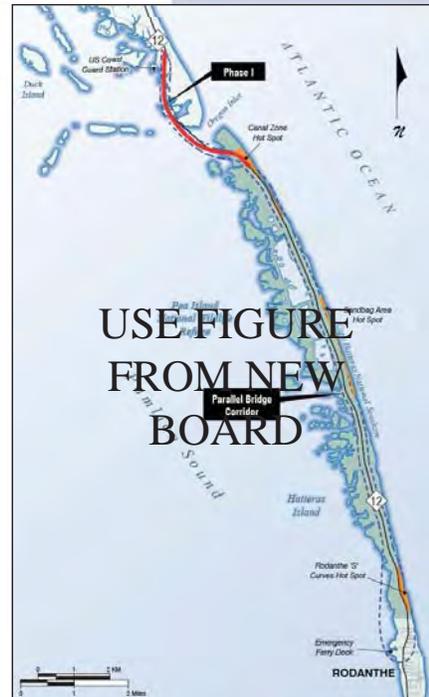


NC 12: Pea Island Long-Term Improvement

TIP B-2500A

Status of NC 12: Rodanthe Long-Term Improvement

- Two detailed study alternatives being evaluated
- EA being prepared
- Public Hearings will be held once the EA is released
- Estimated EA release date



NC 12: Pea Island Long-Term Improvement

TIP B-2500A

Next Steps

1. Comments reviewed and addressed
2. NCDOT and FHWA determine if there are any new impacts since the Record of Decision (ROD) was issued
 1. If so: Supplemental Final Environmental Impact Statements completed
 2. If not: ROD for Phase IIa will be issued (spring 2013)
3. Permits will be applied for and received.
4. A construction contract awarded (as early as summer 2013), and construction of Phase IIa will begin
5. NCDOT will continue the current comprehensive coastal monitoring program of NC 12 between Oregon Inlet and Rodanthe
6. Release of EA for Phase IIb for public comment in summer 2013



NC 12: Pea Island Long-Term Improvement

TIP B-2500A

For More Information on NC 12:

Hurricane Irene recovery efforts web page:
www.ncdot.org/travel/nc12recovery

Bonner Bridge Replacement Project web page:
<http://www.ncdot.gov/projects/bonnerbridgereplace/>

Long-Term Solutions for NC 12 web page:
<http://www.ncdot.gov/projects/bonnerbridgephase2/>



NC 12: Pea Island Long-Term Improvement

TIP B-2500A

Additional Stations

- Bonner Bridge Replacement
- Ferries (Rodanthe and Ocracoke Hearings)





NC 12: Pea Island Long-Term Improvement

TIP B-2500A



**Drop your
comments in
the box**



**E-mail your
comments**



**Mail your
comments**

See Drew Joyner if you wish to submit a recorded oral comment.

Comments are being accepted until **March 28th, 2013**;
however, NCDOT encourages citizens to submit their
comments as soon as possible.



NC 12: Pea Island Long-Term Improvement

TIP B-2500A

Stay Up-to-date on the Latest:



Blog: <http://nc12repairs.blogspot.com/>



Twitter: http://twitter.com/NCDOT_NC12



Facebook: <https://www.facebook.com/NCDOT>



NC 12: Pea Island Long-Term Improvement

TIP B-2500A

Please Proceed to the Main Area



NC 12: Pea Island Long-Term Improvement

TIP B-2500A

THANK YOU!



B-112



NC 12: Pea Island
Long-Term Improvement

TIP B-2500A

**THIS
PRESENTATION
WILL REPEAT IN
1 MINUTES**



NC 12: Pea Island
Long-Term Improvement

TIP B-2500A

**THIS
PRESENTATION
WILL REPEAT IN
2 MINUTES**

REPLACEMENT OF THE HERBERT C. BONNER BRIDGE (BRIDGE NO. 11) ON NC 12 OVER OREGON INLET

Bonner Bridge Update

TIP Project No. B-2500
Dare County, North Carolina

ENVIRONMENTAL ASSESSMENT FOR LONG-TERM IMPROVEMENTS OF NC 12 IN THE RODANTHE BREACH AREA AVAILABLE FOR REVIEW

The North Carolina Department of Transportation (NCDOT) has released an Environmental Assessment (EA) for Phase IIb (Rodanthe breach) of the Bonner Bridge Replacement Project for public comment. The Bonner Bridge Replacement Project includes both a new bridge over Oregon Inlet (Phase I) and future phases that provide for the long-term maintenance of NC 12 from Oregon Inlet to Rodanthe. Phase IIb of the project is the long-term solution for the section of NC 12 in the southern portion of Pea Island National Wildlife Refuge and in northern Rodanthe.

The EA identifies the two alternatives for Phase IIb that are shown on the figure on the next page. They are:

- The Bridge within Existing NC 12 Easement/Alternative (Preferred) consists of building a 2.3-mile bridge where the NC 12 roadway is today; it would pass over an area of Hatteras Island considered susceptible to both future breaches and the effects of shoreline erosion. In the Refuge, the existing NC 12 roadway would be removed. In Rodanthe, one-way service roads next to the bridge would provide access to private properties along NC 12.
- The Bridge on New Location Pamlico Sound that would bypass an area of Hatteras Island considered susceptible to both future breaches and the effects of shoreline erosion. In the Refuge, the existing NC 12 roadway would be removed. In northern Rodanthe, the existing roadway would remain in place to provide access to private properties.

How to Comment on the EA

Comments on the EA and the Preferred Alternative may be submitted in writing at any of the public hearings. Comments also can be mailed to:

Drew Joyner
Human Environment Section Head
NCDOT
1598 Mail Service Center
Raleigh, NC 27699-1598
emailed to: PublicInvolvement2@ncdot.gov
or faxed to (919) 212-5785.

The deadline for comments is January 24, 2014

Bulletin Board

PHASE IIb PUBLIC HEARINGS

January 7, 2014
OCRACOKE
Ocracoke Community Center
1009 Irvin Garrison Highway
Open House Hearing:
4:00 pm to 7:00 pm

January 8, 2014
RODANTHE/BUXTON
Rodanthe-Waves-Salvo Community Center
23196 Myrna Peters Road, Rodanthe
Pre-Hearing Open House
3:00 pm - 6:00 pm
Cape Hatteras Secondary School
48576 Highway 12, Buxton
Formal Presentation 7:00 pm

January 9, 2014
MANTEO
Dare County Administration Bldg
954 Marshall Collins Drive
Pre-Hearing Open House
5:00 pm - 6:30 pm
Formal Presentation 7:00 pm

Bonner Bridge Update

PHASE IIb DETAILED STUDY ALTERNATIVES



North Carolina Department of Transportation
Project Development and Environmental Analysis Unit
Attention: **Beth Smyre**
1548 Mail Service Center
Raleigh, North Carolina 27699-1548



WHAT HAPPENS NEXT

After reviewing comments from citizens, local government, and state and federal regulatory and resource agencies, NCDOT and the Federal Highway Administration (FHWA) will determine if the proposed Phase IIb project results in any significant new impacts beyond those previously taken into consideration and if a Supplemental Final Environmental Impact Statement (SFEIS) is necessary. If an SFEIS is not needed, a Record of Decision (ROD) that identifies the Selected Alternative will be issued in early 2014. NCDOT plans to award a design-build construction contract in late Spring 2014.

Feel Free to Contact the Study Team

If you have any questions or wish to be added to our newsletter mailing list, please call John Page on our Toll-Free Project Information Line, 1-866-803-0829. You may also write the study team at:

Ms. Beth Smyre -- or -- **Mr. John Page**
NCDOT Department of Transportation
Project Development and Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548
bsmyre@ncdot.gov

Parsons Brinckerhoff
434 Fayetteville Street
Suite 1500
Raleigh, NC 27601
pagej@pbworld.com

EA Review Locations

The EA and maps of designs for the two alternatives under consideration are available for public review at the following locations:

- Dare County, North Carolina library locations in Hatteras Village, Kill Devil Hills, and Manteo
- Fessenden Recreation Center in 48815 NC Highway 12, Buxton NC
- NCDOT Resident Engineer's Office, 349 Water Plant Road, Unit B, Manteo, NC
- Ocracoke School & Community Library, 225 Back Road, Ocracoke, NC
- Dare County Planning and Inspections Satellite Office, 48815 NC Highway 12, Buxton, NC

The EA and maps also are posted for online review on NCDOT's website at <http://www.ncdot.gov/projects/bonnerbridgephase2/>



WELCOME to the NC 12 – Rodanthe Breach Long-Term Improvements (Bonner Bridge – Phase IIb) Public Hearings

B-115

January 7, 2014

Open House Hearing 4:00 p.m. to 7:00 p.m.
Ocracoke Community Center
1009 Irvin Garrish Highway, Ocracoke

January 8, 2014

Pre-Hearing Open House 3:00 p.m. – 6:00 p.m.
Rodanthe-Waves-Salvo Community Center
23186 Myrna Peters Road, Rodanthe
Public Hearing 7:00 p.m.
Cape Hatteras Secondary School
48576 Highway 12, Buxton

January 9, 2014

Pre-Hearing Open House 5:00 p.m. – 6:30 p.m.
Public Hearing 7:00 p.m.
Dare County Administration Building
954 Marshall Collins Drive, Manteo

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PURPOSE OF PUBLIC HEARING

Today's public hearing is an important step in the North Carolina Department of Transportation's (NCDOT) procedure for making you, the public, a part of the project development process. The purpose of the public hearing is to obtain public input on long-term improvements to NC 12 within the southern part of the Pea Island National Wildlife Refuge and northern part of Rodanthe (Phase IIb of the Bonner Bridge Replacement Project). NCDOT is holding three public hearings. The same information will be available at all of the hearings.

Hurricane Irene hit the North Carolina coast on August 27, 2011 and breached NC 12 in two locations – northern Rodanthe and within the Pea Island National Wildlife Refuge (Refuge). NCDOT completed temporary repairs at the two breach sites and reopened NC 12 to traffic on October 10, 2011. With traffic restored to the area, NCDOT has been working on long-term solutions for these two sites. The long-term solution at the northern Rodanthe breach, as well as the Rodanthe 'S' Curves Hot Spot, is considered Phase IIb of the Bonner Bridge Replacement Project. The Phase IIb project area extends from a point approximately 1.8 miles north of the Refuge boundary to approximately 170 feet north of Myrna Peters Road (SR 1492) in Rodanthe.

NCDOT released an Environmental Assessment (EA), which documents the planning and environmental studies for this project, for public comment in December 2013. The Phase IIb EA identifies the two detailed study alternatives under consideration: the Bridge within Existing NC 12 Easement Alternative and the Bridge on New Location Alternative. For reasons described below, the Phase IIb EA identifies the Bridge within Existing NC 12 Easement Alternative as the Preferred Alternative; however, a final decision on which alternative will be built will not be made until all comments on the EA are reviewed. Also described in the Phase IIb EA are the changes in the environmental setting since the release of the 2010 Record of Decision (ROD) for the Bonner Bridge Replacement Project.

The Phase IIb EA and maps displaying the location and design of the project's two detailed study alternatives are available for public review at the following locations:

- Dare County Libraries in Manteo at 700 N. Hwy 64/264, in Hatteras at 57709 NC Hwy 12, and in Kill Devil Hills at 400 Mustian Street
- Fessenden Recreation Center, 46830 NC Hwy 12, Buxton, NC
- Dare County Planning and Inspections Satellite Office, 50347 NC Hwy 12, Frisco, NC
- NCDOT Resident Engineer's Office, 349 Water Plant Road, Unit B, Manteo, NC
- Ocracoke School and Community Library, 225 Back Road, Ocracoke, NC

Project maps, documents, and related project information are also available online at: <http://www.ncdot.gov/projects/bonnerbridgephase2/>.

YOUR PARTICIPATION

Today's public hearing is intended to provide you with an opportunity to learn more about Phase IIb, as well as to make comments on what you see today and on the findings presented in the Phase IIb EA. The public hearing at Ocracoke is an open

house without a formal presentation. The public hearing in the Rodanthe area consists of an open house at the Rodanthe-Waves-Salvo Community Center, followed by a formal presentation in Buxton at the Cape Hatteras Secondary School to accommodate the expected number of participants. The *Maritoe* hearing will be an open house, followed by a formal presentation.

At the informal open houses in all three locations, the public is welcome to drop in at any time during the scheduled hours to view displays of the proposed Phase 11b alternatives. Study team members will be available to explain and answer questions about the alternatives and designs under consideration, as well as their associated environmental impacts.

You are encouraged to share your ideas, thoughts, and suggestions with study team members at today's public hearing. You also are encouraged to participate in the project development process by making your comments and/or questions a part of the public record. This may be done in several ways:

- You may write them on the comment sheet attached to this handout and leave them with a project team member or in the comment box.
- In Buxton and Manteo, oral comments are being recorded at the public hearing and transcribed following the hearing. At the Ocracoke open house hearing, a recording device is available; please ask a project team member if you are interested in making an oral comment.
- You may mail/e-mail/fax your comments by January 24, 2014 to the following address:

Mr. Drew Joyner
NCDOT – Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
Email: PublicInvolvement2@ncdot.gov
Phone: (919) 707-6077
Fax: (919) 212-5785

WHAT IS DONE WITH THE INPUT?

After the comment period ends on January 24, 2014, all comments will be reviewed and discussed at a post-hearing meeting. The meeting will include NCDOT project team members, including its planners, engineers, right-of-way agents, and other transportation-related professionals, as well as representatives from other agencies, such as the Federal Highway Administration (FHWA), the US Army Corps of Engineers (USACE), and the NC Department of Environment and Natural Resources also will participate.

Most issues will be resolved at that time. NCDOT considers safety, costs, traffic service, social, environmental and property impacts, and public comments in making decisions. Complex issues may require additional study and may be reviewed by higher management, Board of Transportation members and/or the secretary of transportation.

Minutes of the post-hearing meeting will be prepared and a summary will be available to the public. You may request this document on the attached comment sheet. A summary of the public comments also will be provided to the state and federal agencies that will make the final decision on which alternative will be constructed.

WHAT HAPPENS NEXT?

- After reviewing comments from citizens, local government, and state and federal regulatory and resource agencies, the project team will meet with state and federal environmental resource and regulatory agencies to reach an agreement on which alternative will be built; this alternative is known as the least environmentally damaging practicable alternative (LEDPA).
- NCDOT and FHWA will determine if there are any significant new impacts since the issuance of the 2010 Record of Decision (ROD). If new significant impacts are identified, a Supplemental Final Environmental Impact Statement (SFEIS), for Phase 11b will be completed.
- If a SFEIS is not needed, a ROD for Phase 11b will be issued in the spring of 2014. NCDOT then will apply for the permits required for construction. A design-build contract for construction of Phase 11b is scheduled to be awarded in late spring 2014. Construction of Phase 11b will begin once the final design of the project is completed and all permits are received.
- NCDOT will continue the current comprehensive coastal monitoring program of NC 12 between Oregon Inlet and Rodanthe that started in early 2011. This program will be used to help decide what the long-term solution for future phases of the Bonner Bridge Replacement Project should be and when they should be implemented.

PROJECT DESCRIPTION

NCDOT is proposing to implement a long-term solution for the portion of NC 12 in the southern portion of the Pea Island National Wildlife Refuge and northern Rodanthe (Phase 11b of the Bonner Bridge Replacement Project). Two detailed study alternatives are under consideration: the Bridge within Existing NC 12 Easement Alternative (Preferred) and the Bridge on New Location Alternative. These detailed study alternatives can be described by the following characteristics:

- Bridge within Existing NC 12 Easement Alternative:
 - An approximately 2.5-mile-long improvement, including a 2.3-mile-long bridge, would be constructed within the existing NC 12 easement.
 - This alternative would bridge the area considered susceptible to future breaches and the effects of shoreline erosion.



PHASE IIb DETAILED STUDY ALTERNATIVES

Figure
1

- In the Refuge, the existing surface road would be removed. In Rodanthe, one-way service roads next to the bridge would provide access to private property from NC 12.
- Traffic would be maintained on NC 12 throughout construction of the permanent bridge.
- Bridge on New Location Alternative:
 - An approximately 3-mile-long improvement, including a 2.6-mile-long bridge mostly over Pamlico Sound, would be constructed. The bridge would leave the Refuge (requiring an easement change), and would reconnect to the existing NC 12 at Rodanthe, just north of the Liberty gas station/Island Convenience Store.
 - This alternative would bypass the area considered susceptible to future breaches and the effects of shoreline erosion.
 - The existing length of NC 12 from the north end of the bridge to the southern border of the Refuge would be removed and the easement returned to the Refuge. In Rodanthe, the existing NC 12 roadway would remain to provide access to private properties.

The two detailed study alternatives are shown on Figure 1 on the next page. Detailed drawings and photo-realistic visualizations are being presented at today's public hearing.

The Preferred Alternative for this project, as identified in the Phase IIb EA, is the Bridge within Existing NC 12 Easement Alternative. It is preferred because it is entirely within the existing NC 12 easement and as such, would require no new permanent NC 12 easement in the Refuge and avoids impacts in Pamlico Sound.

The selection of an alternative for implementation will not be made until after public and agency review of the Phase IIb EA. The final decision will consider stakeholder comments received during the review period, including the views and preferences of official(s) from pertinent state and federal environmental resource and regulatory agencies, in addition to input from the residents, business owners, and property owners of the portion of Rodanthe affected, along with other members of the public.

The long-term improvement at the Rodanthe breach is Phase IIb of the Bonner Bridge Replacement Project, which includes the replacement of the Herbert C. Bonner Bridge (Bonner Bridge) in Dare County, the demolition and removal of the existing Bonner Bridge, and improvements to NC 12 between the community of Rodanthe and Oregon Inlet.

NC DOT issued the decision document for the Bonner Bridge Replacement Project, which is called a Record of Decision (ROD), on December 20, 2010. It selected the Parallel Bridge Corridor with NC 12 Transportation Management Plan as the alternative for the project. This alternative includes:

- Construction of a new parallel bridge ("short bridge") across Oregon Inlet as soon as possible (Phase I of the project); and

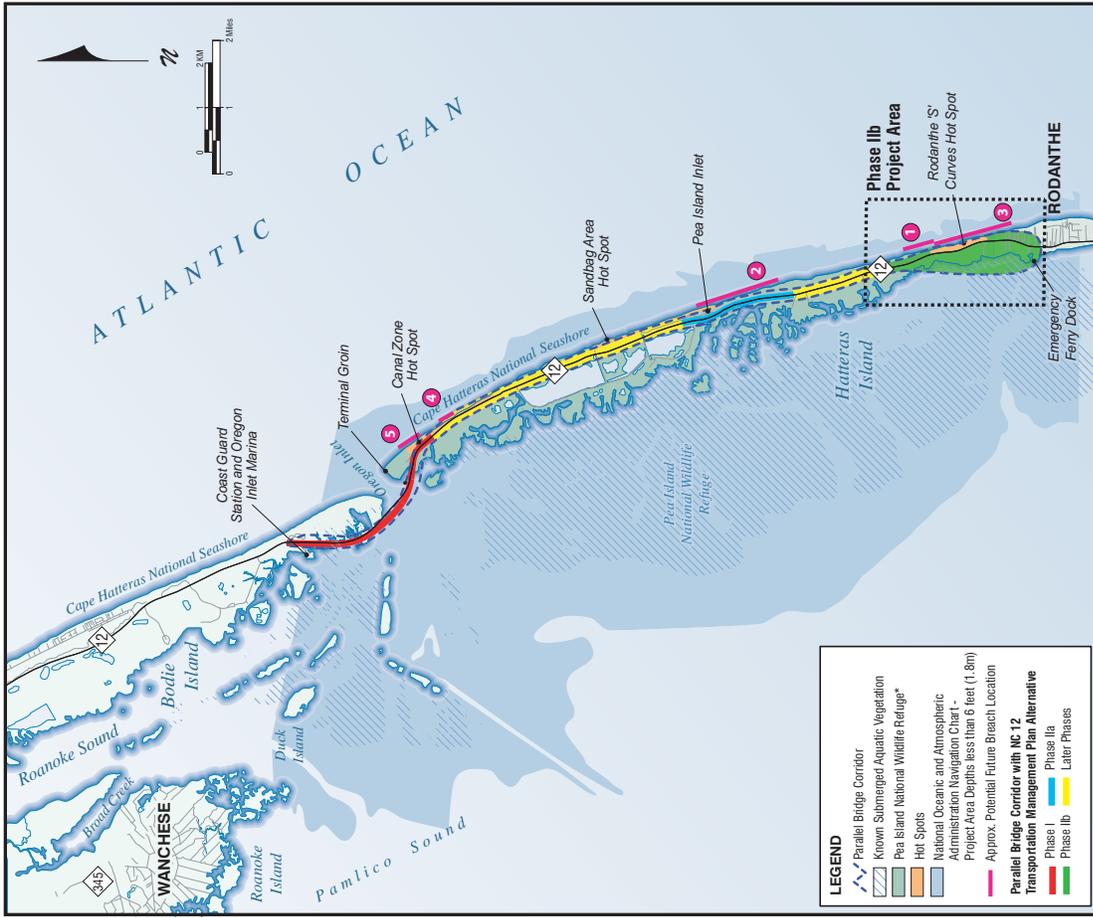


Figure 2
**PARALLEL BRIDGE CORRIDOR WITH NC 12
 TRANSPORTATION MANAGEMENT PLAN ALTERNATIVE**

The implementation of a coastal monitoring program on Hatteras Island between Oregon Inlet and Rodanthe to determine when and what to build for future phases of the project.

Phases I and II of the NC 12 Transportation Management Plan are illustrated in Figure 2 on the next page. The coastal monitoring program began in 2011. A ROD was issued for Phase IIa (NC 12 – Pea Island Long-Term Improvements) in October 2013. This portion of the Bonner Bridge Replacement Project includes construction of an approximately 2.1-mile-long bridge within the existing NC 12 easement to replace the existing surface road and the temporary bridge over the Pea Island inlet. This project was awarded to a contractor for construction on November 27, 2013.

WHAT OTHER ALTERNATIVES WERE UNDER CONSIDERATION?

Under the Parallel Bridge Corridor with NC 12 Transportation Management Plan, the alternatives that were studied in the 2008 Final Environmental Impact Statement (FEIS) and the 2010 EA for the section of NC 12 between Oregon Inlet and Rodanthe may be used in future sections of the project. These alternatives were presented to the public as part of the Parallel Bridge Corridor at public hearings in November 2005, March 2007, and July 2010. Based on these original Parallel Bridge Corridor alternatives, four alternatives were considered in the Phase IIb EA during the selection of the Preferred Alternative for long-term improvements in the Phase IIb Rodanthe breach study area. These alternatives (see Figure 3) were presented at the Phase II workshops in December 2011 and January 2012 and are described below:

- Beach Nourishment – NC 12 would remain in its current location and beach nourishment (combined with dune enhancement) would be used to maintain an adequate protective beach and dune system. Nourishment would likely be repeated at four-year intervals. This alternative was eliminated because of uncertainties related to the availability of a suitable sand source over the project's estimated 50-year life (i.e., through 2060); it would not adequately protect NC 12 from potential future breaches/inlets; it would not allow natural island processes to occur; and, based on the opinions of USFWS representatives, it is not likely to be found compatible with the Refuge's mission and purpose.
- Bridge within Existing NC 12 Easement and Beach Nourishment – NC 12 would be elevated in its current easement onto a bridge within the Refuge and beach nourishment would be used in the southern portion of the Refuge and the northern Rodanthe area to maintain an adequate protective beach and dune system. Nourishment would likely be repeated at four-year intervals. This alternative was eliminated because of uncertainties related to the availability of a suitable sand source; it would not adequately protect NC 12 from the formation of potential future breaches/inlets; it would not allow natural island movement to occur, and it is not likely to be found compatible with the Refuge's mission and purpose.
- Bridge on New Location – This alternative consists of building a bridge in Pamlico Sound that would bypass the area considered susceptible to future breaches and the effects of shoreline erosion. Except in Rodanthe, the existing NC 12 roadway would be removed. In Rodanthe, the NC 12 roadway would remain to provide access to private properties.

- Bridge within Existing NC 12 Easement – This alternative consists of building a bridge in the existing NC 12 easement that would pass over the area considered susceptible to future breaches and the effects of shoreline erosion. Except in Rodanthe, existing NC 12 would be removed. In Rodanthe, one-way service roads next to the bridge would provide for access to private property from NC 12.

Other alternatives were also considered, including:

- The Pamlico Sound Bridge Corridor (a 17.5-mile bridge extending from Bodie Island to Rodanthe)
- Ferries (including high-speed ferry options)
- A Bridge from Rodanthe to Either Stumpy Point or Roanoke Island, and
- A "Seven-Mile" Bridge (in Pamlico Sound that would bridge both Phase II sites).

These alternatives were all found to be unreasonable because they do not meet the project purpose and need, are not affordable, and/or because of potential environmental impacts.

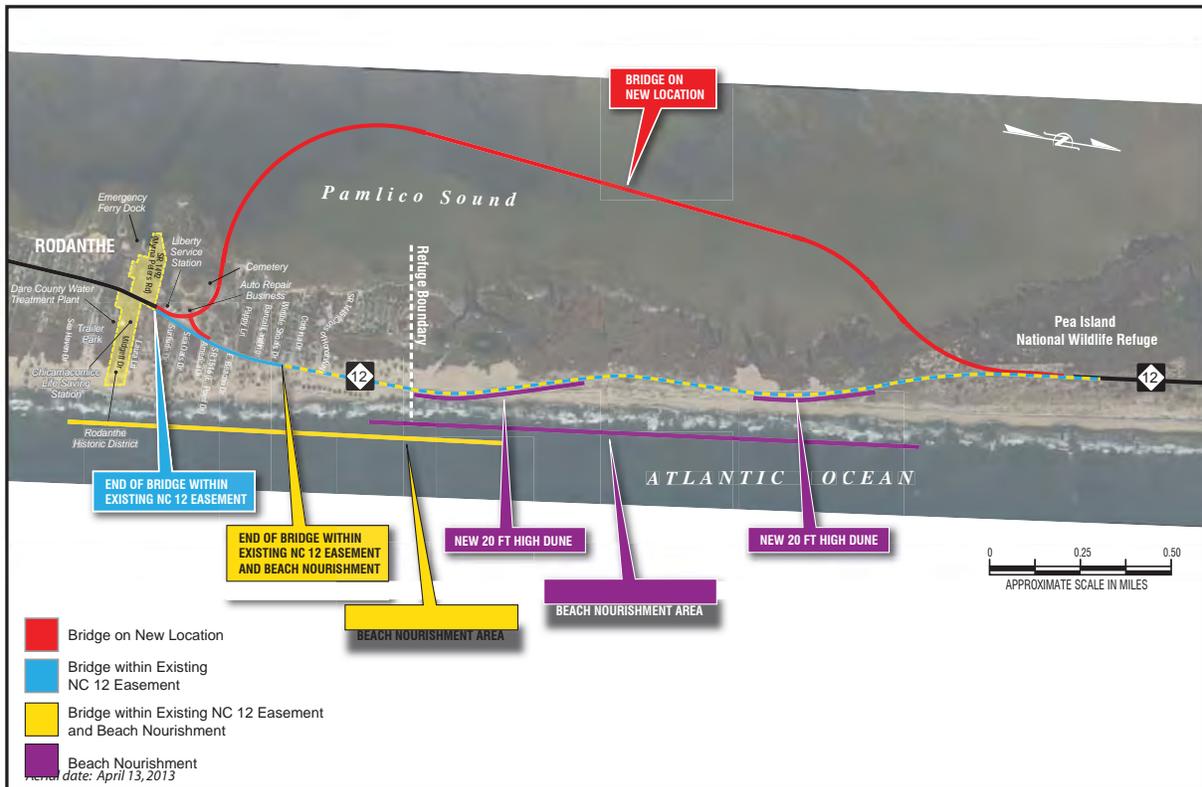
From the alternatives listed above, the Bridge on New Location and the Bridge within Existing NC 12 Easement were carried forward as detailed study alternatives. The Bridge with Existing NC 12 Easement Alternative is listed in the EA as the Preferred Alternative.

PROJECT COSTS, FUNDING, AND SCHEDULE

Based on the proposed preliminary design, the construction cost estimate for Phase IIb with the Bridge within Existing NC 12 Easement is between \$187.5 and \$215.5 million (2013 dollars). These values include estimated costs for construction, right-of-way acquisition and relocation, and utilities relocation, and are presented as a range to reflect a range of possible structure types and construction techniques.

Based on the proposed preliminary design, the construction cost estimate for Phase IIb with the Bridge on New Location is between \$203.3 and \$236.3 million (2013 dollars). These values include estimated costs for construction, right-of-way acquisition and relocation, and utilities relocation, and are presented as a range to reflect a range of possible structure types and construction techniques.

With either alternative, Phase IIb primarily would be funded through existing federal and state funding sources available to transportation projects and allocated to NCDOT Division 1 in the State Transportation Improvement Program (STIP). The proposed project is a Federal-Aid Highway Project and will be constructed under the State-Federal Aid Highway Program. Financing for these types of projects typically consists of 80 percent Federal funds and 20 percent State funds provided through the North Carolina Highway Trust Fund. In addition, FHWA has advised NCDOT that a portion of the cost of Phase II (including Phase IIa and Phase IIb) may be eligible for reimbursement under federal Emergency Relief (ER) funding. The amount of ER funding available for Phase II will depend upon the scope of the long-term solution as compared to the original damage as a result of the storm. FHWA estimates that 30 percent of the long-term



PHASE IIb ALTERNATIVES CONSIDERED

Figure 3

solution at the Rodanthe site (Phase IIb) may be eligible for ER funding; however, it is provided through a reimbursement process and is not necessarily a guaranteed funding source.

A design-build contract will be awarded for construction of Phase IIb after the Phase IIa ROD is issued. Phases I (Bonner Bridge Replacement), IIa (Pea Island inlet) and IIb (Rodanthe breach) have all been allocated funding in the current (2012 to 2018) State Transportation Improvement Program. Phase IIb construction is anticipated to last from 2 to 3 years for the Bridge within Existing NC 12 Easement Alternative and from 3 to 3.5 years for the Bridge on New Location Alternative.

PROJECT IMPACTS

Impact Type	Bridge on New Location Alternative	Bridge within Existing NC 12 Easement Alternative (Preferred)
Rodanthe		
• Residential Relocation	2	5
• Business Relocation	2	2
• Local Access Changes	Between the project terminus and the Refuge boundary, existing NC 12 would serve homes and businesses	Local one-way frontage roads to serve homes and businesses currently served by NC 12; community bisected by bridge
• Visual Impacts	Bridge within views of Pamlico Sound (1,400 to 1,700 feet from the shore except when approaching shore)	Bridge substantial visual presence, including homes less than 100 feet from bridge with traffic seen from third floor windows. Also, frontage roads for local traffic at edge of existing right-of-way
• Recreation Impacts	Water recreation use limited by bridge presence in Pamlico Sound, particularly wind surfers and kite boarders	With shoreline erosion, beach and offshore recreation on the Atlantic Ocean ultimately affected by bridge presence
• Noise Sensitive Receptors Affected	2 homes	6 homes
• Cemetery	Bridge adjacent to cemetery	No impact
Pea Island National Wildlife Refuge		
• New Permanent NC 12 Easement	2.79 acres	0.00 acres
• Existing NC 12 Easement Returned to Refuge	19.27 acres	0.00 acres
• Temporary Construction Easement	0.63 acres	2.06 acres
• Refuge recreation Impacts	Loss of direct road access for 1.8 miles	Loss of direct road access for 1.8 miles plus with shoreline erosion, beach and offshore recreation ultimately affected by bridge pier presence
Natural Resources		
Jurisdictional Wetlands (Permanent Fill)	0.44 acres	0.05 acres

Impact Type	Bridge on New Location Alternative	Bridge within Existing NC 12 Easement Alternative (Preferred)
Protected Species	Not likely to adversely affect protected species	Lights from the bridge are likely to adversely affect sea turtle hatchlings; like Phase IIa, could be mitigated by an up to 36-inch bridge rail parapet and construction lighting type, which will be considered during Section 7 consultation for this project.
Essential Fish Habitat (EFH)/Submerged Aquatic Vegetation (SAV)	Pamlico Sound is EFH and contains SAV or SAV habitat; would construct bridge from work bridge and contain jetting spoils to minimize impact. There would be a permanent EFH impact of 11.34 acres, almost all associated with the bridge deck shading EFH, SAV, and/or SAV habitat.	Minor impact associated with pumping pile jetting water from Pamlico Sound, mitigated by screening if needed. In 2060, when the bridge could be over the ocean, there would be approximately 11.00 acres of EFH shading.

PURPOSE AND NEED OF THE BONNER BRIDGE REPLACEMENT PROJECT

The purposes of the Bonner Bridge Replacement Project (which includes Phase IIb, the reason for today's hearing) are to:

- Provide a new means of access from Bodie Island to Hatteras Island for its residents, businesses, services, and tourists prior to the end of Bonner Bridge's service life.

Needs Addressed: Although Bonner Bridge is reaching the end of its service life, demand for convenient daily and emergency access across Oregon Inlet is expected to continue.

- Provide a replacement crossing that takes into account natural channel migration expected through year 2050 and provides the flexibility to let the channel move.

Needs Addressed: The natural channel or gorge through Oregon Inlet migrates. A replacement bridge needs to provide spans of sufficient height and width for navigation through the anticipated areas of future natural channel migration, thereby helping to reduce future dredging needs. Construction of the replacement crossing west of Oregon Inlet where less sand movement occurs also could help reduce future dredging needs.

- Provide a replacement crossing that will not be endangered by shoreline movement through year 2050.

Needs Addressed: The southern terminus of Bonner Bridge is north of portions of NC 12 threatened by shoreline erosion and overwash. Placing the southern terminus of a replacement bridge south of these areas, or including a long-term NC 12 maintenance and protection component, will reduce the need for frequency of

maintenance of these threatened segments of NC 12. All the alternatives were ultimately developed for a service life through 2060.

CONSISTENCY WITH LOCAL LAND USE PLAN

The Parallel Bridge Corridor with NC 12 Transportation Management Plan Alternative, including the two Phase IIb detailed study alternatives, is consistent with the *Dare County Land Use Plan* and zoning.

RIGHT-OF-WAY ACQUISITION

After decisions are made regarding the final design of the alternative selected for construction, the proposed right-of-way limits will be staked in the ground. If you are an affected property owner, a Right-of-Way Agent will contact you and arrange a meeting. The agent will explain the plans and advise you as to how the project will affect you. The agent will inform you of your rights as a property owner. If permanent right-of-way is required, professionals who are familiar with real estate values will evaluate or appraise your property. The evaluations or appraisals will be reviewed for completeness and accuracy, and then the Right-of-Way Agent will make a written offer to you. The current market value of the property at its highest and best use when appraised will be offered as compensation. NCDOT must:

1. Treat all owners and tenants equally;
2. Fully explain the owner's rights;
3. Pay just compensation in exchange for property rights; and
4. Furnish relocation advisory assistance.

RELOCATION ASSISTANCE

If you are a relocatee, that is, if your residence or business is to be acquired as part of the project, additional assistance in the form of advice and compensation is available. You will also be provided with assistance on locations of comparable housing and/or commercial establishments, moving procedures, and moving aid. Moving expenses may be paid for you. Additional monetary compensation is available to help homeowners cope with mortgage increases; increased value of comparable homes, closing costs, etc. A similar program is available to assist business owners. The Right-of-Way Agent can explain this assistance in greater detail.

NOTE: PAMPHLETS SUMMARIZING RIGHT-OF-WAY AND RELOCATION PROCEDURES ARE AVAILABLE AT THE SIGN-IN TABLE.

STATUS OF OTHER NC 12 IMPROVEMENT AND REPAIR PROJECTS

Phase I (Oregon Inlet Bridge)

A design-build contract for Phase I (the new Oregon Inlet bridge) was awarded in July 2011. The final design of the new bridge is nearly complete. Construction is scheduled to start with the resolution of the ongoing lawsuits and the receipt of all necessary environmental permits. NCDOT is expected to open the new bridge to traffic approximately 2.5 years after the start of construction, with all remaining work (including

the demolition of the current bridge) to be completed within one additional year. Visit the Phase I and Bonner Bridge Emergency Scour Repair station for more information.

Phase IIa (NC 12 – Pea Island Long-Term Improvements)

The Record of Decision for Phase IIa was issued October 2013. The final design of the new bridge is complete. The project was awarded to a contractor for construction on November 27, 2013. Construction on the new bridge can begin as early as January 6, 2014. The new bridge is scheduled to open to traffic in spring 2016. Visit the Phase IIa station for more information.

Interim Nourishment Program at Rodanthe

As an interim measure to stabilize and maintain the reliability of NC 12 at the Rodanthe 'S' Curve Hot Spot until the proposed Phase IIb long-term project is implemented, the US Army Corps of Engineers (USACE) plans to implement one round of beach nourishment in the Rodanthe 'S' Curve Hot Spot area. This project was approved by USACE on October 15, 2013. USACE concluded that this project would have no significant environmental impacts. The project is estimated to be completed within 60 to 90 days from initiation and is projected to begin no earlier than January 2014. More information on the USACE Rodanthe 'S' Curve Interim Maintenance program can be found in section 2.6.2.2 of the Phase IIb EA.

Bonner Bridge Repairs

More information on the on-going repairs to Bonner Bridge can be found at the Phase I and Bonner Bridge Repair station.

ADDITIONAL INFORMATION

As mentioned above, please leave comments in the comment box at the public hearing or send them to Mr. Joyner at the address on page 2. Additional information can be found on NCDOT's web sites and other social media resources listed below:

- Bonner Bridge Replacement Project Phase II Web Site – <http://www.ncdot.gov/projects/bonnerbridgephase2/>
- NC 12 Projects Web Site – <http://www.ncdot.gov/nc12/>. (Note that this web page includes links to information about Phases I and II of the Bonner Bridge Replacement Project.)
- NC 12 Twitter Feed – http://twitter.com/NCDOT_NC12
- NC 12 Facebook Page – <https://www.facebook.com/NCDOT>

Additional information also can be obtained by calling John Page at the Project Information Line (toll-free): 1-866-803-0529.

TITLE VI PUBLIC INVOLVEMENT FORM

Completing this form is **completely** voluntary. You are not required to provide the information requested in order to participate in this meeting.

Meeting Type: Public Hearing	Date: 1/7/14, 1/8/14, 1/9/14
Location: Ocracoke / Buxton / Rodanthe / Manteo	
TIP No.: B-2500B	
Project Description: NC 12 – Rodanthe Breach Long-Term Improvements (Phase 1b)	

In accordance with Title VI of the Civil Rights Act of 1964 and related authorities, the North Carolina Department of Transportation (NCDOT) assures that no person(s) shall be excluded from participation in, denied the benefits of, or subjected to discrimination under any of the Department's programs, policies, or activities, based on their race, color, national origin, disability, age, income, or gender.

Completing this form helps meet our data collection and public involvement obligations under Title VI and NEPA, and will improve how we serve the public. Please place the completed form in the designated box on the sign-in table, hand it to an NCDOT official or mail it to the PDEA-Human Environment Section, 1598 Mail Service Center, Raleigh, NC 27699-1598.

All forms will remain on file at the NCDOT as part of the public record.

Zip Code: _____	Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female
Street Name: (i.e. Main Street) _____	Age: <input type="checkbox"/> Less than 18 <input type="checkbox"/> 45-64 <input type="checkbox"/> 18-29 <input type="checkbox"/> 65 and older <input type="checkbox"/> 30-44
Total Household Income: <input type="checkbox"/> Less than \$12,000 <input type="checkbox"/> \$47,000 – \$69,999 <input type="checkbox"/> \$12,000 – \$19,999 <input type="checkbox"/> \$70,000 – \$93,999 <input type="checkbox"/> \$20,000 – \$30,999 <input type="checkbox"/> \$94,000 – \$117,999 <input type="checkbox"/> \$31,000 – \$46,999 <input type="checkbox"/> \$118,000 or greater	Have a Disability: <input type="checkbox"/> Yes <input type="checkbox"/> No
Race/Ethnicity: <input type="checkbox"/> White <input type="checkbox"/> Black/African American <input type="checkbox"/> Asian <input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Native Hawaiian/Pacific Islander <input type="checkbox"/> Hispanic/Latino <input type="checkbox"/> Other (please specify): _____	National Origin: (if born outside the U.S.) <input type="checkbox"/> Mexican <input type="checkbox"/> Central American: _____ <input type="checkbox"/> South American: _____ <input type="checkbox"/> Puerto Rican <input type="checkbox"/> Chinese <input type="checkbox"/> Vietnamese <input type="checkbox"/> Korean <input type="checkbox"/> Other (please specify): _____

How did you hear about this meeting? (newspaper advertisement, flyer, and/or mailing) _____

For more information regarding Title VI or this request, please contact the NCDOT Title VI Section at (919) 508-1808 or toll free at 1-800-522-0453, or by email at slipscomb@ncdot.gov.

Thank you for your participation!



**NCDOT - PDEA
Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598**

COMMENT SHEET

**NC 12 – Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County**

NAME:

ADDRESS:

E-MAIL:

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
 Bridge on New Location Alternative
 Other: _____
 No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
Phone: (919) 707-6077 FAX: (919) 212-5785
Email: PublicInvolvement2@ncdot.gov

Tonight, you also may drop written comments into the comments box or provide oral comments.
Feel free to attach additional pages to this form if you need more space to present your comments.

(This comment sheet continues on the other side.)



Welcome

NC 12: Rodanthe Breach Long-Term Improvements (B-2500B)

BONNER BRIDGE REPLACEMENT PROJECT PHASE IIB

Public Hearings

January 7, 8 and 9, 2014



Comparison of Key Impacts of the Phase IIB Alternatives

IMPACT TYPE	BRIDGE ON NEW LOCATION ALTERNATIVE	BRIDGE WITHIN EXISTING NC 12 EASEMENT ALTERNATIVE (PREFERRED)
Rodanthe		
Residential Relocation	2	5
Business Relocation	2	2
Local Access to Existing NC 12	No change	One-way frontage roads
Visual Impacts	Bridge within views of Pamlico Sound	Bridge substantial visual presence in Rodanthe
Recreation Impacts	Water recreation use limited in Pamlico Sound	Recreation along ocean shoreline affected by bridge as shoreline erodes
Noise Sensitive Receptors Affected	2 homes	6 homes
Cemetery	Bridge adjacent to cemetery	No impact
Pea Island National Wildlife Refuge		
New Permanent NC 12 Easement	2.79 acres	0.00 acre
Existing NC 12 Easement Returned to Refuge	19.27 acres	0.00 acre
Temporary Construction Easement	0.63 acre	2.06 acres
Refuge Recreation Impacts	Direct road access lost for 1.8 miles	Direct road access lost for 1.8 miles; recreation along ocean shoreline affected by bridge as shoreline erodes
Natural Resources		
Jurisdictional Wetlands (Permanent Fill)	0.44 acre	0.05 acre
Protected Species	Not likely to adversely affect protected species	Lights from the bridge are likely to adversely affect sea turtle hatchlings but could be mitigated
Essential Fish Habitat (EFH)/Submerged Aquatic Vegetation (SAV)	Construction and shading impacts to EFH and SAV in Pamlico Sound	Minor construction impacts to EFH in Pamlico Sound; shading impacts to ocean EFH once bridge over ocean because of shoreline erosion.



Phase I (New Oregon Inlet Bridge) Visualizations



Plan View of Project Area



View of Channel Spans

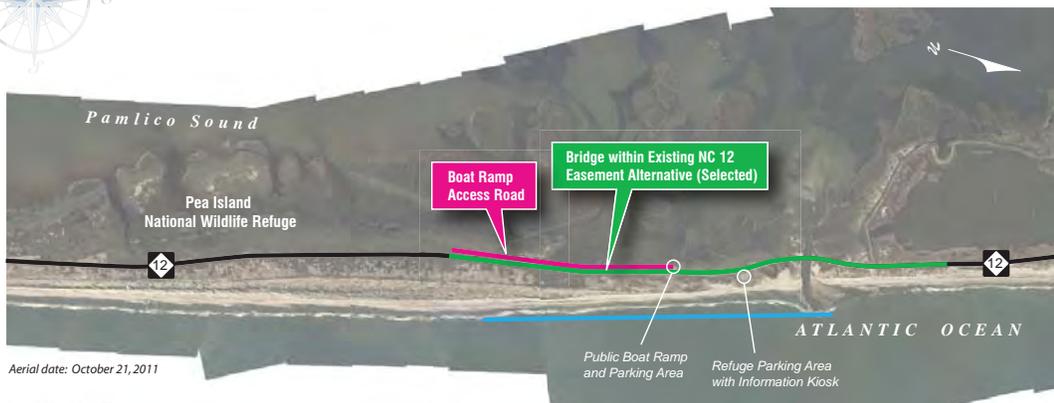


Proposed South Approach

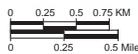
TIP Project No. B-2500



NC 12 - Pea Island Long-Term Improvements (B-2500A)



Aerial date: October 21, 2011



- Bridge within Existing NC 12 Easement Alternative (Selected)
- Boat Ramp Access Road
- Approximate Potential Future Breach Location

TIP Project No. B-2500A

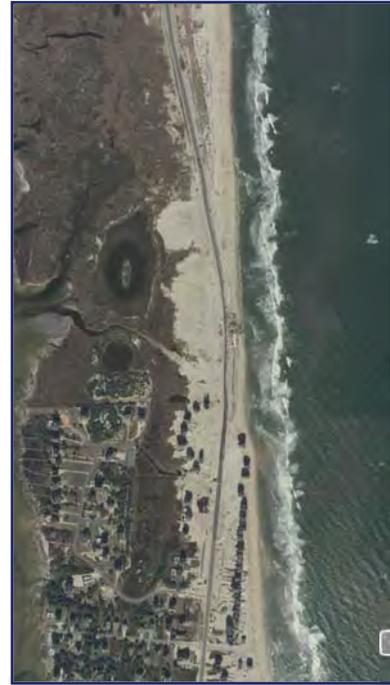


NC 12: Rodanthe Breach Long-Term Improvements

TIP B-2500B

WELCOME!

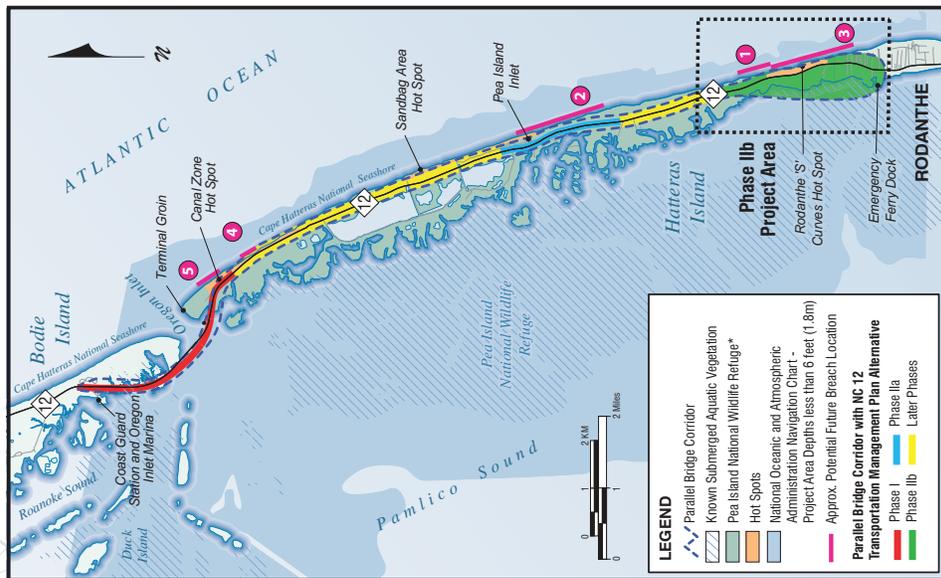
Public Hearings:
January 7, 8, and 9, 2014



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
REPLACEMENT OF THE HERBERT C. BONNER BRIDGE (BRIDGE NO. 11) ON NC 12 OVER OREGON INLET

NC 12: Rodanthe Breach Long-Term Improvements (B-2500B)

PROJECT AREA



TIP Project No. B-2500B





NC 12: Rodanthe Breach Long-Term Improvements

TIP B-2500B

Public Hearing Goals

- 1** Present the proposed alternatives for Long-Term Improvements for NC 12 at the Rodanthe breach area
- 2** Hear your comments and concerns on the proposed NC 12 Improvements
- 3** Answer your questions about NCDOT's other NC 12-related activities



NC 12: Rodanthe Breach Long-Term Improvements

TIP B-2500B

Public Hearing Schedule

January 7th in Ocracoke

Ocracoke Community Center

Open House Hearing 4 p.m. to 7 p.m.

January 8th in Rodanthe/Buxton

Rodanthe-Waves-Salvo Community Center

Pre-Hearing Open House: 3 p.m. to 6 p.m.

Cape Hatteras Secondary School, Buxton

Formal Presentation: 7 p.m.

January 9th in Manteo

Dare County Administration Building

Pre-Hearing Open House: 5 p.m. to 6:30 p.m.

Formal Presentation: 7 p.m. B-127





NC 12: Rodanthe Breach Long-Term Improvements

TIP B-2500B

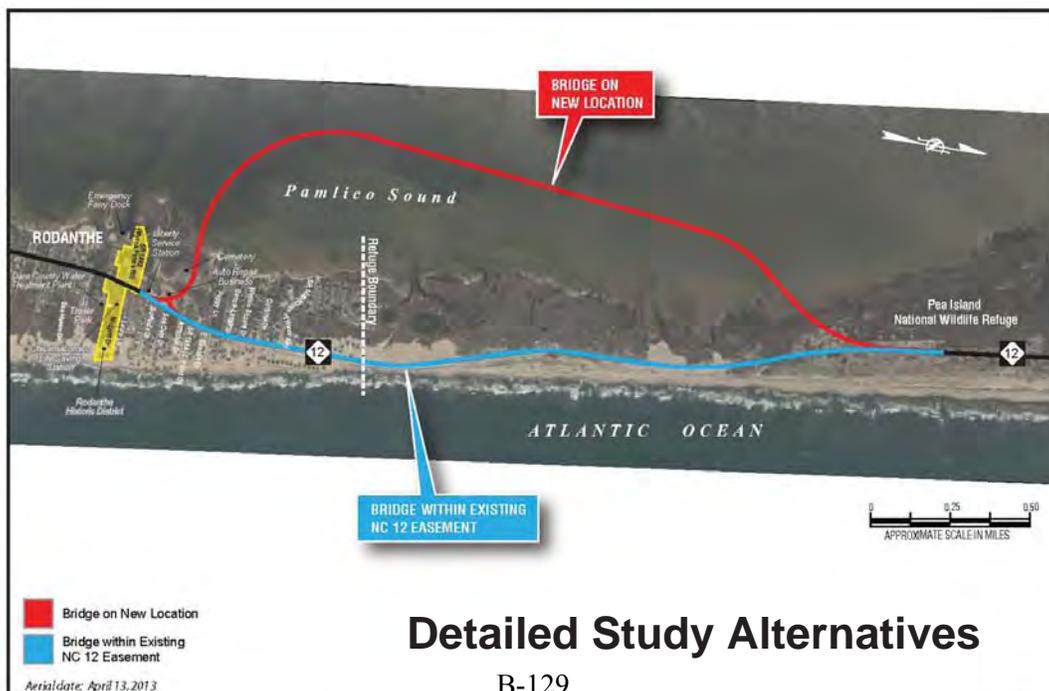
Bridge within Existing NC 12 Easement

- 2.3-mile bridge
- Accounts for future breaches and erosion
- Existing NC 12 would be removed within the Refuge; in Rodanthe, one-way service roads provide property access
- Maintain traffic on NC 12 throughout construction



NC 12: Rodanthe Breach Long-Term Improvements

TIP B-2500B





NC 12: Rodanthe Breach Long-Term Improvements

TIP B-2500B

Bridge within Existing NC 12 Easement Impacts in the Refuge

- Visual impacts
- Loss of direct road access to the Refuge for 1.8 miles



View: North end of project area, looking south.



NC 12: Rodanthe Breach Long-Term Improvements

TIP B-2500B

Bridge within Existing NC 12 Easement Impacts in Rodanthe

- Residential and business relocations
- Use of frontage roads for local access
- Visual impacts



View: Corbina Dr. at NC 12, looking north.



NC 12: Rodanthe Breach Long-Term Improvements

TIP B-2500B

Bridge on New Location: Impacts in Rodanthe

- Residential and business relocations
- Visual impacts for sound-side homes
- Affect recreation in Pamlico Sound
- Affect habitat within Pamlico Sound



View: Sound end of Corbina Dr., looking west.



NC 12: Rodanthe Breach Long-Term Improvements

TIP B-2500B

Bridge on New Location Alternative

- 2.6-mile bridge
- Accounts for future breaches and erosion
- In the Refuge, existing NC 12 pavement would be removed; in Rodanthe, NC 12 will remain for property access
- Maintain traffic on NC 12 throughout construction of the bridge





NC 12: Rodanthe Breach Long-Term Improvements

TIP B-2500B

NCDOT Preferred Alternative

- Bridge within Existing NC 12 Easement
 - No new permanent NC 12 easement in the Refuge
 - Avoids impacts to Pamlico Sound
- Final decision on the alternative to build will consider public input
- Let the project team know which alternative you prefer and why

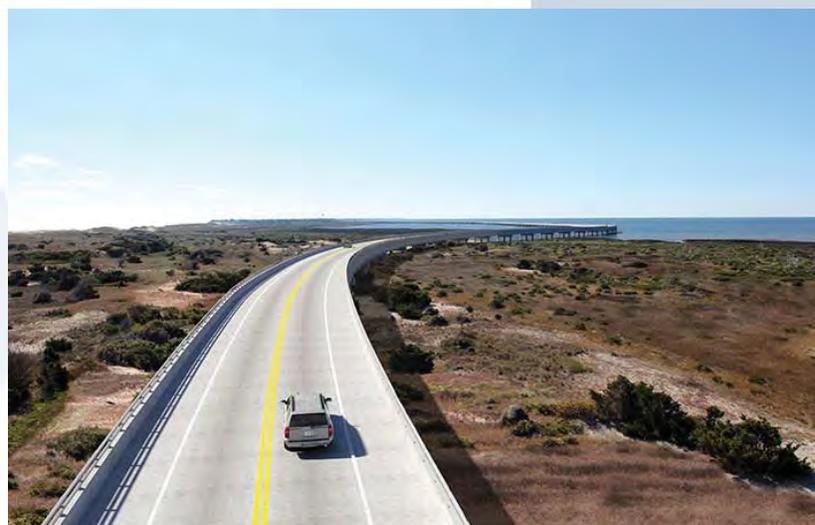


NC 12: Rodanthe Breach Long-Term Improvements

TIP B-2500B

Bridge on New Location: Impacts in the Refuge

- 2.79 acres of new NC 12 easement
- 19.27 miles of existing NC 12 easement returned to the Refuge
- Loss of direct road access to the Refuge for 1.8 miles



View: North end of project area, looking south.



NC 12: Rodanthe Breach Long-Term Improvements

TIP B-2500B

Next Steps

1. Review and consider all Public Hearing comments
2. Select an alternative for construction.
3. Determine if there are any significant new impacts:
 - If so: Issue a Supplemental Final Environmental Impact Statement (SFEIS)
 - If not: Issue a Record of Decision (ROD) for Phase IIb (spring 2014)
4. Award a design-build construction contract (late spring 2014)



NC 12: Rodanthe Breach Long-Term Improvements

TIP B-2500B

Right-of-Way Acquisition

- Phase IIb will require property acquisition and relocation of homes and businesses
- Additional information is available in your handout
- Visit the Right-of-Way station to speak to a Right-of-Way Agent



NC 12: Rodanthe Breach Long-Term Improvements

TIP B-2500B

Additional Stations

- Visualizations of the Study Alternatives
- Bonner Bridge Replacement and Emergency Repairs
- Phase IIa (Pea Island)
- Other NC 12 Projects
- Right-of-Way



NC 12: Rodanthe Breach Long-Term Improvements

TIP B-2500B



**Comment
Box**



Mail



E-mail



Fax

**Oral
Comments**

Comments are being accepted until **January 24th, 2014**.

Make oral comments in Buxton and Manteo following the formal presentation. In Ocracoke, see a project team member if you wish to submit a recorded oral comment.



NC 12: Rodanthe Breach Long-Term Improvements

TIP B-2500B

THANK YOU!



NC 12: Rodanthe Breach Long-Term Improvements

TIP B-2500B

For More Information on NC 12

www.ncdot.gov/nc12



**Toll-Free Project Information Line:
1-866-803-0529**



NC 12: Rodanthe Breach Long-Term Improvements

TIP B-2500B

**THIS
PRESENTATION
WILL REPEAT IN
1 MINUTE**



NC 12: Rodanthe Breach Long-Term Improvements

TIP B-2500B

**Please Proceed
to the Main Area**



Appendix C

Response to Scoping Comments on Potential Phase IIb Alternatives

C. Response to Scoping Comments on Potential Phase IIb Alternatives

This appendix completes the response to the comments received following a series of Citizens Informational Workshops held in December 2011 and January 2012. The workshops were held as part of the scoping process for Phase II of the Bonner Bridge Replacement Project (B-2500).¹ As a result of damage to NC 12 caused by Hurricane Irene in August 2011 in two locations, the North Carolina Department of Transportation (NCDOT) initiated Phase IIa (B-2500A) and Phase IIb (B-2500B) of the Bonner Bridge Replacement Project (B-2500) to implement long-term NC 12 improvements pursuant to the PBC/TMP Alternative identified in the ROD. The two locations in which NC 12 was breached by the storm were in northern Rodanthe (the “Rodanthe breach”) and within the Pea Island National Wildlife Refuge (Refuge) approximately 6 miles south of Oregon Inlet (at the “Pea Island inlet”). This Environmental Assessment (EA) is for the Rodanthe breach area (“Phase IIb”). An EA for the Pea Island inlet area (“Phase IIa”) was released in February 2013 and a ROD was issued in October 2013. Appendix C of the Phase IIa EA for the Pea Island inlet included responses to comments that were applicable to Phase II as a whole, as well as those that specifically addressed Phase IIa. This appendix provides responses to the comments or portions of longer comments that are applicable only to Phase IIb and for which the promise of a response in this document was made in the Phase IIa EA (Appendix C).

Also included in this Appendix are public comments related to Phase IIb that were made during the Phase IIa EA comment period that ended March 28, 2013. They originally appeared in the Phase IIa ROD under the heading “Phase IIb Rodanthe Breach.” These comments were considered during the preparation of this EA and are repeated in this appendix for the reader’s convenience.

The Phase IIa EA and the Phase IIa ROD are included on the compact disc (CD) that accompanies this EA, at the public review locations listed in Section 6.7, and on the NCDOT website at <http://www.ncdot.gov/projects/bonnerbridgephase2/>.

¹ The Selected Alternative for the NC 12 Replacement of the Herbert C. Bonner Bridge over Oregon Inlet (Bonner Bridge Replacement Project), State Transportation Improvement Program (STIP) No. B-2500, is the Parallel Bridge Corridor with NC 12 Transportation Management Plan Alternative (PBC/TMP Alternative), as documented in the December 2010 ROD.

C.1 Public Comments

As part of the Phase II scoping process, Citizens Informational Workshops were held on December 5, 2011 at the Dare County Administration Building in Manteo; December 6, 2011 at the Rodanthe-Waves-Salvo Community Center in Rodanthe; and January 5, 2012 at the Community Center in Ocracoke. Based on the workshop sign-in sheets, attendance at the workshops was as follows: Manteo – 45 people; Rodanthe – 135 people; and Ocracoke – 58 people. A total of 77 citizens and one non-governmental organization (NGO) made comments (written, e-mail, or telephone) at and following the Citizens Informational Workshops. Of the 78 total comments, 25 comments did not express an alternative preference (i.e., general project-related comments and information requests). A summary of these comments sorted by the Phase IIb alternative favored is presented in the next section. Comments not related to a preference for one or more alternatives are presented in the section that follows.

C.1.1 Alternatives Favored in the Phase IIb Project Area

A total of 41 commenters expressed a preference for one of the alternatives displayed at the workshops in the Phase IIb project area, as follows:

- Beach Nourishment 29
- Bridge on New Location 9
- Bridge within Existing NC 12 Easement 7
- Bridge within Existing NC 12 Easement with Beach Nourishment 6

The Outer Banks Chapter of the Surfrider Foundation submitted a petition (with 1,148 signatures) in favor of giving consideration to design options that, at a minimum, provide continued, if not improved, access to Rodanthe ‘S’ Curves Hot Spot area for surfing. The petition did not indicate support for a particular alternative, but it stated that the ‘S’ Curves Hot Spot area is a top surfing spot in the United States. It also emphasized the contribution of surfing to the local economy.

C.1.2 Public Comment Summary Related to the Phase IIb Project Area

In addition to comments indicating a preference for one or more alternatives, there were comments addressing the following substantive topics: project need and timing, cost and financing, decision-making considerations, permanent bridges, the temporary bridge over the Pea Island inlet, a permanent bridge over the Rodanthe breach, relocating NC 12 as a road, beach nourishment, other actions to minimize shoreline change, and utilities and emergency services. Almost all of these comments were addressed in Appendix C of the Phase IIa EA (Section C.1.2, comment themes 1 to 5, 7, 8 [part], and 9 to 11). The comments grouped as comment themes 6 and 8 (part) are specific to the Rodanthe area. These are listed and responses are provided below.

- Permanent Bridge Over the Rodanthe Breach:

- A new bridge would be too disruptive. It would ruin the waterfront experience, including recreation and scenic views. It would impact community cohesion and quality of life. Do not disturb the community; “everything” is disappearing; more commercial development is undesirable.
- A new bridge will create negative impacts to recreational opportunities such as surfing and the economy unless beach access and parking are maintained/ provided, especially at the “S” curves.
- The bridge alternative will devastate Rodanthe.

Response: *The positions of the commenters are noted. Such impacts were considered when evaluating these alternatives in the Bonner Bridge Replacement Project (B-2500) 2008 FEIS and the 2010 EA. They also were taken into consideration in the current Phase IIb study process and this EA. Access will be maintained to homes and businesses along NC 12 with either Phase IIb detailed study alternative. However, direct access from the NC 12 roadside within the Pea Island National Wildlife Refuge (Refuge) would be removed for the section of NC 12 within the Refuge that is bridged. In the past, the Refuge has preferred sacrificing direct roadside motor vehicle access in order to eliminate the need for artificial dunes to maintain a surface road. Refuge representatives have indicated in the past that they will allow for some form of access to the Refuge and its facilities. In the development of Phase IIa mitigation measures, NCDOT agreed to provide an access road, to be maintained by the Refuge, to the New Inlet boat ramp/parking lot. NCDOT also agreed to replace the parking lot currently on the east side of NC 12 that also will be bypassed by the Phase IIa Selected Alternative.*

- Beach Nourishment:

- The entrance to Rodanthe could benefit from beach re-nourishment; if nourishment is tried, then direct ingress to historical Rodanthe is desirable.

Response: *The positions expressed in this comment are noted. Beach nourishment is not being pursued as a detailed study alternative for Phase IIb for the following reasons: uncertainties related to the availability of suitable sand to regularly re-nourish the shoreline over the project’s 50-year life; nourishment would not adequately protect NC 12 from potential future inlets in this area because of the underlying geology; the higher shoreline erosion rate in this area compared to the rest of the Bonner Bridge Replacement Project (B-2500) project area, which would increase the amount of sand required compared to other parts of the full project area; it would not allow natural island processes to occur within the southern portion of the Refuge; and nourishment as a long-term solution is not likely to be found compatible with the Refuge’s mission and purpose (based on previous US Department of Interior [USDOI] comments). Neither of the detailed study alternatives evaluated for Phase IIb would affect ingress to historical Rodanthe. In addition, neither of the detailed study alternatives would prohibit the*

consideration of either short-term or long-term beach nourishment proposals by other government or private entities.

C.2 Southern Environmental Law Center Comments

Portions of the Southern Environmental Law Center's (SELC) scoping comment 7 and comment 9, as presented in the Phase IIa EA, directly related to Phase IIb. Responses to these comments are presented in this section.

7. **Comment:** The portions of this comment not addressed in Appendix C of the Phase IIa EA are:

Beyond these problems within the Refuge, there are serious legal and logistical problems with elevating the existing roadway in the Rodanthe area as well. By NCDOT's own calculations, a bridge in this area will be located in the breakers by 2020 – *in eight short years* – creating tremendous maintenance and erosion problems. By 2060, NCDOT calculates the bridge could be 930 feet offshore. FEIS at 4-30, 4-62. Cost estimates should reflect the certainty of this section of bridge being located in the Atlantic Ocean. Moreover, as discussed above, the bridge's eventual location in the breakers and offshore would render the bridge unusable as an emergency evacuation route.

A Rodanthe bridge will also create access problems and significant effects on the human environment for property owners and tourists. As one example, NCDOT noted in its 2010 EA that the bridge will have to terminate in a full-height stub so that it can be continued farther into Rodanthe when continuing erosion cuts off planned temporary access ramps. Furthermore, NCDOT concedes that the bridge being in the surf will impede views and beach access for residents and visitors and likely will accelerate the erosion problems that already threaten structures in Mirlo Beach and Rodanthe, to the detriment of local property owners.

The Bridge with Nourishment option for Rodanthe is not feasible either. It would have the same erosion problems as the longer Rodanthe bridge, and would also require a compatibility determination in order to deposit sand and construct dunes in the Refuge. As NCDOT acknowledges—as well as for the reasons given above—this activity is likely to be found incompatible with the Refuge. (Handout p. 10).

Response:

Bridge in the Ocean as an Emergency Evacuation Route. NCDOT disagrees with the commenter's assertion that the Phase IIb bridge in the existing NC 12 easement would be rendered unusable as an evacuation route once located in the ocean. This concern was also addressed on page C-32 of the Phase IIa EA. The Phase IIb Bridge within Existing NC 12 Easement Alternative would be designed to span the entire area that is

geologically susceptible to breaching in the Rodanthe breach area, which addresses the potential for future storms to create a new breach or inlet. The superstructure (the bridge beams and deck), would be placed above the projected storm surge associated with major storms so that it cannot be struck or damaged by the surge, and the depths of the supporting bridge piles would be designed to account for the possibility that the Phase IIb bridge in the existing NC 12 easement would ultimately be off-shore as beach erosion progresses in the area. Additionally, estimated costs for the Bridge within Existing NC 12 Easement Alternative take into consideration that the bridge will be in the ocean by 2060.

Access Problems and Impacts to Property Owners and Tourists. Changes in access and community impacts noted in the comment were documented in the 2008 FEIS (Section 4.1 beginning on page 4-2) and updated in the 2010 EA (Table 2-3 on page 2-24) for the Phased Approach/Rodanthe Bridge Alternative. They are updated again in this EA for the Bridge within Existing NC 12 Easement Alternative, for which the 2010 EA design of the Phased Approach/Rodanthe Bridge Alternative was modified to take into consideration the 2060 high erosion shoreline updated in 2012 and keeping in mind a desire to minimize community impacts. Access changes and community impacts, however, remain similar to those presented in the 2008 FEIS and 2010 EA. The effect of bridge piles in the ocean on beach erosion was documented in Section 4.6.8.4 of the 2008 FEIS (on page 4-67). Clarifications were made in Appendix C of the Phase IIa ROD in response to this commenter's comments 14 to 16.

Bridge within Existing NC 12 Easement and Beach Nourishment Alternative. This alternative was not selected as a detailed study alternative for Phase IIb for reasons documented in Section 2.4.1 of this EA.

9. **Comment:** "The proposed bridge from Rodanthe through the Pamlico Sound was originally proposed as part of the "Road North/Bridge South" and "All Bridge" alternatives. Because it now could also be combined with one of the other proposed options, we discuss it separately from the relocation options covered in the previous section.

No matter which other option the proposed bridge would be linked to, a Rodanthe area bridge would require a new easement through two acres of estuarine emergent wetland areas in the Refuge in order to rejoin the existing NC 12 corridor; such a new easement would likely be denied as incompatible for the reasons given above. Here too, on-site compensatory mitigation would be impossible because there are no equivalent wetlands NCDOT could restore. For all these reasons, the NCDOT Handout concedes that this option is "[n]ot likely to be found compatible with the Refuge's mission and purpose" and thus it could not be constructed. (Handout at 10).

In addition, the proposed bridge would travel through areas of known submerged aquatic vegetation (SAV), which are also classed as EFH because they provide refuge from predators and foraging areas for juvenile and adult fish. As discussed above, the Magnuson-Stevens Act requires consultation with the Secretary of Commerce before any action is taken that might adversely affect EFH. In this case, the proposed bridge would fill approximately 1.4 acres of SAV (see FEIS at 4-88) and shade 5.3 acres of SAV (Handout at 10).

The bridge would also require a § 404 permit from the Army Corps of Engineers for discharge and fill in jurisdictional waters. Such discharges are not permitted if a practicable alternative exists that would have a lesser adverse impact on the aquatic ecosystem. 40 C.F.R. § 230.10(a)(2). As discussed earlier, the in-corridor Rodanthe bridge, as well as a long Pamlico Sound Bridge or a ferry system, would offer practicable alternatives with lesser adverse impact.

The Rodanthe terminus of this bridge would apparently be in the same location as the Rodanthe Bridge within Existing NC 12 Easement. As discussed above, NCDOT has acknowledged potential problems with the terminus of the latter option being located seaward of the projected 2060 shoreline. The same problem is likely to affect the Bridge on New Location option, raising its costs and increasing its environmental impact as a result.

Lastly, the proposed bridge would be quite expensive to construct due to the shallow water in the proposed bridge corridor. The water depth is less than six feet for virtually all of the bridge length. NCDOT is prohibited from dredging in SAV areas in order to use barges to construct the bridge, so instead a temporary work bridge would have to be constructed and the proposed bridge built off of that. (FEIS 4-90, 4-177). This is a much more expensive construction method than conventional barge-based bridge construction and likely means the estimates provided in the handout are artificially low.”

Response:

Refuge Compatibility. NCDOT worked with Refuge representatives to identify an alignment for the Bridge on New Location Alternative that can be considered a minor modification and be permitted under the terms of a Special Use Permit. In a letter dated July 22, 2013, USFWS-Refuge indicated that with the provision of adequate mitigation to ensure no net loss of habitat quality or quantity, the Bridge on New Location Alternative as assessed in this EA could likely be considered a minor modification to the existing NC 12 easement. The proposed alignment minimizes the amount of new easement required within the Refuge, and it allows for the return of approximately 19.27 acres of the existing easement to be returned to the Refuge. The impacts of this alignment are assessed in Chapter 4 of this EA.

Magnuson-Stevens Act Consultation. The National Marine Fisheries Service (NMFS), which is part of the US Department of Commerce, is on the project's Merger Team and EFH consultation is a part of the Phase II environmental studies. Such consultation is needed for any alternative affecting the Atlantic Ocean, Pamlico Sound, and Oregon Inlet. NCDOT and FHWA are consulting with the NMFS as required. An updated assessment of SAV and EFH impacts is included in Chapter 4 of this EA.

US Army Corps of Engineers (USACE) Permit Requirements. USACE is on the project's Merger Team. The commenter's opinion on there being practicable alternatives to the Bridge on New Location Alternative at Rodanthe is noted. The reasonableness and practicability of the Pamlico Sound Bridge Corridor and Ferry Alternatives were revisited in the Phase IIa EA (Sections 2.3.1 and 2.3.2, beginning on page 2-5), and it was re-affirmed that neither alternative was reasonable or practicable. Comments on the Phase IIa EA related to these alternatives were addressed in Appendix C of the Phase IIa ROD.

Location of Alternative Seaward of Forecast 2060 High Erosion Shoreline. NCDOT's goal with the Parallel Bridge Corridor alternatives is, where possible, to place bridge termini and surface road relocations more than 230 feet beyond the forecast 2060 high erosion shoreline (i.e., in the area that is not expected to be threatened by high shoreline erosion and sand overwash through 2060). Taking into consideration the 2060 high erosion shoreline prepared in 2012, the NC 12 intersection of the Bridge on New Location Alternative in Rodanthe is now more than 230 feet beyond the 2060 high erosion shoreline.

As a part of the PBC/TMP Alternative, NCDOT is regularly monitoring the shoreline and reconsidering the high erosion shoreline as a part of deciding when to implement future phases of the PBC/TMP Alternative. If shoreline erosion were to ultimately manifest itself in a manner similar to the 2060 high erosion shoreline used in the 2008 FEIS, NCDOT would relocate the NC 12 intersection of the Bridge on New Location Alternative to a location where it would not be threatened. If intersection relocation were to ultimately involve a portion of the Rodanthe Historic District, that also would mean the primary contributor to the District (i.e., the Chicamacomico Life Saving Station), which is seaward of NC 12, would have been lost or partially lost to beach erosion, and the historic resource issues considered in developing the Bridge on New Location Alternative would be different.

Cost. The current and past cost estimates for the Bridge on New Location Alternative assumed that a work bridge would be needed to erect a bridge when over SAV, as discussed in the response to this organization's comment 4 in Appendix C of the Phase IIa EA.

C.3 Public Comments Related to Phase IIb Made During the Phase IIa EA Comment Period

The comments and responses in this section originally appeared in the October 2013 Phase IIa ROD under the heading “Phase IIb Rodanthe Breach.” They were considered during the preparation of this EA and are presented here for the reader’s convenience with updates as needed.

- Natalie McIntosh

Ms. McIntosh states that an “emergency status” is needed for the Rodanthe ‘S’ Curves and Mirlo Beach area. She understands from conversations with Mr. Drew Joyner that there is a possibility for an emergency bridge solution prior to the implementation of Phase IIb. She states that the perception that the island is “cut off” must be avoided.

Response: The Governor declared the situation on NC 12 in the area between the temporary bridge at Pea Island inlet and the village of Rodanthe a State of Emergency on March 19, 2013. This declaration is expected to facilitate the implementation of interim measures to stabilize NC 12 at the Rodanthe ‘S’ Curves Hot Spot, prior to the construction of a long-term improvement at this location (Phase IIb). A temporary bridge was considered at the Rodanthe ‘S’ Curves Hot Spot as one option to stabilize NC 12 in the interim prior to the construction of Phase IIb. Beach nourishment also was assessed and is preferred as an interim measure. A permit application for an interim nourishment program at the Rodanthe ‘S’ Curves Hot Spot was submitted by NCDOT to USACE on June 13, 2013. USACE approved the EA for an interim beach nourishment project at the Rodanthe ‘S’ Curves Hot Spot on October 15, 2013. USACE concluded that this interim project would have no significant impacts. NCDOT continues to work with USACE to implement this interim program.

- Scott and Martha Caldwell

Mr. and Mrs. Caldwell are the owners of the Island Convenience Store and Midgett’s Campground. They list the impacts to their businesses under each of the Phase IIb alternatives, including the loss of their convenience store with the existing easement alternative and the loss of their campground with the bypass through the sound alternative. They conclude that the sound bypass is their preference between the two, because the convenience store is their main source of income.

***Response:** This position is acknowledged. The commenters' observations on the impact of the proposed alternatives to their properties are included in this EA in Section 4.2.1.*

- Keith McCulloch and Brian Van Druten

Mr. McCulloch is in favor of the bypass in the sound alternative and is against the existing easement alternative.

Mr. Van Druten states that he supports the Phase IIb option that would bypass the 'S' curves by going out into the Pamlico Sound.

***Response:** These positions are acknowledged. A "sound alternative" is one of the detailed study alternatives assessed in this EA as the Bridge on New Location Alternative.*

- Stephanie Joy Sweeney

Ms. Sweeney asks NCDOT to reconsider beach nourishment using dredged sand to sustain sports and recreation in the Rodanthe area. With regard to the bridge alternatives under consideration, she asks that NCDOT consider pushing the sound side bridge farther from shore to make it less of an eyesore and to provide visuals of the side view of the bridges from a 2nd or 3rd story perspective.

***Response:** The Merger Team (NCDOT, FHWA, and federal and state environmental resource and regulatory agencies) has advanced only bridging alternatives for detailed study in this EA. The reasons that beach nourishment was found not to be a reasonable long-term improvement are addressed in this EA in Section 2.4.1. This EA includes an analysis of impacts, including visual impacts to sound-side homes and homes along NC 12 (see Section 4.2.2). Visualizations are included in this EA as Figure 8 and Figure 9. The sound side bridge (Bridge on New Location Alternative) is 930 to 950 feet farther west in Pamlico Sound than the bridge location discussed in the 2010 EA that was presented to the public for discussion at the Phase II scoping meetings. (See Figure 4 of this EA.) This change in bridge location was made in the context of minimizing the Refuge impacts of this alternative.*

- Patrick Munson, Dhanyo Merillat-Bowers, and Janet Doll

Dr. Munson, a physician who lives in Waves and works on the mainland, stressed that the current pace of the Bonner Bridge project is not sufficient to prevent the collapse of the communities on the Outer Banks and that a permanent solution must happen sooner. He also states that the situation at the 'S' curves has advanced beyond the ability of the phased Bonner Bridge project

to address it, and supports beach nourishment as a solution between now and a permanent fix.

Ms. Merillat-Bowers is concerned that the livelihood of the island is being held hostage by the lawsuits brought by wildlife advocates and believes that beach nourishment is needed now in addition to a permanent fix.

Ms. Doll thanks NCDOT for their hard work on maintaining the 'S' Curve Hot Spot at Rodanthe and states that while a permanent fix is needed, it will take too long to construct the bridges and roads. She states that a short-term solution needs to be planned and implemented immediately, saying that tourists need a safe way to get on and off the island in order to avert disaster for the area.

Response: These positions and concerns are acknowledged. The Governor declared the situation on NC 12 in the area between the temporary bridge at Pea Island inlet and the village of Rodanthe a State of Emergency on March 19, 2013. This declaration is expected to facilitate interim measures to stabilize NC 12 (which could involve beach nourishment) at the Rodanthe 'S' Curves Hot Spot, prior to the implementation of a long-term improvement at this location (Phase IIb).

- Carol Dawson

Ms. Dawson emphasizes that no beach nourishment has happened on the island in 39 years, and that dredging and beach nourishment is needed to stabilize the hot spots and secure NC 12 as safe passage to the mainland. Ms. Dawson is opposed to the Bridge within Existing NC 12 Easement Alternative. She believes that the NCDOT's methods have been reactionary rather than proactive, and that NCDOT should look to neighboring states for preventative measures.

Response: These positions are acknowledged. Section 2.4 of the Environmental Assessment (EA) on Phase IIa explains why Beach Nourishment was eliminated from further consideration as a long-term improvement for Phase IIa. The Merger Team (NCDOT, FHWA, and federal and state environmental resource and regulatory agencies) has advanced only bridging alternatives for detailed study in this Phase IIb EA. The reasons that Beach Nourishment has been found not to be a reasonable long-term improvement for Phase IIb are addressed in this EA in Section 2.4.1.

- Michael R. Martin

In reference to recent NCDOT actions of moving sand from the NC 12 right of way and using it to cover sand bags in the 'S' Curve Hot Spot area, Mr. Martin states that it is a waste of time and money to continue these short-term cosmetic

fixes. Mr. Martin wonders whether the dredging permits have been obtained, and if not, who is holding up the process.

***Response:** Covering the sandbag piles in the Rodanthe 'S' Curves Hot Spot area is required by state law and the permit that allowed for the placement of the sand bags. The sand used was the most readily available and its transport did not require a permit. The Governor declared the situation on NC 12 in the area between the temporary bridge at Pea Island inlet and the village of Rodanthe a State of Emergency on March 19, 2013. This declaration is expected to facilitate the implementation of interim NC 12 stabilization at the Rodanthe 'S' Curves Hot Spot.*

- Thomas Dolina

Mr. Dolina supports a longer span avoiding the 'S' Curves.

***Response:** This position is acknowledged.*

Appendix D

2060 High-Erosion Shoreline



Aerial date: 2014

COMPARISON OF FEIS AND UPDATED FORECAST 2060 HIGH-EROSION SHORELINE LOCATIONS

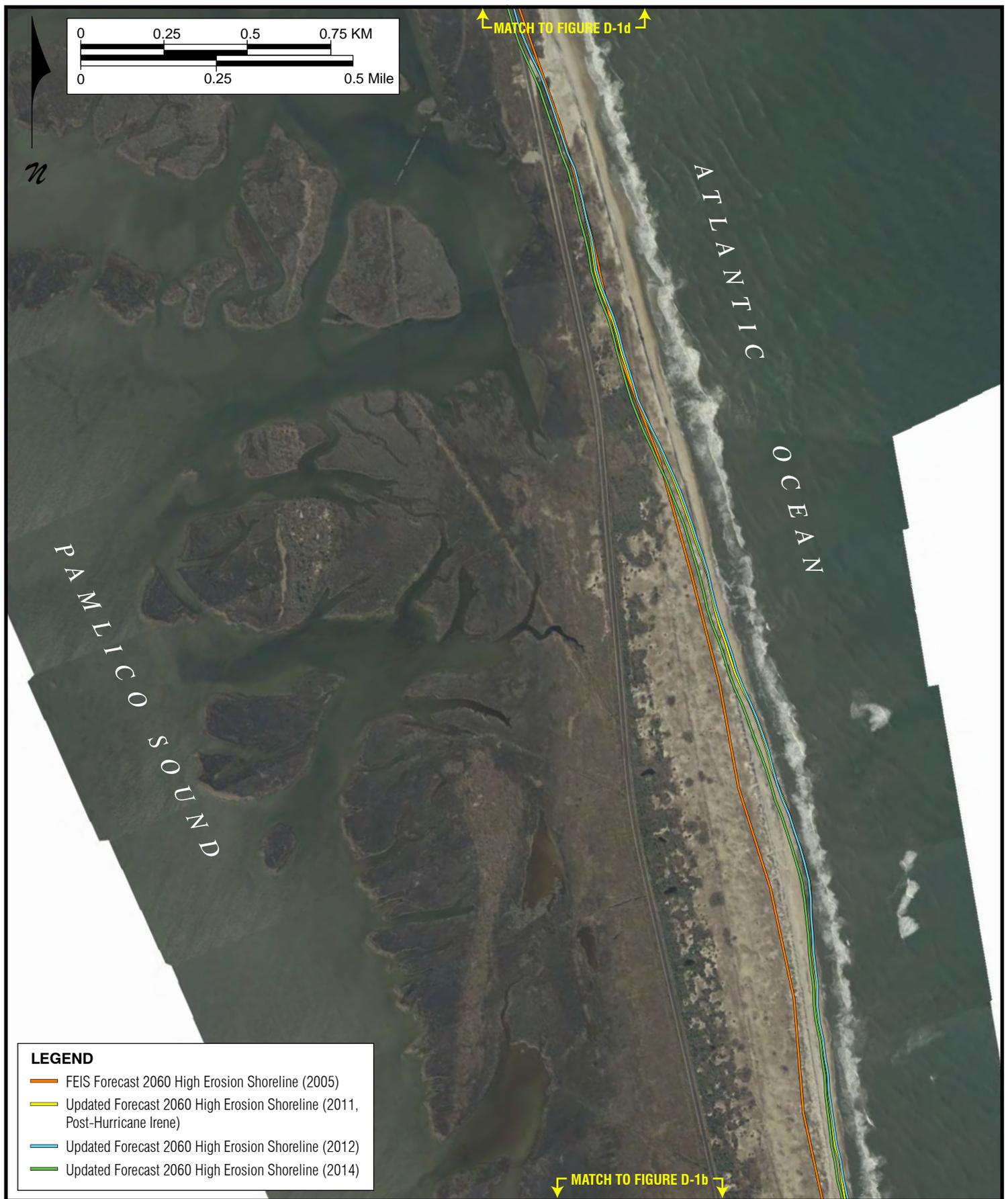
Figure D-1a



Aerial date: 2014

COMPARISON OF FEIS AND UPDATED FORECAST 2060 HIGH-EROSION SHORELINE LOCATIONS

Figure D-1b



Aerial date: 2014

<p>COMPARISON OF FEIS AND UPDATED FORECAST 2060 HIGH-EROSION SHORELINE LOCATIONS</p>	<p>Figure D-1c</p>
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Aerial date: 2014

COMPARISON OF FEIS AND UPDATED FORECAST 2060 HIGH-EROSION SHORELINE LOCATIONS

Figure D-1d



Aerial date: 2014

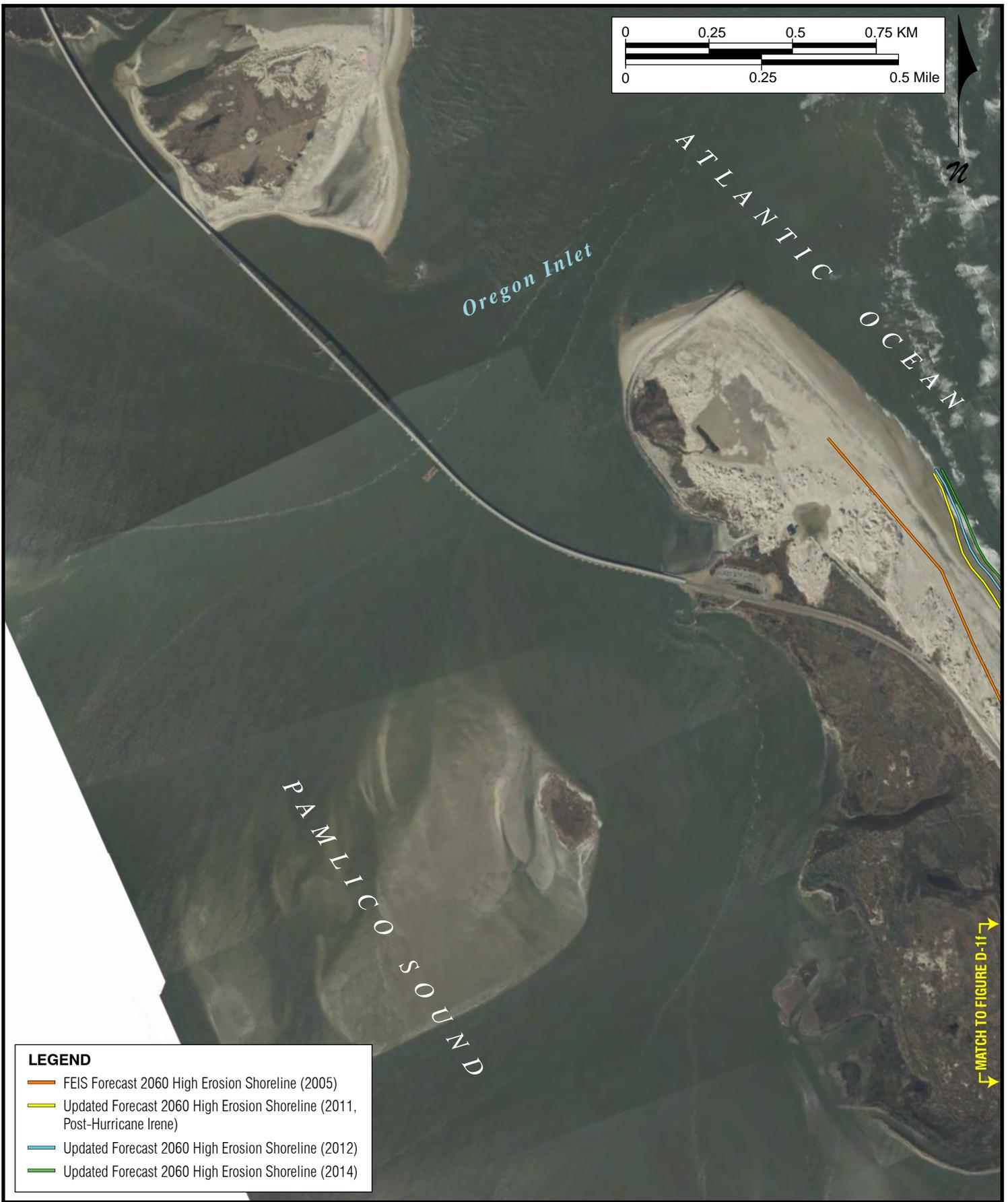
COMPARISON OF FEIS AND UPDATED FORECAST 2060 HIGH-EROSION SHORELINE LOCATIONS

Figure D-1e



Aerial date: 2014

<p>COMPARISON OF FEIS AND UPDATED FORECAST 2060 HIGH-EROSION SHORELINE LOCATIONS</p>	<p>Figure D-1f</p>
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Aerial date: 2014

<p>COMPARISON OF FEIS AND UPDATED FORECAST 2060 HIGH-EROSION SHORELINE LOCATIONS</p>	<p>Figure D-1g</p>
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Appendix E

Relocation Reports

EIS RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

E.I.S. CORRIDOR DESIGN

WBS ELEMENT:	13201.10 28025	COUNTY	Dare	Alternate	Red	of	2	Alternate
T.I.P. No.:	B-2500B							
DESCRIPTION OF PROJECT:	NC-12 Rodanthe Long-Term Improvements, Bridge on New Location Alternative							

ESTIMATED DISPLACED					INCOME LEVEL				
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP
Residential	2	0	2	0	0	0	0	2	0
Businesses	0	2	2	0	VALUE OF DWELLING				
Farms	0	0	0	0	DSS DWELLING AVAILABLE				
Non-Profit	0	0	0	0	Owners	Tenants	For Sale	For Rent	
					0-20M	\$ 0-150	0-20M	\$ 0-150	
					20-40M	150-250	20-40M	150-250	
					40-70M	250-400	40-70M	250-400	
					70-100M	400-600	70-100M	400-600	
					100 UP	600 UP	100 UP	38	600 UP
					TOTAL	2	0	38	0

ANSWER ALL QUESTIONS		
Yes	No	Explain all "YES" answers.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	1. Will special relocation services be necessary?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2. Will schools or churches be affected by displacement?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. Will business services still be available after project?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Will any business be displaced? If so,

REMARKS (Respond by number)		
		<p>3. There are other businesses in the area outside the acquisition areas.</p> <p>4. 1) Strip Mall with the following shop:</p> <p style="padding-left: 40px;">Island Convenience Auto Repair Garage – 4 employees</p> <p style="background-color: yellow;">The other 5 shops in this strip mall are vacant in anticipation of the project.</p> <p style="padding-left: 40px;">2) Money's Worth Rentals – 3 employees</p> <p style="background-color: yellow;">Please note that a Campground is in the acquisition area, which has 23 RV hook-ups, 7 of which are currently occupied within the acquisition area of this alternate, with only 5 hook-ups out of the 23 being unaffected by the project.</p> <p>6. MLS, Realtor.com, newspaper, local realty offices</p> <p>8. As required by law</p> <p>11. Economic Improvement Council, Inc. handles Section 8 housing for Dare County</p> <p>12. There are plenty of houses for sale in the area.</p> <p>13. This might be an issue due to the high prices of some of the local homes for sale.</p> <p>14. MLS, Realtor.com, newspaper, local realty offices</p>
<p>indicate size, type, estimated number of employees, minorities, etc.</p>		
<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. Will relocation cause a housing shortage?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	6. Source for available housing (list).
<input type="checkbox"/>	<input checked="" type="checkbox"/>	7. Will additional housing programs be needed?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	8. Should Last Resort Housing be considered?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	9. Are there large, disabled, elderly, etc. families?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	10. Will public housing be needed for project?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	11. Is public housing available?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	12. Is it felt there will be adequate DSS housing available during relocation period?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	13. Will there be a problem of housing within financial means?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	14. Are suitable business sites available (list source).
<p>15. Number months estimated to complete RELOCATION? 18</p>		

 Robert Woodard Right of Way Agent	9/19/13		9/19/13	 Relocation Coordinator
Date				Date

EIS RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

E.I.S. CORRIDOR DESIGN

WBS ELEMENT:	13201.10 28025	COUNTY	Dare	Alternate	Blue	of	2	Alternate
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T.I.P. No.:	B-2500B
DESCRIPTION OF PROJECT:	NC12 -- Rodanthe Long-Term Improvements, Bridge within Existing NC 12 Easement

ESTIMATED DISPLACEDS					INCOME LEVEL							
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP			
Residential	5	0	5	0	0	0	0	2	3			
Businesses	1	1	2	0	VALUE OF DWELLING							
Farms	0	0	0	0	DSS DWELLING AVAILABLE							
Non-Profit	0	0	0	0	0-20M	0	\$ 0-150	0	0-20M	0	\$ 0-150	0

ANSWER ALL QUESTIONS											
Yes	No	Explain all "YES" answers.									
<input type="checkbox"/>	<input checked="" type="checkbox"/>	1. Will special relocation services be necessary?									
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2. Will schools or churches be affected by displacement?									
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. Will business services still be available after project?									
<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Will any business be displaced? If so,									

REMARKS (Respond by Number)

3. There are other businesses in the area outside the acquisition areas.

4. 1) Strip Mall with the following shop:
Island Convenient Auto Repair Garage – 4 employees

The remaining shops in the strip mall are vacant in anticipation of the project.

2) Island Convenient Store and Liberty Gas – 5 employees

5. indicate size, type, estimated number of employees, minorities, etc.

5. Will relocation cause a housing shortage?

6. Source for available housing (list).

7. Will additional housing programs be needed?

8. Should Last Resort Housing be considered?

9. Are there large, disabled, elderly, etc. families?

10. Will public housing be needed for project?

11. Is public housing available?

12. Is it felt there will be adequate DSS housing available during relocation period?

13. Will there be a problem of housing within financial means?

14. Are suitable business sites available (list source).

15. Number months estimated to complete RELOCATION? **18**

6. MLS, Realtor.com, newspaper, local realty offices

8. As required by law.

11. Economic Improvement Council, Inc. handles Section 8 housing for Dare County

12. There are plenty of houses for sale to cover the displacees.

13. Some houses in this market may be priced too high for our displacees.

14. MLS, Realtor.com, newspaper, local realty offices

NOTE: The proposed 15' Aerial Easements (AUE) may not interfere with any existing private septic systems and/or drain lines. However, if they do, then a determination of the actual location will be necessary as well as any possible "repair areas". There could also be additional relocatees due to these issues, which are not being shown on this report.

Additionally. Please avoid the cemetery on Sea Gull Street

<p>Robert Woodard Right of Way Agent</p>	Date	11/6/13		<p>Relocation Coordinator</p>	Date	11/6/13
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Appendix F

**Comments on the 2013 Phase
IIb EA and Responses**

F. Comments on the 2013 Phase IIb EA and Responses

This section summarizes and provides responses to comments on the 2013 Phase IIb Environmental Assessment (EA) received from the public, state and federal environmental resource and regulatory agencies, and non-governmental organizations (NGOs). The written correspondence received from agencies and NGOs is included in Appendix G. The comments and responses are presented in the following sections:

F.1	Public Comments	F-1
F.1.1	Oral Comments and Responses	F-3
F.1.2	Written Comments and Responses	F-9
F.2	Government Agency Comments and Responses	F-33
F.2.1	Federal Agencies	F-33
F.2.2	State Agencies.....	F-47
F.2.3	Local Government—Dare County.....	F-56
F.3	Non-Governmental Organization Comments and Responses	F-59
F.3.1	Citizens Action Committee to Replace Herbert C. Bonner Bridge – Submitted by Beth Midgett, Chair	F-59
F.3.2	Hatteras Island Property Management Group – Sun Realty, Hatteras Realty, Outer Beaches Realty, Surf or Sound Realty, Colony Realty, Midgett Realty	F-60
F.3.3	Southern Environmental Law Center	F-61
F.3.4	Surfrider Foundation, Outer Banks Chapter	F-90

F.1 Public Comments

A series of three Combined Public Hearings were held on the following dates:

- January 7, 2014 at the Ocracoke Community Center in Ocracoke
- January 8, 2014 at the Rodanthe-Waves-Salvo Community Center in Rodanthe and Cape Hatteras Secondary School in Buxton
- January 9, 2014 at the Dare County Administration Building in Manteo

The public hearing at Ocracoke was an open house without a formal presentation. The public hearing in the Rodanthe area consisted of an open house in Rodanthe followed by a formal presentation in Buxton at the larger Cape Hatteras Secondary School to accommodate the expected number of participants. The Manteo hearing was an open house followed by a formal presentation. Citizens were given the opportunity to comment and ask questions following the two formal presentations. An opportunity to record oral comments was provided in Ocracoke. Approximate attendance was:

- Ocracoke Open House Hearing: 22
- Rodanthe-Waves-Salvo Community Center Open House: 107
- Buxton Formal Hearing: 46
- Manteo Open House and Formal Hearing: 43

The hearings presented the North Carolina Department of Transportation's (NCDOT) detailed study alternatives for long-term improvements in the Rodanthe Breach area (Phase IIb). A slideshow and handouts were provided. The open house meeting rooms included multiple stations that were manned with project staff to field questions and comments from the public. The primary stations focused on the proposed Phase IIb detailed study alternatives, including hearing maps and visualizations. Informational stations on other NC 12 projects and concerns not directly associated with Phase IIb included: the status of NC 12 Pea Island long-term improvements (Phase IIa), the status of the Oregon Inlet Bridge replacement (Phase I) and Bonner Bridge repairs, other future NC 12 improvement projects south of Rodanthe, and right-of-way acquisition. Other stations included a social media table and an area to submit comments.

The public comment period ended January 24, 2014.

A total of 79 written comments, 12 oral comments, and three petitions were received within the comment period. Commenters expressed their preferences either for one of the two detailed study alternatives (the Bridge within Existing NC 12 Easement Alternative and the Bridge on New Location Alternative) or expressed a preference for another solution. The reasons that a commenter prefers an alternative are provided, and in cases where clarifications or corrections are required, additional information is provided in the response.

A total of 12 commenters expressed a preference for the Bridge within Existing NC 12 Easement Alternative. The primary reasons for preferring this alternative were: lower natural resource impacts, lower cost, avoidance of impact to Pamlico Sound recreation activities and sound views, it makes use of the existing easement, and the belief that permits and right-of-way would be easier to obtain for this alternative than for the other detailed study alternative.

A total of 33 commenters and 64 petition signers expressed a preference for the Bridge on New Location Alternative. The primary reasons for preferring this alternative tended to emphasize the position that this alternative's environmental and community impacts would be less than the Bridge within Existing NC 12 Easement Alternative. Reasons include: it avoids visual impacts along NC 12 in Rodanthe, it does not interfere with the character/appeal/safety of the beach, less recreation impact, it does not fragment the Rodanthe community, it causes less disturbance to shoreline processes, it minimizes property value impacts, less inconvenience to local traffic, it does not displace the Island Convenience Store, it reduces NC 12's footprint in the Refuge, it avoids building on an eroding beach, and it is in the calmer Pamlico Sound as opposed to the ocean, thereby reducing risk.

Five commenters preferred whichever of the two detailed study alternatives could be built more quickly.

Comments also were received that favored a solution other than either of the two detailed study alternatives. The largest amount of commenters preferred beach nourishment instead of a bridge project. This solution was favored by 26 commenters and 208 signers of a petition. In addition, there were two comments in favor of the Bridge within Existing NC 12 Easement Alternative but using beach nourishment instead of a bridge within Rodanthe, one comment in favor a surface road on new location, five comments in favor of using geosynthetic materials (or another sort of breakwater or jetty) to stabilize the beach, and one comment in favor of high speed ferries. A petition signed by 269 individuals was submitted expressing concern that a bridge in the surf, as would occur with the Bridge within Existing NC 12 Easement Alternative, would be a safety hazard to swimmers and surfers.

F.1.1 Oral Comments and Responses

Twelve oral comments were made. No oral comments were made in Ocracoke; 10 oral comments were made in Buxton; and two oral comments were made in Manteo. The two commenters in Manteo also made similar comments in Buxton and their comments are combined as indicated below.

1. **Janet Kligge** (January 8, 2014, Buxton)

Ms. Kligge stated that her family has a house in Mirlo Beach and that the personal impact to their house and guests would be that, instead of a view of a graceful bridge out in the sound (Bridge on New Location), they would have a view of a the broad side of the bridge with no ocean view (Bridge within Existing NC 12 Easement). Aside from this impact, she expressed concern about the environmental impact on the fragile island. She is concerned about what the piles are going to do to the stability of the area, and is concerned because there are no other examples of bridges being built in the ocean like this one would be in the future.

Response: *The commenter's position is acknowledged. The effect of bridge piles in the ocean with the Bridge within Existing NC 12 Easement Alternative is discussed in Section 4.6.8.4 of the 2008 FEIS on page 4-67. The commenter is correct that no other bridges have been built in the ocean paralleling a sandy shoreline. However, concrete piers, such as the one at USACE's Field Research Facility in Duck, have been built and maintained along the Outer Bank's shoreline. The NCDOT's Preferred Alternative is now the Bridge on New Location Alternative, as discussed in Section 3.4 of this revised Phase IIb EA.*

2. **Wes Hutchinson** (January 8, 2014, Buxton)

Mr. Hutchinson owns a home on Cross of Honor Way and has observed the area and its visitors for the past 13 years. He encourages others to read the EA. An impact that concerns him is the potential safety hazard of the Bridge within Existing NC 12 Easement Alternative; he believes that based on the activity he sees among swimmers and surfers, there is a potential for loss of human life or injury once the bridge is in the surf. He also points out that NCDOT's panel of coastal experts came out against the preferred alternative (existing easement). He says that the beach, once it is under the bridge, will not be the beach "as we know it," but will rather be like a parking garage. He believes that both bridges will cause serious economic harm and that all of the 150 property owners in the area will lose approximately \$100,000 in property value. He also points out that neither of the bridges provides protection for northern Rodanthe, and that nourishment is the solution to the problem elsewhere on the east coast. He suggests that the upcoming emergency nourishment will provide information on how cost-effective nourishment would be.

Response: *The commenter's position is acknowledged. Impacts on recreational activities due to bridge piles on the beach or in the ocean with the Bridge within Existing NC 12 Easement Alternative are addressed in Section 4.2.4.2 of the 2013 Phase IIb EA (beginning on page 4-21) and in Section 4.5.3.3 of the 2008 FEIS beginning on page 4-47. The Peer Exchange Panel of coastal engineers and scientists that met in October 2011 indicated that the Bridge within Existing NC 12 Easement Alternative is not the best long-term solution at the Rodanthe Breach site because of the area's high shoreline erosion rate. The panel also recommended that beach nourishment not be used as a long-term solution at the Rodanthe breach site. Both of these findings are noted in Section 2.6.1 of the 2013 Phase IIb EA and this revised Phase IIb EA. The NCDOT's Preferred Alternative is now the Bridge on New Location Alternative, as discussed in Section 3.4 of this revised Phase IIb EA. NCDOT's conclusion not to study a nourishment alternative in detail and the reasons why are presented in Section 2.4.1 on page 2-8 of the 2013 Phase IIb EA. It was eliminated because of uncertainties related to the lack of availability of a suitable sand source over the project's estimated 50-year life (i.e., through 2060); it would not adequately protect NC 12 from potential future breaches/inlets (either from the ocean or sound-side [such as Hurricane Irene] storm surges), although the dunes associated*

with this alternative would reduce the risk of a breach occurring in this area since NC 12 would remain at-grade; it would not allow natural island processes to occur; and, based on the opinions of US Fish and Wildlife Service (USFWS) representatives, it is not likely to be found compatible with the Refuge's mission and purpose. It also was a recommendation of the October 2011 Peer Exchange coastal expert panel that a long-term beach nourishment program not be implemented in the Phase IIb project area because of the high rate of shoreline erosion in this area. The impacts of both a nourishment alternative and a shorter bridge within the existing NC 12 easement with nourishment in the Rodanthe area are presented in Chapter 4 of the 2008 FEIS.

3. **Tom Kligge** (January 8, 2014, Buxton)

Mr. Kligge is a homeowner on the island and points out that one of the main reasons that renters choose to come to his home and to Rodanthe in general is the views from the decks. He points out that the homeowners in the area are dependent on rental income and that is going to be wiped out if the views are destroyed. He expresses that he spent his life savings on his home in Rodanthe, and while he understood that Mother Nature might someday take it away, he never expected the Department of Transportation to destroy it. He states that there are over 100 homes that will be affected by the bridge coming through Rodanthe, and that there is not compensation for homes that are not directly taken but still suffer a loss of aesthetic value.

***Response:** The commenter's position is acknowledged. Visual impacts associated with both detailed study alternatives are discussed in 4.2.2 of the 2013 Phase IIb EA and this revised Phase IIb EA. The NCDOT's Preferred Alternative is now the Bridge on New Location Alternative, as discussed in Section 3.4 of this revised Phase IIb EA.*

4. **Scott Caldwell** (January 8, 2014, Buxton)

Mr. Caldwell states that he is representing Island Convenience store, which he owns along with adjacent commercial properties. He states that both detailed alternatives would seriously impact his properties, but he will list the cons associated with the Bridge within Existing NC 12 Easement Alternative. This alternative would require the closure of the 31-year-old Island Convenience store, which provides a variety of services year round, serves as a valuable community asset, and is his family's main source of income. He points out that the 35 store employees would lose their employment. He states that the existing easement bridge also would be located in the ocean, according to the 2060 projected shoreline, and is not a long-term solution. He says that Island Convenience is strongly in favor of the Bridge on New Location Alternative because it prevents the loss of the Island Convenience store, it is more attractive looking, and it has a much more fluid traffic pattern.

***Response:** The commenter's position is acknowledged. The commenter is the owner of most of the businesses displaced by the detailed study alternatives. His preferences were first brought up during project scoping and were documented on page 4-16 of the 2013 Phase IIb EA in paragraph 2. Mr. Caldwell also submitted written comments, which are discussed in the written comments and responses below. The NCDOT's Preferred Alternative is now the Bridge on New Location Alternative, as discussed in Section 3.4 of this revised Phase IIb EA. As designed currently, it would not displace the Island Convenience store.*

5. **Bradley Payne** (both January 8, 2014 at Buxton and January 9, 2014 at Manteo)
Mr. Payne owns a property just outside the existing right-of-way on Seagull Street. While he is concerned about personal impacts to his properties, he sees a larger issue with the alternatives. He states that the bridge built in the existing right-of-way will be subjected to wave action 24 hours a day/seven days a week. It also will have to be able to withstand the impact of the 15 to 25 homes that will wash directly west when the ocean takes them. He also points out that the bridge could be a potential target for terrorism. If a bridge like this is damaged, emergency ferries would need to be used for a longer period because of the length of time to repair a bridge of this nature. He is concerned that the Bridge within Existing NC 12 Easement will eventually end up in the ocean, and that the Mirlo Beach community would be sacrificed, and he is concerned that if Mirlo Beach is sacrificed, Buxton might be next and tourism will be driven away. Mr. Payne also expressed concern that the detailed study alternatives were chosen too quickly and that beach nourishment should be revisited as a solution.

***Response:** The commenter's position is acknowledged. Just as the Phase I bridge at Oregon Inlet is designed to withstand the impact of a hopper dredge, which demolished a section of the Bonner Bridge in late 1990, the Bridge within the Existing NC 12 Easement Alternative (both its foundations and bridge spans) will be designed to withstand vessel and other impacts. The proposed bridge height is higher than the forecast 100-year storm surge (mean high water), as indicated in Section 3.2 of the 2013 Phase IIb EA and this revised Phase IIb EA. The NCDOT's Preferred Alternative is now the Bridge on New Location Alternative, as discussed in Section 3.4 of this revised Phase IIb EA.*

NCDOT did consider long-term nourishment and its applicability to the Phase IIb project area. NCDOT also considered a combination of a bridge in the Refuge and nourishment in Rodanthe. NCDOT's conclusion not to study these alternatives in detail and the reasons why are presented on in Section 2.4.1 of the 2013 Phase IIb EA and Section 2.5.1 of this revised Phase IIb EA. Also see the response to Mr. Hutchinson's oral comments above.

6. **Warren Judge, Chairman of Dare County Commissioners** (both January 8, 2014 at Buxton and January 9, 2014 at Manteo)

Mr. Judge states that the community of Hatteras is a mobile community that depends on having road access for daily life and for health and welfare, such as medical services. Mr. Judge points out that Hatteras represents 17 percent of the annual tax base, and 25 percent of the commerce in Dare County. He appreciates the contribution the rentals and Island Convenience make to that economy, and points out that the bridges are the reason that Hatteras was able to develop. He points to other areas that have used beach nourishment successfully, including Nags Head. He says that three other towns in Dare County are designing nourishment projects to protect their ocean front. Mr. Judge urges NCDOT to move forward with a solution as quickly as possible and to use beach nourishment in conjunction with either bridge alternative. He also suggests revisiting the alternatives to make adjustments that could make them less problematic, such as shortening the existing easement bridge so that it does not take the Island Convenience business.

Response: The commenter's position is acknowledged. NCDOT has been doing and will continue to do everything it can to advance this project. A design-build contract for the Selected Phase IIb Alternative will be issued as soon as possible in conjunction with completion of the National Environmental Policy Act (NEPA) process and following public and agency review of this revised Phase IIb EA. Regarding beach nourishment as an alternative, see the response to Mr. Hutchinson above. The NCDOT's Preferred Alternative is now the Bridge on New Location Alternative, as discussed in Section 3.4 of this revised Phase IIb EA, which would not displace the Island Convenience business.

7. **Dave Dawson** (January 8, 2014, Buxton)

Mr. Dawson points out that contrary to reports in the News and Observer, people on the island are not all wealthy people using Cape Hatteras as a playground, but rather many depend on the vacation rentals for livelihoods. He says that visitors come to enjoy the beautiful beaches, and that building bridges and letting natural processes erode the beach is an excuse not to do beach nourishment. He points out that building the bridges is more expensive than beach nourishment and that there are places all over the world where it is done.

Response: The commenter's position is acknowledged. Regarding beach nourishment as an alternative, see the response to Mr. Hutchinson above.

8. **Kyle O'Neal** (January 8, 2014, Buxton)

Mr. O'Neal explains how deep his roots are in the area and advocates for beach nourishment as a solution. He points to the nourishment that was done after Hurricane Isabel and points out that those beaches are in good shape 10 years later. Mr. O'Neal expressed concern that either of the bridges will cause problems for

homeowners and both would be bad for Rodanthe. He points out the cons of each of the bridges, including impacts to views, difficulty of building over the water, and costs, and reiterates his support of beach nourishment instead of a bridge. Mr. O'Neal also expresses concern about what is going to happen to Buxton.

***Response:** The commenter's position is acknowledged. Regarding beach nourishment as an alternative, see the response to Mr. Hutchinson above. Since 2013, NCDOT has continued to examine other NC 12 improvement projects, including the Buxton to Avon Planning and Environmental Studies for Maintaining Roadway (State Transportation Improvement Program [STIP] No. R-4070B) referenced by the commenter), as well as the Hatteras Village Hot Spot Improvements (STIP No. R-3116B) and the Ocracoke Island Hot Spot Improvements (STIP No. R-3116A). A feasibility study for the Buxton to Avon project was completed in December 2015. Feasibility studies for the other two projects are expected to be complete by early- to mid-2016. The feasibility studies assess the merits of alternative future projects. None of the projects, however, are funded in the current 2016 to 2025 STIP.*

9. **Jeff Dawson** (January 8, 2014, Buxton)

Mr. Dawson advocates for beach stabilization using geotextiles that will catch and hold sand naturally. He points to examples where this technology has been used, including the Great Lakes, Arabian Gulf, and Greece. He says that by not stabilizing the beach, the oceanfront is being abandoned and will become an uninhabitable mess that no one will use for activities like fishing and surfing. Mr. Dawson states that the proposed geotextiles will be permissible under the existing laws if done correctly.

***Response:** Geotextile containers consist of an engineering textile filled with sand. The commenter's oral comment and written comments below indicate he is proposing the installation of geotextile containers to serve as a breakwater. When serving as a breakwater, geotextile containers are installed parallel to the shoreline and in the nearshore zone. Geotextile containers are not a reasonable alternative for long-term reliability of NC 12 for two reasons.*

First, their installation for the use envisioned by the commenter is not permitted under current North Carolina state law. The potential use of geotextile containers for shoreline protection would be regulated by the North Carolina Administrative Code on Ocean Hazards. North Carolina Administrative Code outlines specific use standards for the ocean hazard areas. Under the use standard for all activities, the construction of breakwaters on the oceanfront is prohibited:

"Permanent erosion control structures may cause significant adverse impacts on the value and enjoyment of adjacent properties or public access to and use of the

ocean beach, and, therefore, are prohibited. Such structures include bulkheads, seawalls, revetments, jetties, groins and breakwaters.”

NCDOT is not aware of any changes or pending changes in state law or regulations that would make the use of geotextile containers as breakwaters permissible.

Second, the stability of geotextile container installations during storm events, such as hurricanes, that occur along the North Carolina coast is a concern. Failure modes for geotextile containers during storm events could include failure because of scour (undermining at the base), rotation, and lateral displacement. One NCDOT goal is to minimize the necessity of major repairs to NC 12 following storm events, and NCDOT remains concerned that geotextile containers would not adequately support that goal.

10. Allen Burrus, Dare County Commissioner (January 8, 2014, Buxton)

Mr. Burrus expresses his support for a bridge that can be permitted and built. He states that ferries will not work and that bridges are the answer and need to be done as quickly as possible.

***Response:** The commenter’s position is acknowledged. Permits likely can be obtained from environmental regulatory agencies and the Pea Island National Wildlife Refuge for either detailed study alternative, although the North Carolina Department of Environmental Quality—Division of Coastal Management (NCDEQ-DCM) has expressed concern with the CAMA permissibility of the Bridge within Existing NC 12 Easement Alternative.*

State and federal environmental resource and regulatory agencies are unanimous in their support for the 2014B Bridge on New Location Alternative, the current Preferred Alternative.

F.1.2 Written Comments and Responses

Seventy-nine written comments were received. The comment form asked for comments on the following topics:

- My preferred alternative is and the reasons for my preference are:
- My preferred alternative could be improved by:
- My concerns with other alternatives are:
- I have the following additional comments and questions:

In organizing the written comments from all sources and preparation of responses, the following categories were used:

- Preferred Alternative and the Reasons for Preference
- Potential Improvements to the Detailed Study Alternatives
- Project Implementation Need and Timing
- Environmental Impacts
- Access to Private Property
- New Oregon Inlet Bridge (Phase I)
- Pamlico Sound Bridge
- Other
- Petitions

When a single commenter provided comments for more than one topic, their comments are separated by topic and the commenter’s name is listed under each topic where he or she made comments.

Preferred Alternative and the Reasons for Preference

1. **Comment:** We prefer the Bridge within Existing Easement Alternative for the following reasons:

Names	Reasons
1. Patricia Fort	Other alternative too expensive; foundation in the ground for support; shorter bridge.
2. Karen Lebing	Low environmental impacts; new location has impacts to sound wildlife; access to the Refuge; lower cost; lower impact on kite surfing.
3. Gary Lebing	Less environmental impact; lower cost; less impact on soundside water sports.
4. Ronald R. Watkins	Lower construction costs; uses existing NC 12 easement.
5. Harold G. Howell	New location alternative destroys the view of the sound.
6. Leslie Gilbert	Believe obtaining permits would be quicker for this alternative.

Names	Reasons
7. Harry W. Gilbert, III	Believe permitting and construction would be faster using the existing location; concerns about permitting and right-of-way acquisition with the new location alternative.
8. Nicole Muller	No reason given.
9. Arleen Burley	It is more cost-effective and will keep our public land out of the hands of a special interest group. Concerned about the cost and environmental impact of a bridge on new location.
10. Orville Scarborough	Fastest means of getting safe access on and off the island.
11. Mark R. Dingman	The immediate environmental impact on the sound will be less with the existing easement alternative; cost is less; more difficult for the Southern Environmental Law Center to delay construction.
12. Horatio Beck	Prefer the Bridge within Existing NC 12 Easement, despite the fact that it takes 2 lots and 3 buildings which I own. The New Location alternative would ruin view of a lot of homeowners on the sound side.

Response: The primary reasons for preferring the Bridge within the Existing Easement in the 2013 Phase IIb EA were: lower natural resource impacts, lower cost, avoids impact to sound recreation activities and sound view, makes use of the existing easement, and permits and right-of-way likely would be easier to obtain. These positions are acknowledged. Ultimately, the refined 2014B Bridge on New Location Alternative was selected as the Least Environmentally Damaging Practicable Alternative (LEDPA) and Preferred Alternative for the reasons presented in Section 3.4 of this revised Phase IIb EA. Federal and state environmental resource and regulatory agencies all concurred with this decision. No insurmountable problems in obtaining environmental permits are expected.

2. **Comment:** We prefer the Bridge on New Location Alternative for the following reasons:

Name	Reason
1. Jack Painter	Move the road while you still can.
2. Scott Leggatt	Putting an LA freeway raised structure through Rodanthe will take a beautiful community with unparalleled ocean views and turn it into ugly chunks of concrete filled with graffiti; bridge on new location will provide infrastructure for fish and other aquatic life and better views and a better drive.

Name	Reason
3. Marilyn Midgett	The bridge over the sound looks more natural and further away from the ocean.
4. Leslie J. Robinson	The existing NC 12 easement bridge is ugly; need to keep our year-round gas station.
5. Tom Kligge	Existing NC 12 easement bridge would destroy northern Rodanthe property values, rental income, and mystique; there are obvious problems with having a bridge in the violent surf.
6. Janet Kligge	The aesthetics of the bridge on new location are more acceptable; bridge in existing easement would become a view of the side of the bridge, will cause reduced property values, and is an untested engineering feat. No one can cite any bridges built in a dynamic ocean. This could destabilize the area sooner rather than later. The bridge through the calmer sound would seem the wisest, most logical way to go.
7. Tom Murphy	20-30' height within existing easement would be really intrusive; gets the bridge away from the beach; the bridge can be lower; less inconvenience to local traffic.
8. John & Nancy Fleischer	Main concern is for something to be done; the emergency ferry system is dependable and well-managed, but still adds about 3 hours each way on any trip north.
9. Wes Hutchinson	Existing easement alternative causes environmental damage (the beach would be destroyed); causes the greatest harm in terms of public safety (drownings and injuries); all north Rodanthe properties would suffer substantial visual impact; harms property values with more homes near the bridge.
10. Rev. Benjamin Wolf	This option is more sustainable; according to environmental studies and experts, existing easement alternative would soon be in the ocean, threatening the structure and the appeal of the beach; this option affects the community less; less visual impact; affects less homes, and protects a business/community resource (the gas station).
11. Jack W. Cahoon	The existing easement alternative will displace the only business in Rodanthe/Waves/Salvo that provides year-round gas, meals, groceries, and other items.
12. Peter Romeyn	No reason given.
13. Carol Hooper Rensch	Homeowners on Hatteras Island and need to be able to get to it.

Name	Reason
14. Joseph F. Noce	The existing easement alternative would fragment Rodanthe, especially the Mirlo Beach and Corbina Shores communities; the bridge on new location would encounter less resistance from environmental groups, residents, homeowners, and business owners; the new location alternative could be extended should additional breaches occur between Bonner Bridge and Rodanthe.
15. William Olander	Less disturbance to natural shoreline processes; less impact to island access during construction; will allow longer-term stability of surrounding area. The existing easement alternative is too close to the Atlantic Ocean and will cause noise and obstruction in Rodanthe.
16. Doug West	Fewer right-of-way concerns; will drastically reduce the NC 12 footprint in the Refuge; would help protect this vulnerable area from further erosion (a wind and wave barrier that would significantly reduce damage from winds and waves from the west); impact on views would be reduced.
17. Richard E. Austin	The bridge on the sound side will not be in the surf zone years from now; the bridge in the easement will be in the ocean in a couple of years.
18. Mick Harris	The Bridge on New Location has less right-of-way and visual impacts. The bridge in the easement will be an eyesore and a hazard to swimmers and surfers. Over the years, many rescues and one drowning has occurred at the homes that were in the ocean at high tide, can see the same happening with piles in the surf.
19. Lee Haller	The ocean will be encroaching on the north end of Rodanthe and building a bridge there is not a good idea; the bridge in the sound is less offensive to more residents.
20. William & Thereza Morris	Will be safer for storms and island migration than the existing easement alternative; Bridge in the sound will have a better prospect of survival and service availability than the bridge in the existing easement.
21. Marcia Lyons	The existing easement bridge will buy time, but still leaves the transportation link vulnerable. The bridge in the sound is more realistic considering coastal processes and sea level rise.

Name	Reason
22. Martha and Scott Caldwell, Marilyn Midgett, and Joseph M. Midgett, Jr.	The Bridge Within Existing NC 12 Easement would cause the closure of the Island Convenience store, on which the community relies heavily. Thirty-five employees would lose their jobs. The adjacent garage & business building would also be torn down, removing the ability to earn income from them. The Bridge Within Existing NC 12 Easement will be in the ocean and will be a major eyesore for tourists and residents.
23. Kim Robertson	Safety is the priority and the bridge in the surf is not reasonable. The bridge in the ocean will be difficult to maintain and dangerous to recreational users. Its monolithic structure will be detrimental to the Hatteras seashore experience. The bridge in the sound will have less of an impact. As a windsurfer, believe that windsurfing will be only slightly affected (though kite surfing may be more so). There are so many places on Hatteras to do these sports that the effect would be negligible. I have spoken with fishermen who think fishing will be great near the new bridge piles. Also, it would be good to preserve the Island Convenience business.
24. George and Elizabeth Chamberlin	The bridge in the existing easement would be disruptive to the homeowners and business owners of Rodanthe. Building on an eroding beach does not seem to be a smart alternative.
25. Susan West	Bridge in the sound will impact less property (owner is willing to sell enough land for connection); the property owners along NC 12 will fight the existing easement option; putting the bridge in the sound means less road in the Refuge and more habitat for birds and animals; the bridge in the sound is far enough off shore to minimize impacts to views from soundfront properties.
26. Jerry Norris	Less impact on existing homes; the Bridge within Existing NC 12 Easement would be devastating to existing properties.
27. Stephen Novak	Bridge in the Existing NC 12 Easement would be too great a change in character for the area.
28. Valerie A. Stump	This is the less detrimental of the two bridge options. I strongly dislike the bridge coming directly into Mirlo Beach.

Response: The primary reasons the commenters above listed for preferring the Bridge on New Location Alternative tended to emphasize the position that its environmental and community impacts would be less than the Bridge within Existing NC 12 Easement Alternative. Reasons include: it avoids visual impacts along NC 12 in Rodanthe, does not interfere with the character/appeal/safety of the beach, less recreation impact, does not fragment the Rodanthe community, less disturbance to shoreline processes, minimizes property value impacts, less inconvenience to local traffic, does not displace the Island Convenience store, reduces NC 12's footprint in the Refuge, avoids building on an eroding beach, and it is in the calmer sound as opposed to the ocean, thereby reducing risk. These positions are acknowledged. Regarding the comment that the Bridge on New Location Alternative could reduce shoreline damage from wind and waves coming from the west, the substructure of the Bridge on New Location Alternative (a series of bents that support the bridge spans) should allow wave propagation to continue landward to the shoreline with little interruption. The Bridge on New Location Alternative is not expected to act as a barrier from wind and wave action. The NCDOT's Preferred Alternative is now the 2014B Bridge on New Location Alternative, as discussed in Section 3.4 of this revised Phase IIb EA.

3. **Comment:** We prefer whichever detailed study alternative can be built sooner for the following reasons:

Names	Reasons
1. Rev. Benjamin Wolf	While he prefers the bridge on new location for reasons listed above, he indicated that a speedy solution is critical and if NCDOT thinks the bridge on new location would face excessive legal challenges and the bridge within existing easement would not, the bridge within existing easement should be pursued.
2. Charles Peele	Frisco homeowner; if transportation to Hatteras Island is not improved, I will not be able to sell home; property values are at risk.
3. Les and Nanci Weaver	Have concerns about being able to get permits for the Bridge on New Location Alternative.

Allen Burrus, in his oral comments, also recommended that whichever alternative can be permitted should be built.

Response: These positions are acknowledged. NCDOT anticipates that the 2014B Bridge on New Location Alternative (preferred) will receive the necessary permits prior to construction.

4. **Comment:** We prefer beach nourishment and no bridges for the following reasons:

Names	Reasons
1. Tom Kligge	Delay construction of any bridge to test the effectiveness of beach nourishment.
2. Janet Kligge	No reason given.
3. Shelley Kruger Weisberg	Using bridges to solve the problem is short-sighted and not cost effective. The cost of maintaining the bridge will far exceed a long-term nourishment plan; review of recent Nags Head beach nourishment project and the USACE data warrants long-term beach nourishment.
4. Don DeMarco	As an oceanfront property owner in Mirlo Beach, I will lose hundreds of thousands of dollars in property value with either of the proposed bridges. We should see how the nourishment scheduled for this year goes; it has worked in other areas up and down the coast, a bridge can always be built later.
5. Wes Hutchinson	<p>The Bridge in the Existing NC 12 Easement will rapidly be on the beach and in the surf, reducing enjoyment to visitors and use by plants and animals; the piles of the bridge in the surf will be a safety hazard; the bridge would remove all protection the property owners currently have against erosion and inlet formation; visual impacts of the bridge in the existing easement; NCDOT’s expert panel opposes the bridge in the existing easement.</p> <p>From a purely financial perspective, \$200 million would be better used as an endowment to support nourishment (e.g., \$8 million per year at 4 percent return rate, which more than pays for the 3-year expected life of emergency nourishment) until solid data is available to make the best long term decision. Of course, as an endowment, the \$200 million would always be available in the future to build a bridge if nourishment fails to be sustainable, or if there is an unanticipated natural disaster.</p>
6. R. Scott Starsman	Effectiveness has been demonstrated in Nags Head and in Virginia Beach; can be completed for \$1 to 3 million/mile (vastly less expensive than replacement bridges); Nourishment would only need to happen every 3 to10 years depending on erosion rates; bird and turtle nesting increases with dry beach width.

Names	Reasons
7. Scott Ackland	All the bridge proposals would have negative effects on property values, local economy, and aesthetic vistas. Nourishment will help stabilize the existing road right-of-way.
8. Pat Howanitz	Feel this is the only way to save the beach and maintain the highway.
9. Roseann B. Verrecchio	Beach nourishment buys time in the short run to make decisions of the magnitude of the bridges; there is a lack of data about sand sources (such as Platt Shoals) or the effectiveness of nourishment (will soon have data with Nags Head and emergency nourishment); economic impact of the bridges was underestimated in the FEIS; the bridge in the existing easement will destroy the beach.
10. Eric D. Stump	Nourishment will stabilize the area all the way south of the campgrounds that are in trouble. There is no need for a bridge if the oceanfront of the village continues to deteriorate. It would be less impact than bridge construction.
11. Stephanie Sweeney	Tourists will not come if either bridge is built; the island needs to be able to attract the high income tourists who do water sports such as kite surfing. Please consider beach nourishment for the long-term survival of the beach towns. At least delay decision-making until we see the success or failure of the temporary beach nourishment.
12. Richard Kirk and Sheila Higdon	Both bridges will shatter the beautiful views from Rodanthe and beach nourishment is a more reasonable option. It doesn't make sense to "write off" the Mirlo Beach area which contributes significant tax dollars to Dare County and the State of North Carolina.
13. Jim Meyer, President, Mirlo Beach Home Owners Association	Emergency nourishment has been approved for the S-Curves and northern Rodanthe area; any decision should be delayed until the effects of this nourishment are evaluated as a long-term solution. Either bridge option would be too expensive/not cost-effective; would expose the homes to accelerated erosion and eventual destruction; would cause significant property value decline; would cause loss of businesses; would cause significant and irreversible environmental impact to the sound and the Refuge; would be a safety hazard to swimmers and other users.

Names	Reasons
14. Brenda Morris	A bridge in Rodanthe would have negative impacts on recreation, tax base, property values, and public safety. Beach nourishment is the most natural and cost-effective way of providing public beaches and maintaining protection for NC 12. It is the most common practice on the East Coast and has been successful for over 100 years.
15. Ray and Lani Grimm	If we look at the big picture of what we want Hatteras to look like, beach nourishment is the answer. Hatteras has plenty of sand and there are resources to move it.
16. George Waterman	Neither bridge will alleviate the necessity for beach nourishment activities along the NC 12 corridor. When maintenance costs are factored into the bridges, the continued maintenance of beach nourishment is far less. Any bridge will end up costing more than current estimates. Dissatisfied with the traffic pattern proposed for the south end of the Bridge on New Location. The proposed design will cause a bottleneck and impede traffic, especially during periods of emergency evacuation.
17. Jer Mehta	The economy here survives because of the beaches; if bridges are built but beaches neglected, the bridges will stand while the economy dies. Look to Nags Head for an example. Neither bridge addresses beach erosion. Nourishment is used all along the east coast. NCDOT should be considering the bigger picture of the state and not just the 50-foot-wide strip of blacktop. We should delay the decision until after the emergency nourishment can be evaluated.
18. Morris Neuman	Neither bridge addresses erosion. Beach nourishment is the only practical and cost-effective solution to maintain NC 12 in Rodanthe. It is used throughout the east coast. The state could save hundreds of millions of dollars that could be used elsewhere. We should delay the decision until after the emergency nourishment can be evaluated.
19. Jodie A. Kamins	Beach nourishment should be both the short-term and the long-term plan for maintaining beach and community integrity. Other eastern beach communities do this, but Hatteras has been left out. Bridges on the beach and in the surf really are not acceptable.

Names	Reasons
20. Matthew Kamins	Beach nourishment has been used successfully elsewhere; it should be the solution for north of Rodanthe and throughout the Tri-Villages (Rodanthe, Salvo, and Waves). It is least costly, most environmentally friendly, and least disruptive to the community.
21. Majorie Powell and John Richter	A bridge through the Mirlo Beach area would be unsightly and dangerous and would diminish the income from rentals and property purchases. Beach nourishment has been done in other places with success.
22. Gary Langner	We are rushing into this project without all the pieces in place. This project may not even be needed after the emergency renourishment project that is about to begin. Even if construction won't start for a few years, a decision now will impact many financial decisions of those on the island. NC 12 has been distinguished as a national scenic road and a series of bridges will discourage many people from visiting.

Mr. O'Neal also expressed a preference for this alternative in his oral comments. Mr. Hutchinson and Mr. Stump indicate that between the two bridges, they would choose the Bridge on New Location Alternative.

***Response:** The primary reasons for preferring nourishment and no bridges listed by the commenters above were: community, visual, recreational, traffic, and economic impacts (particularly those of the bridge within existing easement); the need to save the beach and homes affected by beach erosion; it would stabilize the existing NC 12 easement; lower cost; and bridges could be built later if needed. These positions are acknowledged with the following clarifications on nourishment as an alternative:*

- ***Costs and Maintenance of Long-Term Nourishment.** NCDOT did consider long-term nourishment and its applicability to the Phase IIb project area. Tables 2-9 and 2-10 in the 2008 FEIS show the costs in 2006 dollars of all the alternatives assessed and indicate that the use of nourishment from Oregon Inlet to Rodanthe in combination with a replacement bridge across Oregon Inlet would cost \$671.8 to \$970.4 million between now and 2060, making it the least costly of the alternatives assessed in the 2008 FEIS. Section 2.10.2.1 of the 2008 FEIS beginning on page 2-114, which describes the Nourishment Alternative, indicated that nourishment would need to occur every four years and associated dunes to protect NC 12 from overwash would need to be re-built every 12 years. The short-term nourishment project completed in 2014 in the Rodanthe area cost \$20.3 million. If it or a similar program were repeated only at Rodanthe every four years at the same cost, the cost through 2060 would be approximately \$233*

million. The 2010 EA for the Bonner Bridge Replacement Project (B-2500) indicated in Table 2-8 that the Nourishment Alternative (nourishment as needed from Oregon Inlet to Rodanthe) would cost \$720 million to \$1.0 billion through 2060.

- **Elimination of Nourishment from Detailed Study.** NCDOT’s conclusion not to study this alternative in detail and the reasons why are presented in Section 2.4.1 of the 2013 Phase IIb EA and Section 2.5.1 of this revised Phase IIb EA. It was eliminated because of uncertainties related to the availability of a suitable sand source over the project’s estimated 50-year life (i.e., through 2060); it would not adequately protect NC 12 from potential future breaches/ inlets (either from the ocean or sound-side [such as Hurricane Irene]) caused by a storm surge; it would not allow natural island processes to occur; and, based on the opinions of USFWS representatives, it is not likely to be found compatible with the Refuge’s mission and purpose. It also was a recommendation of the October 2011 Peer Exchange coastal expert panel that a long-term beach nourishment program not be implemented in the Phase IIb project area because of the high rate of shoreline erosion in this area. The federal and state environmental regulatory and resource agencies, including agencies that must issue permits for any alternative implemented agreed with the decision not to include nourishment as a Phase IIb detailed study alternative.
- **Nourishment as a Long-Term Solution.** NCDOT’s focus is to provide a reliable NC 12 transportation corridor. For the reasons indicated in the previous bullet, NCDOT has concluded that although nourishment can be used as a short-term solution (as it was in 2014), ultimately a bridge will be required for the long-term maintenance of a reliable NC 12 in the Phase IIb project area. Thus, building a bridge in this area is preferred.
- **Emergency Nourishment Project.** The emergency beach nourishment project at the S-Curves area undertaken by NCDOT in 2014 was an interim measure designed to last for approximately three years until a long-term solution can be put in place. The long-term nourishment program assessed in the 2008 FEIS assumed that renourishment would be required every four years. A single round of nourishment will not stop beach erosion. See the response to Mr. Hutchinson’s oral comment above for more information regarding beach nourishment as a long-term solution.

5. **Comment:** I prefer the Bridge within Existing NC 12 Easement Alternative with beach nourishment in Rodanthe for the following reasons:

Names	Reasons
1. Bradley S. Payne	Nourishment will preserve the Mirlo Beach area. Existing easement alternative disregards safety of beach patrons and surfers; will destroy property values; a bridge under constant wave action has never been done; will prevent homeowners from ever moving houses due to erosion.

Warren Judge also suggested this alternative in his oral comments.

***Response:** The primary reasons for preferring Bridge within Existing NC 12 Easement Alternative with Beach Nourishment listed by the commenter is that it could benefit those homes at Mirlo Beach at risk from erosion and avoids the impacts to Rodanthe listed by the commenter. This position is acknowledged with the following clarifications:*

- **Nourishment.** NCDOT also considered a combination of a bridge in the Refuge and nourishment in Rodanthe. NCDOT’s conclusion not to study this alternative in detail and the reasons why are presented in Section 2.4.1 of the 2013 Phase IIb EA and Section 2.5.1 of this revised Phase IIb EA. Also, see the responses to Mr. Hutchinson’s and Mr. Payne’s oral comments.
- **Impacts in Rodanthe and to the Beach.** The impacts listed in Rodanthe by the commenter could be avoided with the Bridge on New Location Alternative, which is now the Preferred Alternative, as discussed in Section 3.4 of this revised Phase IIb EA.
- **Prevent Homeowners from Moving Homes Endangered by Beach Erosion.** This impact was not noted in the 2013 Phase IIb EA, but it was added as an impact in this revised Phase IIb EA and considered in the selection of the Preferred Alternative.

6. **Comment:** I prefer a surface road on new location for the following reasons:

<i>Names</i>	<i>Reasons</i>
1. Richard D. Austin	Dredge a channel on the sound side and pump the sand right down the center of the island. Build the road on the berm. No expensive bridges. The channel would help flush the sound and add to local commerce by boat traffic by using Oregon Inlet /channel/Rodanthe channel to Pamlico Sound and points south. The channel would be safe anchorage in a storm. Let the dunes wash down. The wide sloping beach will absorb the wave energy and erosion would be greatly reduced.

Response: Moving the existing road to the west was assessed in the 2008 FEIS, but not in the Phase IIb project area. It was not considered in the Phase IIb project area because of the area's high erosion rates and susceptibility to breaching. Within the Refuge, it would be unlikely that relocating the existing road on a berm in the center of the island would be found compatible with the Refuge's mission, and it would have substantial wetland impacts. The environmental impacts of dredging in Pamlico Sound as a sand source for this alternative also would have to be considered.

7. **Comment:** We prefer the use of geosynthetic materials (or some other type of breakwater or jetty) to maintain the beach and no bridges for the following reasons:

Names	Reasons
1. Jeff Dawson	Protect the beach; building bridges and abandoning the island is not good for the people or nature; we will lose Hatteras island and the tax revenue it produces; geosynthetic tubes can be used to prevent erosion.
2. Carol Dillon Dawson	Against any bridges; need to nourish and stabilize the hotspots; instead of using beach nourishment, NCDOT waits until there is a disaster and then builds bridges; Buxton also is a NC 12 disaster; NCDOT has not tried other methods of stabilization; businesses are going under or struggling and families are losing everything.
3. Lee Haller	Stabilize the beaches of northern Rodanthe with soft structure techniques and provide access/parking at the northern end of the bridge for people to access the preserve and beaches.

Names	Reasons
4. Frederic B. Westervelt	Prefers beach re-nourishment facilitated by breakwater, jetty, or other. This would be quick, lower in short-term cost than bridges, wouldn't destroy the ambiance in Hatteras, and would preserve existing properties and businesses. The proposed bridges are expensive, slow to accomplish, and are not suitable for the island. They also wouldn't forestall further disappearance of north Rodanthe.

Dave Dawson also expressed a preference for this alternative in his oral comments.

Response: The primary reasons for the use of geosynthetic materials to maintain the beach and no bridges expressed by the commenters above were beach retention and associated economic benefits. Breakwaters or jetties are suggested to facilitate beach re-nourishment. These positions are acknowledged and the following responses are offered:

- ***Use of Geosynthetic materials for Beach Stabilization as an Alternative for Maintaining NC 12.*** Jeff Dawson also made similar comments orally at the public hearings. The merits of this alternative are included in the response to Jeff Dawson's oral comments.
- **The Need for Improvements at Buxton.** NCDOT completed a feasibility study for the Buxton to Avon Planning and Environmental Studies for Maintaining Roadway project (STIP No. R-4070B) in December 2015. The feasibility study assesses the merits of alternative short- and long-term transportation alternatives for this portion of NC 12. The project, however, is not funded in the current 2016 to 2025 STIP.
 - ***Parking in the Refuge.*** As a part of the mitigation for bypassing an existing parking lot in the Phase IIa area with the planned new interim bridge over Pea Island Inlet (breach), NCDOT has agreed to build a parking lot within the Refuge just north of Phase IIb. This agreement is documented in a September 2015 "Construction Consultation" that addressed the impact of including the interim bridge as a part of the NC 12 – Pea Island Long-Term Improvements Bonner Bridge Replacement Project Phase IIa project (B-2500A). The new parking lot site is approximately 900 feet north of the northern terminus of the Phase IIb project. The site was selected in February 2016 by the Refuge manager with input from NCDOT.
 - ***Breakwaters or Jetties to Facilitate Beach Nourishment.*** North Carolina law (15A NCAC 07H.0308) states: "Permanent erosion control structures may cause significant adverse impacts on the value and enjoyment of adjacent

properties or public access to and use of the ocean beach, and, therefore, are prohibited. Such structures include bulkheads, seawalls, revetments, jetties, groins and breakwaters.” Also see the response above to comments indicating a preference for a nourishment alternative and response to Mr. Hutchinson’s oral comment.

8. **Comment:** I prefer high-speed ferries instead of bridges for the following reason:

Names	Reasons
1. John Driggers	Weather (rain, fog, wind), breakdowns (gas, tires); wrecks, bring in different class of tourists (folks who care)

Response: A ferry system alternative was addressed in Section 2.2.6 of the 2008 FEIS beginning on page 2-21. High speed ferries are addressed in the 2010 Record Decision in the response to FEIS comments beginning on page C-51 of Appendix C, in the Phase IIa EA in Section 2.3.2.3 beginning on page 2-10, and in the Phase IIa Record Decision in the response to Phase IIa comments beginning on page C-74 of Appendix C. High speed ferries were rejected as a detailed study alternative because they would diminish convenience to the traveling public (including a total travel time of approximately 1 hour and 30 minutes one way compared to a 20 minute trip from southern Bodie Island to Rodanthe on NC 12). Also, the 50-year cost of a ferry service that would serve existing NC 12 traffic across Bonner Bridge would be \$6.3 billion with a conventional ferry service. Costs could not be reduced enough with a high-speed ferry service to make it financially competitive with a combination of roads and bridges, such as the Parallel Bridge Corridor with Transportation Management Plan (PBC/TMP) Alternative selected for implementation in the 2010 ROD. The 50-year cost of PBC/TMP Alternative is estimated to be as high as \$1.5 billion, depending on the design options selected for future phases of the Bonner Bridge Replacement Project (B-2500).

Potential Improvements to the Detailed Study Alternatives

1. We suggest the following improvements to the Bridge within Existing NC 12 Easement Alternative:

Patricia Fort

Post NC 12 at 60 mph instead of 55mph.

Response: For safety reasons, NCDOT considers 55 mph the appropriate maximum speed limit for a two-lane road.

Jack W. Cahoon, Ted Hamilton, Horatio Beck

If the south end of the Bridge within the Existing NC 12 Easement Alternative is shortened and located farther north, avoid the displacement of the Island Convenience Store and it would be good for the community.

Response: Shortening this alternative in the manner described was considered during its development. However, it would result in the bridge ending oceanward of the forecast 2060 high erosion shoreline, risking that an extension of the bridge would be required prior to 2060. Ultimately, as discussed in Section 3.4 of this revised Phase IIb EA, the 2014B Bridge on New Location Alternative was selected as the current Preferred Alternative. The Island Convenience store would not be displaced with this alternative.

Valerie A. Stump

Implementing beach nourishment is essential to the livelihood and property of Hatteras, regardless of which bridge is built.

Response: See the response to Bradley S. Payne's preference of the Bridge within Existing NC 12 Easement Alternative with Beach Nourishment above. The same reasoning applies to the use of either detailed study alternative bridge with the addition of beach nourishment.

2. We suggest the following improvements to the Bridge on New Location Alternative:

Tom Murphy, Mick Harris

Include a fishing pier over the sound.

Response: NCDOT is charged with building and maintaining the state's transportation infrastructure and not recreational facilities.

William Olander

Provide public-use pull-off areas in the Pamlico Sound for vistas or recreation.

Response: Motor vehicle pull-offs for recreational use would not be safe, risking drivers using the shoulder when the pull-off is full, crashes when people pull-out onto a bridge with drivers traveling 55 mph, and pedestrian activity adjacent to the travel lanes.

George and Elizabeth Chamberlin

Ensure a wide enough bridge that can handle serious multi-car accidents without completely shutting down traffic.

Response: The bridges associated with all detailed study alternatives would have 8-foot shoulders, which would provide room for emergency pull-offs by drivers and emergency vehicles in the case of an accident.

Eric D. Stump, Stephen Novak

If a bridge is built, the existing portion of Highway 12 should be left similar to the way old US 64 sections remain for recreation/access/parking. This 2.5 mile stretch is where a lot of people that come to recreate in Rodanthe go to. People that pull off the

road are a large draw to this island. Consider a parking area at the northern end of town to provide the needed access to the Refuge.

***Response:** The existing portion of NC 12 in the Refuge from the Refuge boundary to the northern end of Phase IIb (1.8 miles) would be removed and the easement returned to the Refuge. That is the preference of both the Refuge and NCDOT. If the current roadway were left in place, it is expected that the portion at the south end of the Refuge would be lost to shoreline erosion once the sandbags currently protecting it are removed, and other sections of the part of NC 12 replaced by the bridge would follow over time. The Refuge will be responsible for determining an off-road access policy for this part of the Refuge. As a part of mitigation for bypassing an existing parking lot in the Phase IIa area, NCDOT has agreed to build a parking lot within the Refuge just north of Phase IIb. The new parking lot site is approximately 900 feet north of the northern terminus of the Phase IIb project. The site was selected in February 2016 by the Refuge manager with input from NCDOT. NCDOT has no plans to build and maintain a parking lot at the northern end of Rodanthe.*

Jerry Norris

The intersection with NC 12 on the northern end of the bridge should be extended farther north to alleviate the overwash and sand cover we experience.

***Response:** The area of NC 12 north of all detailed study alternatives is not forecast to be threatened by shoreline erosion or notable overwash before 2060. Therefore, the design and location of the bridges' termini addresses the commenter's concern.*

Stephen Novak

The terminus of the Bridge on New Location Alternative would need to be revisited, because under current planning, the Liberty Gas station would have to be removed. A design scenario should be created that allow the station to remain.

***Response:** The design of the Bridge on New Location Alternative (including the preferred 2014B alignment) does allow the Liberty gas station/Island Convenience store to remain in place.*

Project Implementation Need and Timing

1. Gary Lebing; Harry W. Gilbert III; Philip J. Auth; Diane Shepherd; James F. & Vicki W. Pierson, Arleen Burley, Orville Scarborough

Need a reliable road and bridge now. Start and complete construction as quickly as possible.

***Response:** A design-build contract will be awarded for construction of Phase IIb as soon as possible in conjunction with completion of the NEPA process and following public and agency review of this revised Phase IIb EA. Phases I (Bonner Bridge Replacement), IIa (Pea Island inlet) and IIb (Rodanthe breach) have all been allocated*

funding in the current (2016 to 2025) STIP. Construction is anticipated to take from 3 to 3.5 years for the 2014B Bridge on New Location Alternative (preferred).

2. Jim Harris

A reliable road is needed.

Response: Agree.

3. James F. and Vicki W. Pierson

Having to rely on the ferries when the highway is washed out is a hardship. Highways are needed for emergency medical transportation.

Response: Agree.

4. Peter and Charlene Ricards

Please save our beach. This is a wise investment for the State of North Carolina.

Response: NCDOT acknowledges the public's interest in maintaining beaches against the forces of erosion. NCDOT's focus is to deliver a project that meets environmental standards, is affordable, and contributes to the long-term reliability of NC 12. Going forward, NCDOT welcomes further coordination with other levels of government and the public concerning broader policies related to oceanfront erosion.

5. Wes Hutchinson

The major arguments in favor of a bridge on the current easement are weak. The two I have heard most frequently are that NCDOT can proceed without approval of other stakeholders, especially agencies that must issue permits, and that the funding is available now and might disappear in the current political climate and as a result of the new Strategic Transportation Investments (STI) legislation. Although expedient, this is not governance to be proud of. It is short-sighted and not in the best interests of the public: residents, visitors, and North Carolinians in general.

Response: The commenter's position is acknowledged. NCDOT could not proceed with any of the detailed study alternatives without approval of agencies that issue permits. State and federal environmental resource and regulatory agencies are unanimous in their support for the 2014B Bridge on New Location Alternative, the current Preferred Alternative. This project is Strategic Transportation Investment (STI) committed, which means that its priority was not revisited in the recent re-prioritization and its funds were not reallocated. Funds for the project are in the current (2016 to 2025) STIP.

Environmental Impacts

1. Jim Harris

Lighting of the roadway/bridge will affect turtle activity. The bridge deck needs to be lit with directed light.

Response: There are no plans to light the bridge. Where needed to minimize impacts to turtle hatchlings from motor vehicle headlights, a 36-inch concrete parapet will be included in the design of the bridge railing in order to shield turtle hatchlings from headlight light.

2. Jack W. Cahoon

The farther you are from the ocean, the better.

Response: The commenter's position is acknowledged.

3. Joseph F. Noce

The Bridge within Existing NC 12 Easement Alternative could attract crime, drug traffic, etc., because of the "off-the-beaten-path" location.

Response: The commenter's position is acknowledged.

4. Mick Harris

In talking to supporters of the Bridge on Existing Easement, the example of the bridges in the Florida Keys is used. The bridges there are protected by an offshore reef so they are not exposed to severe high waves like the highway 12 bridge would be. Ever hear of surfers going to the keys for surf? No, because there is no surf in the keys.

Response: The commenter's observation is acknowledged.

Access to Private Property

1. Jack Painter

Ensure that property access is maintained as long as humanly possible.

Response: NCDOT will maintain access to private property until, because of shoreline change, it is no longer reasonable and feasible to do so.

New Oregon Inlet Bridge (Phase I)

1. Joe Wells

Have the Governor declare a state of emergency to bypass the stalemate on building the new Bonner Bridge.

Response: NCDOT shares the commenter's desire to replace Bonner Bridge as soon as possible. Construction of the replacement bridge over Oregon Inlet began in March 2016.

2. **David Lund**

In response to an article recently published in the Virginia Pilot, the following thoughts and suggestions for the problems with the Bonner Bridge are offered:

- \$200 million is a lot of money to spend on a bridge if there are far less expensive solutions that might work; the difference could be spent on other projects.
- Rather than build a new bridge, how about widening and deepening the supports to the bridge so that the scouring cannot weaken the bridge supports.
- Another option would be to build another support next to the ones that are encountering the worst scouring.
- With all the shifting sands caused by the waters in the inlet, how about making the sides of the inlet go farther into the ocean with large rocks so that there is less impact on the inlet and its effect on boats as well as perhaps the scouring issues.

Response: The commenter's position is acknowledged. The reasons that rehabilitation of Bonner Bridge is not a reasonable option are discussed in Section 2.2.4 of the FEIS on page 2-16. Past consideration of the use of rock jetties at Oregon Inlet is discussed in Section 2.2.1.1 of the 2008 FEIS on page 2-6.

Pamlico Sound Bridge

1. **Carol Hooper Rensch**

I would really prefer the 17-mile bridge in the sound for the future (because of the cost to keep the road open on the northern part of the island), but I would be happy for now with the 2.6 mile bridge (Bridge on New Location Alternative).

Response: The commenter's position is acknowledged. The 2014B Bridge on New Location Alternative is now the Preferred Alternative for Phase IIb, as discussed in Section 3.4 of this revised Phase IIb EA.

Other

1. **Scott Leggatt**

Does our opinion really have an influence on the outcome?

Response: Yes. Public involvement is an important component of NCDOT's project development process.

2. Janet Kligge

Loss of our house due to nature is acceptable; loss because selecting the Bridge within Existing NC 12 Easement Alternative is easier for NCDOT is "lazy and unconscionable".

Response: The commenter's position is acknowledged. The 2014B Bridge on New Location Alternative is now the Preferred Alternative for Phase IIb, as discussed in Section 3.4 of this revised Phase IIb EA.

3. Rev. Benjamin Wolf

Is there any way to involve groups like SELC now to try to gain their support?

Response: NCDOT routinely engages with members of the public and interested parties, including with environmental organizations such as SELC. In the end, only the interested party can decide whether it will or will not lend its support to a particular project.

4. Unsigned Email from gil15@cox.net

It is amazing how fast money becomes available for things politicians want, whether or not the public as a whole want it. NC teachers have not had a decent raise in six years. Considering NC 12 improvements might be worthwhile for long-range planning, even though the cost is prohibitive; however, the improvements are not timely and should wait their turn!

Response: The commenter's position is acknowledged. The need for these improvements is immediate, as illustrated by the 2013 closure of Bonner Bridge because of scour issues and the closures of NC 12 following Hurricanes Irene (2011) and Sandy (2012).

5. Peter Romeyn

It would be better to accept the fact that the Outer Banks will always shift location and continue to use the ferry. Take the money for the new bridge and give it to public schools.

Response: A ferry system large enough to serve the 2 million trips per year that presently cross Bonner Bridge would be more expensive than improvements to NC 12. As discussed in Section 2.3.2.2 of the Phase IIa EA, the total estimated cost for installing, operating, and maintaining a ferry system that would service this traffic demand for the first year is \$664 million. Each year after, normal annual recurring costs are estimated to be \$94.5 million. If this route were to be operated and maintained with no change in capacity for the 50-year project life, the total

estimated cost rises to \$6.3 billion. These costs include the vessels, crew, docks, supporting facilities (including a new shipyard), terminal basin dredging, maintenance, and vessel replacement at 30 years.

6. Mick Harris

It's stated that the bridge in the existing easement will cost less than the sound bridge. Have construction delays due to highway flooding from northeasters or another hurricane been factored in? What about future maintenance cost of a bridge battered by ocean waves, as opposed to the calm of the sound?

***Response:** Northeasters or another hurricane could delay construction of either alternative. The bridge design of the two alternatives will take into consideration the differing settings of the two alternatives. As such, there is not expected to be a major difference in the maintenance costs of the two alternatives. See also page C-38 of Appendix C of the Phase IIa EA and pages C-25 to C-26 in Appendix C of the Phase IIa ROD for more discussion on the issue of maintaining a bridge in the surf.*

7. Wes Hutchinson

Real estate sales have been a highly promoted driver of economic growth in this area for a long time. While it might be argued that high erosion rates were common knowledge, realtors and public officials seldom, if ever, disclosed the likelihood of loss of protective government services via the use of bridge alternatives to address erosion. Thus, the likelihood of class action, inverse eminent domain lawsuits is high, possibly ex ante and certainly ex post.

***Response:** NCDOT acknowledges the public's interest in maintaining beaches against the forces of erosion. NCDOT's focus is to deliver a project that meets environmental standards, is affordable, and contributes to the long-term reliability of NC 12. Going forward, NCDOT welcomes further coordination with other levels of government and the public concerning broader policies related to oceanfront erosion.*

8. Frederic B. Westervelt

The evident surrender of the Park Service to environmental demands is regrettable. NCDOT should not follow suit. It has been said the NCDOT has not pursued the re-nourishment proposal because of uncertainty that it would not be compatible with the mission and the purpose of the Refuge. Such timidity may prove to be correct, but the premise should be put to the test and defended vigorously. Capitulation gets us nowhere.

***Response:** The commenter's position is noted. NCDOT is not pursuing a nourishment alternative for additional reasons beyond that it would not likely be found to be compatible with the mission and purpose of the Refuge. These reasons are summarized above in the response to comments made by those who prefer beach nourishment as an alternative and in response to Mr. Hutchinson's oral comment.*

9. **Stephen Novak**

Some accounting for the significant loss of recreational access is necessary, does not appear anywhere in the EA, and is a deficiency that must be remedied before plans are finalized for this important project.

Response: The loss of recreational access is addressed in the 2013 Phase IIb EA and this revised Phase IIb EA in Section 4.2.4.2. The loss of recreational access associated with the Bonner Bridge Replacement Project (B-2500) (Bodie Island to Rodanthe) is addressed in Sections 4.5.3 and 4.5.4 of the 2008 FEIS, beginning on page 4-44. An analysis of the economic impact of losing direct access to the Refuge was presented in the 2008 FEIS in Section 4.1.5.3 beginning on page 4-12. This assessment was augmented to also take into consideration the loss of beach resources in the Refuge that would occur with the Bridge within Existing NC 12 Easement Alternative in Section 4.2.4.2 of the 2013 Phase IIb EA and this revised Phase IIb EA.

Petitions

1. **Opposes Bridge within Existing Easement Alternative and Favors Bridge on New Location Alternative** – Submitted by Martha and Scott Caldwell, Marilyn Midgett, and Joseph M. Midgett, Jr.

The signers of this petition oppose NCDOT's preferred alternative (the Bridge within Existing Easement Alternative) because it will destroy the beach, create a major public safety hazard, and will unfairly create substantial economic losses for local property owners and businesses. The signers are in favor of the Bridge on New Location Alternative. This petition has 64 signatures.

Response: The signers' position is acknowledged. The NCDOT's Preferred Alternative is now the 2014B Bridge on New Location Alternative, as discussed in Section 3.4 of this revised Phase IIb EA.

2. **Opposes Both Detailed Study Alternatives** – Submitted by Wes Hutchinson

This petition opposes both detailed study alternative bridges for the reason that proposed bridge piles will be a safety hazard in the surf to swimmers and surfers. This petition has 269 signatures.

Response: The signers' position is acknowledged.

3. **Favors Beach Nourishment in Lieu of Either Detailed Study Alternative** – Submitted by Wes Hutchinson

This petition advocates for the use of beach nourishment in lieu of either bridge alternative. The following reasons are given:

- The bridges are ugly.

- Nourishment would maintain the beach with a natural material, as opposed to permanent manmade structures.
- Nourishment can be a permanent solution, as long as it is regularly maintained (as done in other states and countries).
- Nourishment is a flexible solution; maintenance periods can be adjusted as needed and leaves room for better future solutions, but a bridge cannot be “unbuilt”.
- New data following the Nags Head nourishment project and the upcoming USACE emergency nourishment project will indicate the cost-effectiveness of nourishment.
- Large negative, uncompensated impacts to property values and rentals will be borne by homeowners in north Rodanthe with either bridge.

This petition has 208 signatures.

Response: The signers’ position is acknowledged. Regarding why NCDOT is not pursuing a nourishment alternative, see the response to Mr. Hutchinson’s oral comment made on January 8, 2014 in Buxton on page F-4.

F.2 Government Agency Comments and Responses

This section responds to written comments on the EA submitted by state and federal environmental resource and regulatory agencies, as well as local agencies. Each substantive comment requiring a response is listed below, followed by a response. The comments in this section quote the correspondence received. The original correspondence is presented in Appendix G.

F.2.1 Federal Agencies

US Department of Army, Army Corps of Engineers

1. **Comment:** Page 1-2, Section 1.1, **Purpose of the Environmental Assessment:** The stated purpose of this document is to address changes to the project area in Phase IIb of the Bonner Bridge Replacement Project (B-2500). This document is based on the 2010 ROD and other NEPA documents that describe impacts associated with other phases of the project. Because the changes to Phase I and Phase IIa are described in detail in the 2013 ROD for Phase IIa, we suggest that the discussion in this document be limited to changes in conditions, impacts and design within Phase IIb of the Bonner Bridge Replacement Project (B-2500).

Response: The commenter’s preference is noted. The EA does focus its attention on Phase IIb. However, since all phases of the Bonner Bridge Replacement Project

(B-2500) are part of a single project, where circumstances have changed in other phases of the project since the release of previous documents, it is important to document those changes so they can be taken into consideration during project decision-making.

2. **Comment:** Page 2-1, **Description of Phase IIb Alternatives Analysis:** Several alternatives were determined to be unreasonable because they do not meet the project purpose and need. Although the purpose and need are discussed in other NEPA documents, it would be helpful to include the purpose and need statement in this section.

Response: In response to this comment, a summary of the purpose and need has been added as Section 1.2 of this revised Phase IIb EA.

3. **Comment:** Page 4-28, Section 4.2.5.3 **Wetland and Open Water Habitat:** Impact values in this section include fill associated with bridge construction and piling installation. The U.S. Coast Guard has jurisdiction for permitting bridges over navigable waters of the United States through Section 9 of the Rivers and Harbors Act of 1899 and the General Bridge Act of 1946. The Corps of Engineers does not have permit authority for these projects. Therefore, the US Army Corps of Engineers would not include impacts associated with bridge construction and piling installation when calculating impacts to jurisdictional waters and wetlands.

Response: The commenter's position, including that the US Coast Guard had permit authority, is understood. For both the detailed study alternatives described in the 2013 Phase IIb EA, pile impacts accounted for less than 0.01 of an acre. Excluding, pile-related impacts, the fill impacts of the two detailed study alternatives to jurisdictional waters and wetlands are 0.05 acre for the Bridge within Existing NC 12 Easement Alternative and 0.44 acre with the 2013 Bridge on New Location Alternative. With the 2014 revisions to the Bridge on New Location Alternative that were developed to minimize impacts to essential fish habitat (EFH), submerged aquatic vegetation (SAV) habitat, and SAV bed impacts, fill impacts to jurisdictional waters and wetlands, excluding pile impacts, total 0.39 acre for the 2014A alignment and 0.41 acre for the 2014B alignment (preferred).

4. **Comment:** Page 4-45, Section 4.4 **Phase IIb Permits and Approvals:** US Army Corps of Engineers Permits: We agree that a Section 404 permit will be required to authorize discharges of dredged or fill material required for road construction. Please be aware that impacts associated with bridge construction and demolition would not be included in the Section 404 permits. Any application submitted for authorization should not include impacts associated with piling installation or bridge construction.

Response: The permit application will only include fill impacts. The fill impacts to jurisdictional waters, including wetlands, for the detailed study alternatives presented in the 2013 Phase IIb EA and for the 2014A and 2014B alignments to the Bridge on New Location Alternative are presented in the response to comment 3.

5. **Comment:** Page 7-1, **Conclusion:** Based on the information provided in the EA and the small amount of impact associated with road construction, we agree that changes identified in this document would not result in new significant impacts.

Response: The commenter's position is acknowledged.

US Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS)

1. **Comment:** NOAA's National Marine Fisheries Service (NMFS) has reviewed the Environmental Assessment (EA) NC 12 -Rodanthe Breach Long-Term Improvements Bonner Bridge Replacement Project Phase IIb dated December 2, 2013, prepared by the North Carolina Department of Transportation (NCDOT) and Federal Highway Administration (FHWA). The EA evaluates two alternatives selected by the NCDOT Merger Team for what the EA refers to as the Rodanthe Breach Area between the southern end of the 2.1-mile section of highway in the southern half of the Pea Island National Wildlife Refuge (PINWR) and the highway's intersection with Myrna Peters Road (SR 1492) in Rodanthe: 1) Bridge within Existing NC Highway 12 Easement Alternative and 2) Bridge on New Location Alternative (extending through a 2.6-mile portion Pamlico Sound). EA Section 1.1 explains how this EA relates to previously completed environmental reviews, including the 2008 Final Environmental Impact Statement for replacement of the Herbert C. Bonner Bridge and the 2013 EA for bridging a portion of NC Highway 12 in PINWR north of the Rodanthe Breach Area. EA Section 3.3 identifies Bridge within Existing NC 12 Easement as the preferred alternative and EA Section 6.4 concludes this alternative falls within the range of environmental impacts considered in the previously completed environmental reviews, which included an essential fish habitat (EFH) consultation. As the nation's federal trustee for the conservation and management of marine, estuarine, and diadromous fishery resources, the following comments are provided pursuant to the authorities of the Fish and Wildlife Coordination Act and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

Response: No response required.

2. **Comment:** EA Section 6.4 summarizes the past EFH coordination for the project. Impacts to EFH from the Bridge within Existing NC 12 Easement Alternative were examined in the 2008 Final Environmental Impact Statement and its EFH Assessment. After examining environmental changes that have occurred since those

assessments were completed, NCDOT and FHWA conclude the EFH Assessment for the Bridge within Existing NC 12 Easement Alternative does not require augmentation, and NMFS agrees with this conclusion. In contrast, the Bridge on New Location Alternative was not evaluated previously and is examined in EA section 4.2.5.5.

The Bridge within Existing NC 12 Easement Alternative is approximately 2.5 miles in length with the bridge portion approximately 2.3 miles long. This alternative would replace NC Highway 12 with a bridge over the entire portion of the Rodanthe Breach Area considered geologically susceptible to breaches and would not require a change in the existing easement that allows NC Highway 12 within PINWR. Under current conditions, this alternative does not impact EFH beyond what has been previously evaluated; however with continual shoreline erosion, the bridge is expected to impact surf zone EFH eventually, but the timing remains uncertain.

The Bridge on New Location Alternative is approximately 3.0 miles in length with the bridge portion approximately 2.6 miles long. The proposed location of the bridge differs substantially from the route proposed when this alternative was first coordinated with the NMFS. The EA refers to this earlier route as Bridge South (EA Figure 4). The new route is shifted 930 to 950 feet further westward into Pamlico Sound to address safety issues and concerns raised by PINWR staff. This alternative would avoid the portion of NC Highway 12 considered geologically susceptible to breaches, would be less vulnerable to future shoreline erosion, and would result in a net reduction of the NC Highway 12 acreage within PINWR. This new alignment requires 2.79 acres of new easement in PINWR. To mitigate for impacts from new bridge piles and shading from the bridge deck in PINWR, NCDOT would remove the 1.8 miles of NC Highway 12 in the southern end of the refuge, which would result in a gain of 19.27 acres. Within Pamlico Sound, the entire footprint of the bridge would be over submerged aquatic vegetation (SAV) habitat with a permanent impact on 11.34 acres (stated as 11.23 acres on page 4-32). SAV surveys in 2013 documented that 88% of the plots contained SAV; 45% of the plots had 60% or greater coverage.

The EA on page 4-32 states "The bridge deck and pile presence impacts listed above would result in some loss of EFH (under the piles) and in changes in light levels of the area underneath the bridge and for some distance surrounding the bridge. These changes are expected to have a minimal adverse effect on EFH, managed species, and SAV functions because of the extensive distribution of SAV throughout the area and because the bridge would be over 15 feet above mean high water." NMFS strongly disagrees with this statement. In *Fishery Ecosystem Plan of the South Atlantic Region*, the South Atlantic Fishery Management Council (SAFMC) reviews the ecosystem services SAV habitat provides fishery species, and SAFMC identifies SAV as a Habitat Area of Particular Concern. The EA provides no justification for the

conclusion reached by NCDOT and FHWA and proposes no compensatory mitigation for the 11.34 acres of SAV habitat impacts.

***Response:** Since the receipt of this comment, FHWA and NCDOT have coordinated with NMFS related to the impacts of the Bridge on New Location Alternative, including the 2014B preferred alignment. This coordination has resulted in new surveys for SAV, development of two new alignments for the Bridge on New Location Alternative to minimize SAV impact (whose impacts are assessed in this revised Phase IIb EA), and a commitment to a SAV impact mitigation program. The SAV surveys are described in Section 2.6.2.2 of this revised Phase IIb EA, the new alignments are described in Section 2.5.2.2, a revised assessment of impacts to SAV are presented in Section 4.1.7, and the planned SAV mitigation program also is described in Section 4.2.5.5.*

- Comment:** On September 17, 2013, representatives from NMFS, U.S. Army Corps of Engineers, North Carolina Division of Coastal Management, and North Carolina Division of Marine Fisheries met with NCDOT representatives to review the most recent SAV habitat maps and the proposed routes for Bridge South and the new route described in the EA. It was clearly evident then that pushing the location further out into Pamlico Sound greatly increased impacts to SAV habitat, and NMFS advised NCDOT during this meeting that while the closer-to-shore Bridge South alternative may be acceptable, NMFS was unlikely to accept the more western bridge alignment given the extensive impacts to SAV habitat. So while NMFS is relatively pleased to see NCDOT and FHWA identify Bridge within Existing NC Highway 12 Easement Alternative as the preferred alternative in the Draft EA, NMFS remains very concerned that the Final EA may revise this preference to one that would have significant, unacceptable impacts to SAV habitat.

***Response:** See the response to NMFS comment #2 above. Coordination with the NMFS that resulted in their agreement that the 2014B Bridge on New Location Alternative is the LEDPA is described in Section 6.4 of this revised Phase IIb EA.*

- Comment:** Section 305(b)(4)(A) of the Magnuson-Stevens Act requires NMFS to provide EFH conservation recommendations when an activity is expected to adversely impact EFH. Based on this requirement, NMFS provides the following:

EFH Conservation Recommendations

1. The Final EA shall identify the Bridge within Existing NC Highway 12 Easement Alternative as the selected alternative for the Rodanthe Breach Area.
2. All permanent and temporary impacts to SAV and salt marsh habitat shall be fully mitigated after project plans reflect all practicable avoidance and minimization. The impact avoidance and minimization measures must be

approved by NMFS, and the compensatory mitigation must be approved by NMFS.

Section 305(b)(4)(B) of the Magnuson-Stevens Act and its implementing regulations at 50 CFR 600.920(k), requires the NCDOT and FHWA to provide a written response to the EFH recommendations within 30 days of receipt. If it is not possible to provide a substantive response within 30 days, an interim response should be provided to NMFS. A detailed response must then be provided prior to final approval of the action. The detailed response must include a description of measures proposed by NCDOT and FHWA to avoid, mitigate, or offset the adverse impacts of the activity. If the response from NCDOT and FHWA is inconsistent with the EFH conservation recommendations, the NCDOT and FHWA must provide a substantive discussion justifying the reasons for not following the recommendation. The detailed response should be received by the NMFS at least ten days prior to final approval of the action. Thank you for the opportunity to provide these comments. Related questions or comments should be directed to the attention of Mr. Fritz Rohde at our Beaufort Field Office, 101 Pivers Island Road, Beaufort, North Carolina 28516-9722, or at (252) 838-0828.

Response: FHWA's responded to the above EFH Conservation Recommendations by coordinating further with the NMFS on their preference and issues raised. See the response to NMFS comment #2 above. At the June 17, 2015 Concurrence Point 3 meeting of the project's National Environmental Policy Act (NEPA)/Section 404 Merger Team meeting, the NMFS concurred the 2014B Bridge on New Location Alternative was the LEDPA because the Bridge within Existing NC 12 Easement Alternative was not practicable. They conditioned their concurrence orally by saying that Bridge on New Location Alternative will necessitate the consideration of expensive SAV/EFH mitigation. They concurred with the understanding that the SAV/EFH impact will be mitigated. A revised "EFH Conservation Recommendations" based on the above efforts is requested from NMFS.

US Department of the Interior

A letter also was received from the US Department of Interior, US Fish and Wildlife Service, Raleigh Field Office. All of the comments presented in that letter are contained in the Department of Interior letter. Thus, they are answered here and not repeated under a separate heading.

General Comments

1. **Comment:** While the North Carolina Department of Transportation (NCDOT) has studied a range of alternatives for this phase of the project, it is understood that only two detailed study alternatives remain under consideration at this time (1) bridge on

new location and (2) bridge within existing NC 12 easement. We understand that the bridge within existing NC 12 easement is the NCDOT preferred alternative.

The alternative referred to as “bridge within existing NC 12 easement” would not require any new easement from the Pea Island National Wildlife Refuge (PINWR); however it would maintain approximately 1.8 miles of elevated road/bridge within the boundaries of the PINWR. Construction of this alternative would have the greatest adverse effects to federally threatened and endangered species. Despite the fact that the elevated road will be designed to allow natural coastal processes to occur (e.g. overwash and island migration), the presence of the structure will continue to affect other wildlife resources that the refuge manages. Also, the Department is concerned that once the elevated road/bridge is constructed, there will be perpetual pressure from local governments, the public, or others to continue beach nourishment projects. Perpetual beach nourishment would continue to have long-term adverse effects on federally threatened and endangered species, migratory birds, and other wildlife species, especially on the portion of the project within PINWR.

Although the bridge on new location alternative would require 2.79 acres of new easement from PINWR, it would have the greater benefit of removing approximately 1.8 miles of NC 12 from within the refuge and restoring 19.27 acres of the habitat within PINWR (a net return of 16.48 acres to PINWR). This alternative would better allow for natural coastal processes to occur, would greatly minimize adverse effects to federally protected species, would allow PINWR staff to better manage wildlife resources unhindered by the presence of a road, and would remove the bridge from the direct hazards and complications created by the ocean environment. The Department prefers the bridge on new location alternative.

Activities on the barrier island ecosystem that have the potential to affect PINWR also have the potential to indirectly or cumulatively affect Cape Hatteras National Seashore.

***Response:** The commenter’s preference and the reasons for that preference are acknowledged. The 2014B Bridge on New Location Alternative was ultimately selected as the LEDPA and Preferred Alternative with concurrence from USFWS representatives for the reasons presented in Section 3.4 of this revised Phase IIb EA.*

Project Specific Comments

- Comment:** On page 2-16, the EA references Endangered Species Act Section 7 consultation between the U.S. Army Corps of Engineers (USACE) and the US Fish and Wildlife Service (Service) on the Rodanthe ‘S’ Curves interim beach nourishment project (a separate but related project addressed in other documents). Please note that only informal Section 7 consultation occurred. The USACE has not initiated

formal Section 7 consultation. The USACE rendered a biological conclusion of “May Affect, Not Likely to Adversely Affect” for federally listed threatened and endangered species. The Department concurs with that conclusion only if the interim beach nourishment is completed by May 15, 2014. If the project continues beyond that date, there may be adverse effects to nesting sea turtles.

***Response:** The commenter is correct that as of January 24, 2014, formal consultation had not yet been initiated for the Rodanthe ‘S’ Curves interim beach nourishment project and NCDOT acknowledges the need for a May 15, 2014 completion date for a May Affect, Not Likely to Adversely Affect conclusion. Ultimately construction of the project began in July 2014 and was completed in September 2014. Formal Section 7 consultation was completed on April 1, 2014 with the issuance of a Biological Opinion by USFWS. A modification to the terms and conditions specified in the BO was agreed to in a July 23, 2014 letter from USFWS. NCDOT agreed to and implemented the BO’s reasonable and prudent measures and met the terms and conditions specified in the BO and the subsequent modification.*

3. **Comment:** Section 2.6.2.2, states that the Rodanthe S-Curves beach nourishment project “is not part of the Bonner Bridge Replacement Project.” While the funding stream and administrative process of the beach nourishment project differs from the rest of the Parallel Bridge Corridor/Transportation Management Plan (PBC/TMP), it is in a practical sense all part of the PBC/TMP. The beach nourishment is intended to provide interim protection for NC 12 while the Phase IIb Bridge is constructed. The EA should reflect that impacts to natural systems from the beach nourishment project are related to and cumulative with impacts from Phase IIb.

***Response:** FHWA and NCDOT disagree with the commenter and stand behind their statement on page 2-15 of the 2013 Phase IIb EA that the Rodanthe S-Curves beach nourishment project is a maintenance activity and not a part of the Phase IIb project.*

From the perspective of cumulative impacts, an EA for the short-term nourishment project was published in October 2013 and summarized the proposed action and expected impacts. As stated in that EA:

The short-term nourishment program is expected to have minimal impact on the environment. Material that will be placed on the beach will meet all required compatibility requirements and is expected to be similar to the native material in color, composition, and size. Although not a specific purpose of the project, the expanded beach will provide potentially suitable nesting areas for turtle where little suitable habitat exists now. Deposition of material on the beach will have short-term adverse effects on turbidity and loss of benthic communities, but studies indicate that these effects are of short duration and that near-shore communities recover quickly after the project is completed. Fin fish will avoid

the project area while the sand is being deposited near the shore....No wetlands will be impacted by the proposed project....A Section 401 Water Quality Certification No. 003963 was issued by the NC Division of Water Quality on September 10, 2013. Provided the applicant complies with the special conditions associated with the certification, no appreciable impacts to water quality standards will occur. The project "May Affect, but is Not Likely to Adversely Affect" the loggerhead sea turtle, green sea turtle, leatherback sea turtle, and the piping plover.

In addition to being minimal and short-term, the impacts of nourishment did not occur at the same time as impacts expected with the long-term Phase IIb project.

The maintenance of NC 12 until the completion of the Bonner Bridge Replacement Project (B-2500) was discussed in the "Other Activities with Cumulative Effects" section of the 2008 Biological Assessment for the full B-2500 project (including the Phase IIb project area) considered during Section 7 formal consultation for the full project. The combination of NC 12 road maintenance (including beach nourishment) and the proposed project was not raised as a concern in the determination of conservation measures.

4. **Comment:** Section 3.1 there is a lack of detail in the discussion of the new PINWR easement for the alternative on new location. One point to include would be the acknowledgement by PINWR that such a proposed easement change could likely be considered a minor modification and could be found compatible with stipulations.

Response: The Refuge's acknowledgement that the proposed easement change is a minor modification is included in this revised Phase IIb EA in Section 4.2.4.1.

5. **Comment:** Section 3.1 states that existing NC 12 south of PINWR will be retained as a local access road, and Section 3.2 states that at-grade frontage roads will be constructed on each side of NC 12 within Rodanthe. The natural systems impacts analysis in Section 4.2.5 does not appear to address the specific impacts of these access roads and their future maintenance on the environment. Will the retention of a portion of NC 12 or the frontage roads require perpetual dune construction/maintenance or beach nourishment?

Response: NCDOT will maintain access to private property until, because of shoreline changes, it is no longer reasonable and feasible to do so. How that will be accomplished will depend on the circumstances, but it will more likely involve road cleaning, road repair, or road relocation away from the shoreline. It is unlikely that NCDOT would nourish beaches or build dunes to re-establish access to a property isolated from the road network by shoreline erosion or a breach.

6. **Comment:** Page 3-2 the bridge on new location alternative is described as having a bicycle safe bridge rail. Page 3-3 states that the bridge within existing NC 12 easement alternative will have bicycle safe bridge rails mounted on a 36-inch parapet to partially block headlights that otherwise could affect sea turtle nesting on the beach. The Department believes that the 36-inch parapet would also be necessary on a portion of the bridge on the new location alternative as well. At most, the bridge in the Pamlico Sound would only be approximately 0.75 mile from the beach, a distance where light from traffic could still adversely affect sea turtle hatchlings in their attempt to reach the ocean. At a minimum, the portion of this alternative that is directly west of the PINWR should utilize the 36-inch parapet. The 36-inch parapet would not be necessary for the portion of the alternative directly west of the village of Rodanthe due to the presence of existing lights. This comment also applies to page 5-18 in its discussion of mitigation for minimizing impacts to sea turtles.

Response: The commenter's position is understood. FHWA and NCDOT have discussed this conservation measure during Section 7 consultation and agreed to provide the 36-inch parapet with bicycle safe rails mounted on top for the 2014B Bridge on New Location Alternative (preferred). See the Project Commitments at the beginning of this revised Phase IIb EA.

7. **Comment:** Sections 4.1.6 and 4.2.5.4 address federally protected species. On September 30, 2013, the Department proposed to list the rufa red knot (*Calidris canutus rufa*) as a threatened species under the Endangered Species Act. This species is not addressed in the EA. Although the species does not nest in North Carolina, the project study area does contain potential wintering and foraging habitat. Rufa red knots are regularly observed along Cape Hatteras National Seashore and on the north and south portions of PINWR. The highest numbers of rufa red knots have been observed in April during the spring migration. During 2013, over 12,000 were documented at the Cape Hatteras National Seashore. The bridge within existing NC 12 easement alternative would likely have adverse effects on this species. Although the species is not currently protected by the Endangered Species Act, it will likely become protected prior to or during the construction of this project. To address this species and to provide for a potential incidental take statement, the Federal Highway Administration (FHWA) may opt to initiate a formal Section 7 conference. Formal conferences follow the same procedures as formal consultation. The opinion issued at the end of a formal conference is called a conference opinion. However, the incidental take statement provided with a conference opinion does not take effect until the Department adopts the conference opinion as a biological opinion after the species is listed. Since other phases of the Bonner Bridge Replacement Project will likely commence construction soon, we believe it is prudent that the rufa red knot be addressed comprehensively for all phases as soon as possible to avoid any delays or interruptions of construction.

Response: *Since the time this comment was made, the rufa red knot was listed as a threatened species under the Endangered Species Act. The potential for impact is discussed in Section 4.2.5.4 of this revised Phase IIb EA. Section 7 consultation for the rufa red knot has occurred for the entire Bonner Bridge Replacement Project (B-2500), including Phase IIb. As a part of Section 7 consultation USFWS issued a revised Biological Opinion for the project. Conservation measures for the rufa red knot are listed in Project Commitment 27.*

8. **Comment:** Page 4-14 references future relocation of utilities along NC 12. The Department recommends co-locating utilities on the new bridge to avoid impacts to wildlife habitat.

Response: *NCDOT will work with all utility providers at their request to minimize the impacts of any necessary utility relocations.*

9. **Comment:** Page 4-23 states “The visitor center is inherent to USFWS-Refuge’s mission.” This is inaccurate. While the visitor center undoubtedly enhances the Refuge’s mission, the fish and wildlife resources and ecosystem integrity can be protected, managed and enhanced with or without the visitor center. The Department understands that the visitor center will likely have to be removed at some point in the future.

Response: *This sentence is revised in Section 4.2.4.2 in this revised Phase IIb EA to read: “The visitor center enhances the USFWS-Refuge’s mission.”*

10. **Comment:** The last sentence on page 4-23 is misleading. The analysis producing the 9% loss in refuge visitation is based upon tourists not having access. The loss of fishing access from the catwalk on the existing Bonner Bridge (or fishing pier after the new bridge is built) is a separate issue as there will still be access to PINWR. These two lines of thought should be separated, and the loss of fishing access from the catwalk should be dealt with independently to have an accurate assessment.

Response: *A loss of fishing access from the catwalks on the existing Bonner Bridge (or fishing pier after the new bridge is built) is not separate from access to the Refuge when a part of an economic impact assessment. Economic impact studies presented in Section 4.1.5 of the 2008 FEIS (beginning on page 4-10) concluded that there are people who come to the Outer Banks exclusively to fish from the catwalks and would not visit the Outer Banks if access to the catwalks for fishing were lost. That in turn would have an impact on the economy of the Outer Banks/Dare County area. However, the economic impact assessment in the 2008 FEIS concluded on page 4-15 that even if access the Refuge were completely eliminated, including loss of the fishing access provided by the catwalks, the associated economic losses would not likely have a major economic impact on the Outer Banks/Dare County area.*

11. **Comment:** Page 4-29 references a technical memorandum on threatened and endangered species for Phase IIb. Although we have reviewed and responded to the technical memorandum for Phase IIa, we were unaware of such a document for Phase IIb.

Response: The technical memorandum for Phase IIb had not been distributed at the time of the release of the 2013 Phase IIb EA. It has now been finalized and was sent to the USFWS and NMFS in the context of Section 7 consultation.

12. **Comment:** Page 4-31 states that the Section 7 biological conclusions for sea turtles, piping plovers (*Charadrius melodus*) and seabeach amaranth (*Amaranthus pumilus*) remain unchanged from previous Section 7 consultation. We concur with this statement, but again state that the proposed threatened rufa red knot has yet to be addressed under Section 7.

Response: See the response to comment 7 above.

13. **Comment:** On page 5-4 the Section 4(f) Evaluation considers PINWR as a historic property but continues to show a profound aversion to considering PINWR as a wildlife refuge, with the reason cited as “joint planning” in the same context as that which occurred with the Cape Hatteras National Seashore. It is unfortunate that, despite our previous comments on the issue, the FHWA still does not recognize the differences.

Response: The Section 4(f) Evaluation for Phase IIb is updated in this revised Phase IIb EA. The sentence indicating Section 4(f) only applies to the Refuge as an historic property because of joint planning has been dropped.

14. **Comment:** Although the Section 4(f) Evaluation contains a statement that no staging areas are planned for location within PINWR, there is no discussion of potential impacts from staging areas or borrow areas within the EA. These topics should be addressed in the document as they are likely to affect the human environment and natural resources somewhere on Hatteras Island.

Response: As is customary with any NCDOT project, the Design-Build Teams bidding for the Phase IIb project will determine their own staging outside the Refuge. The Design-Build Teams would negotiate with private property owners for use of private properties. Selection and use of properties for staging would have to meet county ordinances for permitting specific uses of a property, which would minimize impacts to adjoining properties and their use. At the NEPA/Section 404 Merger Team meeting on January 14, 2016, the Refuge representative indicated the Refuge would consider allowing NCDOT to use the planned Phase IIa replacement parking lot (being built as a part of Phase IIb) to be used as a staging area during Phase IIb

construction. Section 5.4.1.2 of this revised Phase IIb EA now indicates that there will be one staging site in the Refuge.

15. **Comment:** Table 8 on page 5-16 renders a biological conclusion of “Not Likely to Adversely Affect protected species” for the bridge on new location alternative. We do not concur with that biological conclusion for sea turtles. The bridge would be at most 0.75 mile from the beach, light from vehicle headlights could have an adverse effect on sea turtle hatchlings trying to reach the ocean.

Response: The commenter’s position is understood and reflected in Table 8 of this revised Phase IIb EA. FHWA and NCDOT have discussed this impact during Section 7 consultation and agreed to provide the 36-inch parapet with bicycle safe rails mounted on top for the 2014B Bridge on New Location Alternative (preferred).

16. **Comment:** Page 6-6 states “As a part of finalizing the Phase II alternatives for implementation, including the Phase IIb project that is the subject of this EA, FHWA has consulted with the USFWS ...in compliance with Section 7 of the ESA of 1973.” This is incorrect. The FHWA has consulted for Phase IIa, but not Phase IIb.

Response: The commenter is correct that at the time of the release of the 2013 Phase IIb EA neither informal nor formal consultation under Section 7 had occurred in association with Phase IIb. Section 7 consultation has since occurred and will be completed prior to the anticipated issuance of a ROD for the Phase IIb project.

17. **Comment:** Page 6-7 states “...the bridge rail commitment most likely would apply only to the Bridge within Existing NC 12 Easement alternative.” The 36-inch parapet with rails is needed for a portion of the bridge on new location alternative.

Response: The commenter’s position is understood and reflected in this revised Phase IIb EA.

18. **Comment:** The last paragraph of page 6-8 states “The agencies agreed on a parapet design of 30 inches high for Phase I and up to 36 inches high for the bridge railing through the Refuge with Phase IIa...” The agreement was not “up to 36 inches” but rather it was precisely 36 inches. This is an important distinction since anything less than 36 inches will allow more vehicle’s light to be seen from the beach, thus increasing adverse effects on sea turtles.

Response: The section referenced discusses Section 106 of the National Historic Preservation Act coordination and the wording in the First Amendment to the Programmatic Agreement under Section 106 (see Appendix E of the Phase IIa ROD). The agreement with USFWS for protecting sea turtles is precisely 36 inches.

19. **Comment:** Page 7-1 states "...FHWA believes that the changes identified and assessed in this EA for the two Phase IIb detailed study alternatives...would not result in new, significant impacts not previously identified in the 2008 FEIS, 2010 EA, 2010 ROD, or Phase IIa EA". The Department does not agree with this conclusion. The document does not address potential impacts to the recently proposed threatened rufa red knot. We believe that adverse effects to this species are likely to occur with the bridge within existing NC 12 easement alternative but likely avoided with the bridge on new location alternative.

Response: The 2008 FEIS does assess the impact on migratory birds in Section 4.7.6.7 of the 2008 FEIS (beginning on page 4-113), which would include the rufa red knot. The characteristics of migratory birds in the Bonner Bridge Replacement Project (B-2500) project area are discussed in Section 3.7.6.6 of the 2008 FEIS beginning on page 3-100. The rufa red knot is mentioned in the 2008 FEIS as a candidate species in Section 3.7.7.3 of the 2008 FEIS on page 3-105. Although the regulatory status of the rufa red knot has changed and thus, the regulatory requirements related to documenting effects and agreeing on mitigation, this regulatory change does not represent a significant new impact that warrants the preparation of Supplemental Final Environmental Impact Statement. FHWA and NCDOT have since agreed to nondiscretionary reasonable and prudent measures, which include the terms and conditions, for minimizing take of the rufa red knot that were presented in USFWS's amendment to its Biological and Conference Opinions provided in a letter dated February 9, 2015.

Section 4(f) Evaluation Comments

20. **Comment:** The Department does not concur with Section 4(f) approval of this project at this time. We would be pleased to reconsider this position upon receipt of material that includes adequate information and full discussion of measures to minimize harm.

Response: A revised Section 4(f) evaluation is presented as Chapter 5 of this revised Phase IIb EA. Since the release of the 2013 EA, additional coordination has occurred with USFWS and National Park Service (NPS) representatives including the NEPA/Section 404 Merger Team meetings described in Section 6.2 of this revised Phase IIb EA and Endangered Species Act consultation described in Section 6.3 of this revised Phase IIb EA. USFWS and NPS representatives concurred with the 2014B Bridge on New Location Alternative as the Preferred Alternative. The measures to minimize harm presented in Section 5.7 of this revised Phase IIb EA were developed in coordination with USFWS representatives.

21. **Comment:** In conclusion, we have worked in good faith with NCDOT and FHWA for many years in an effort to ensure the citizens of the county, state, and nation have dependable transportation along North Carolina's Outer Banks. We remain

committed to working with all parties to accommodate transportation needs within the confines and limits allowable by law, regulation and policy.

Response: FHWA and NCDOT agree that Department of Interior (DOI) has worked in good faith with NCDOT and FHWA. FHWA and NCDOT look forward to continuing to work with DOI representatives.

US Environmental Protection Agency (USEPA)

1. **Comment:** Environmental Impacts. EPA does not have an environmentally preferred alternative identified at this time. However, it was recognized by the NCDOT's expert Panel that the Bridge on New Location DSA would allow for natural processes to occur in the vulnerable Rodanthe area without the potential need for additional interim actions to protect the existing NC 12 easement from erosion and storm events. This alternative would also better allow for natural coastal processes to occur, would minimize potentially adverse effects to federally protected species, and would potentially lessen the bridge from the direct hazards and complications created by the proximity to the ocean and from future sea level rise. The Bridge on New Location DSA would also avoid the relocation of the Liberty Gas Station/Island Convenience Store.

Response: NCDOT and FHWA acknowledge both that the USEPA did not have an environmentally preferred alternative at that time and the factors the USEPA considers important to that decision. Ultimately, as a member of the project's NEPA/Section 404 Merger Team, the USEPA representative concurred that the 2014B Bridge on New Location Alternative was the LEDPA.

F.2.2 State Agencies

North Carolina Department of Crime Control and Public Safety, Division of Emergency Management, Floodplain Management Program

Comment: No comment.

Response: No response necessary.

North Carolina Department of Cultural Resources, State Historic Preservation Office

Comment: No comment.

Response: No response necessary.

North Carolina Department of Environment and Natural Resources (now Department of Environmental Quality), Division of Coastal Management (NCDEQ-DCM)

1. **Comment:** This project is being carried through the NEPA/404 Merger Process, and DCM is a member of the NEPA/404 project team. It appears as though the information contained within the EA is consistent with the information that has been

provided to DCM, and upon which we have commented, through the NEPA/404 Merger Process.

Response: No response necessary.

- Comment:** DCM understands that the transportation link that the Herbert C. Bonner Bridge and the connecting NC Highway 12 provide between Rodanthe on Hatteras Island and Bodie Island is a critical component in the safety of the residents and visitors of Hatteras Island and Ocracoke Island, and the economic vitality of the Outer Banks. DCM is ready to continue to assist NCDOT in any way within our authority to finalize and implement a permanent solution to this complicated and important transportation need.

Response: FHWA and NCDOT appreciate that DCM is ready to continue to assist NCDOT in any way within their authority, to finalize and implement a permanent solution to the complicated and important transportation need of NC 12.

- Comment:** A formal DCM review of the project to determine consistency with the state's Coastal Management Program will occur in conjunction with a review of the Coastal Area Management Act (CAMA) major permit application. The CAMA major permit application will be circulated to the network of state agencies that comprise North Carolina's Coastal Management Program. The statutes, rules and policies of each of these agencies must be considered during the review of the CAMA major permit application. This process will also include a determination of consistency with the enforceable policies of the relevant CAMA land use plans.

Response: This procedure is understood.

- Comment: Permanent Erosion Control Structure in an Ocean Shoreline [G.S. 113A-115(b)].** G.S. 113A-115.l(b) requires that no person shall construct a permanent erosion control structure in an ocean shoreline.

NCDOT would need to demonstrate in the CAMA major permit application to DCM that any proposed retaining walls would only serve their defined purpose to keep approach fills within the existing NC 12 easement, and would not be constructed in a manner that would serve an additional purpose of acting as a permanent erosion control structure.

It is important to note that the Coastal Resources Commission (CRC) does not have the authority to issue a variance for compliance with a statute.

Response: The proposed retaining walls would be west of the forecast 2060 high-erosion shoreline. The proposed retaining walls would only serve their defined purpose to keep approach fills within the existing NC 12 easement and would not be

constructed in a manner that would serve an additional purpose of acting as a permanent erosion control structure. NCDOT will demonstrate this in its CAMA major permit application.

5. **Comment: Erosion Setbacks for Oceanfront Construction [NCAC 15A.07H.0306(a)(2)].** These rules include erosion setbacks for oceanfront construction that are based on average long-term erosion rates that reflect changes in the North Carolina shoreline over nearly half a century.

It appears from the subject EA that based on current coastal conditions the Bridge on New Location alternative would meet the erosion setbacks for oceanfront construction, but that the Bridge within Existing NC 12 Easement alternative, including the associated frontage roads, would not meet the erosion setbacks for oceanfront construction. At the time of construction, the final project will need to adhere to the applicable oceanfront setbacks.

Response: The Bridge within Existing NC 12 Easement Alternative was not ultimately selected as the LEDPA or the Preferred Alternative. As a member of the project's NEPA/Section 4(f) Merger Team, the NCDEQ-DCM representative concurred that the 2014B Bridge on New Location Alternative was the LEDPA. The concern raised in this comment does not apply to the Bridge on New Location Alternative.

6. **Comment: Public Trust Usage of Lands and Waters [15A NCAC 07H.0208(a)(2)(G)] and [15A NCAC 07H.0306(g)].** "Development shall not jeopardize the use of the waters for navigation or for other public trust rights in public trust areas including estuarine waters", and "Development shall not interfere with legal access to, or use of, public resources nor shall such development increase the risk of damage to public trust areas." Examples of navigation and other public trust rights that must be considered include, but are not limited to, commercial and recreational fishing vessels in Pamlico Sound and the Atlantic Ocean, fishing from the ocean and soundside shoreline, surfing, walking along the beach, swimming, etc.

DCM is concerned with the loss of recreational access to the oceans and sounds in the project area. The subject EA mentions that formal consultation with the National Marine Fisheries Service (NMFS) in 2013 yielded a new concern related to the effect of existing fishing at Oregon Inlet on protected turtles. The subject EA states that to satisfy NMFS concerns, "no fishing" signs will be installed on the catwalks of the existing Bonner Bridge during construction and on the portion of the existing Bonner Bridge that will be left in place as a pier. NCDOT should continue working with NMFS and the rest of the NEPA 404 project team to minimize the impacts of this project on public trust usage of lands and waters. All efforts should be made to reach an agreement to allow future fishing at Oregon Inlet.

Response: Fishing will not be allowed from the bridge proposed for Phase IIb; however, FHWA and NCDOT will continue working with NMFS and the rest of the NEPA/Section 404 Merger Team to minimize the impacts of the entire project on public trust usage of lands and waters, including efforts to reach an agreement to allow future fishing at Oregon Inlet.

7. **Comment: Avoidance and Minimization of CAMA Areas of Environmental Concern [15A NCAC 07H.0208(a)(2)(A)].** 15A NCAC 07H.0208(a)(2)(A) states that: "The location, design, and need for development, as well as the construction activities involved shall be consistent with the management objective of the Estuarine and Ocean System AEC (Rule .0203 of this subchapter) and shall be sited and designed to avoid significant adverse impacts upon the productivity and biologic integrity of coastal wetlands, shellfish beds, submerged aquatic vegetation as defined by the Marine Fisheries Commission, and spawning and nursery areas."

The Bridge on New Location alternative has been identified to impact approximately 11.23 acres of submerged aquatic vegetation (SAV) habitat. DCM looks forward to additional discussions with the NEPA/404 project team regarding additional avoidance and minimization of impacts to SAV. If the Bridge on New Location alternative is selected, then mitigation options for the SAV impacts should be included in future NEPA/404 project team discussions.

Response: The NEPA/Section 404 Merger Team was involved in considering additional avoidance and minimization of impacts to SAV (including consideration of the additional Bridge on New Location Alternative alignments 2014A and 2014B), as well as discussions on mitigating SAV impacts at the Concurrence Point 4a meeting on January 14, 2016. At the Concurrence Point 4a meeting, the NEPA/Section 404 Merger Team agreed to continue discussion of mitigation for impacts to SAV with a resolution prior to final permit applications.

8. **Comment:** The Bridge within Existing NC 12 Easement alternative has been identified to impact approximately 11 acres of intertidal surf zone by the 2060 predicted shoreline. A bridge in the surf zone may negatively affect water quality, flow, sediment grain size, and topography. In addition to these impacts, long term maintenance will be needed while the bridge is in the surf zone. Although the NCDOT has committed to an April 1 to July 15 moratorium for maintenance, there is some concern that this moratorium does not extend long enough to minimize impacts to fisheries resources. Generally in this location the moratorium extends from April 1 to July 31 to minimize turbidity when late summer and fall spawning larvae may be present (red drum, speckled trout, and silver perch). This longer moratorium may be requested depending on the maintenance activities required. Although these impacts may not immediately be present at the time of construction, they may be present over the lifetime of the bridge and should therefore be included

in NEPA/404 project team discussions. DCM would welcome additional discussions with the NEPA/404 project team on this issue.

Response: The Bridge within Existing NC 12 Easement Alternative was not ultimately selected as the LEDPA or the Preferred Alternative, as discussed in Section 3.4 of this revised Phase IIb EA. The issues raised are not related to the preferred Bridge on New Location Alternative.

9. **Comment: Imminently Threatened Structures, 15A NCAC 07H.0306(k) and Temporary Erosion Control Structures, 15A NCAC 07H.0308(a)(2)(B).** 15A NCAC 07H.0306(k) states that: "Permits shall include the condition that any structure shall be relocated or dismantled when it becomes imminently threatened by changes in shoreline configuration as defined in 15A NCAC 07H.0308(a)(2)(B). Any such structure shall be relocated or dismantled within two years of the time when it becomes imminently threatened, and in any case upon its collapse or subsidence. However, if natural shoreline recovery or beach fill takes place within two years of the time the structure becomes imminently threatened, so that the structure is no longer imminently threatened, then it need not be relocated or dismantled at that time. This permit condition shall not affect the permit holder's right to seek authorization of temporary protective measures allowed under 15A NCAC 07H.0308(a)(2)." This requirement could be problematic for the frontage roads that are part of the proposed Bridge within Existing NC 12 Easement alternative.

Response: The Bridge within Existing NC 12 Easement Alternative was not ultimately selected as the LEDPA or the Preferred Alternative, as discussed in Section 3.4 of this revised Phase IIb EA. The issues raised are not related to the preferred Bridge on New Location Alternative.

10. **Comment:** If NCDOT proceeds with an alternative that is determined to be inconsistent with the North Carolina Administrative Code, then DCM will have to deny a CAMA permit application for the alternative for procedural reasons. In that situation, NCDOT would have the option of petitioning the CRC for a variance to undertake a project that is prohibited by the North Carolina Administrative Code. A petition for a variance recognizes the legal restrictions as valid, but requests an exception to the restrictions because of hardships resulting from unusual conditions. A final permit decision must be made before a petition for a variance can be submitted. As already stated, it is important to note that the CRC does not have the authority to issue a variance for compliance with a statute. DCM will work closely with the NEPA/404 project team to ensure that whatever alternative is selected as the LEDPA complies with CAMA and the North Carolina Administrative Code to the maximum extent practicable.

As stated on the first page of these comments, DCM understands that the transportation link that the Herbert C. Bonner Bridge and the connecting

NC Highway 12 provide between Rodanthe on Hatteras Island and Bodie Island is a critical component in the safety of the residents and visitors of Hatteras Island and Ocracoke Island, and the economic vitality of the Outer Banks. DCM is ready to continue to assist NCDOT in any way within our authority to finalize and implement a permanent solution to this complicated and important transportation need.

In that regard, DCM looks forward to our continued involvement with this project.

***Response:** The CAMA permit variance procedure is understood. In a letter dated June 18, 2015 (see Appendix A), NCDEQ-DCM indicated: "After reviewing both alternatives from a coastal resource management perspective, and based upon potential Coastal Area Management Act (CAMA) permitting obstacles associated with the Bridge in Existing Alignment alternative, NCDCM fully supports the designation of the Phase IIb Bridge on New Location Alternative as the Least Environmentally Damaging Practicable Alternative (LEDPA). Our support was further indicated by our signature yesterday on the Phase IIb Concurrence Point 3 form. It should be pointed out that our support for this alternative should not be interpreted as an indication of any predetermination of final CAMA permitting decisions."*

North Carolina Department of Environment and Natural Resources (now Department of Environmental Quality), Division of Water Resources (NCDEQ-DWR)

Project Specific Comments

1. **Comment:** It is stated in Section 3.3 that the preferred alternative is to build a bridge within the existing NC 12 easement. This alternative would place the structure such that it would be located within the surf zone in the not-to-distant future. The NCDWR has expressed concerns about this alternative and the effects it would have on recreation, wildlife, and the structure itself in the past. Concerns expressed in the past by the NCDWR regarding this alternative are still valid today.

***Response:** The commenter's position is understood. The Bridge within Existing NC 12 Easement Alternative was not selected as the LEDPA or the Preferred Alternative. As a member of the project's NEPA/Section 404 Merger Team, the NCDEQ-DWR representative concurred that the 2014B Bridge on New Location Alternative was the LEDPA. The concern raised in this comment does not apply to the Bridge on New Location Alternative.*

2. **Comment:** In looking at Table 8 (Comparison of Key Impacts of the Phase IIb Alternatives), it appears that the impacts from the bridge on new location are generally less than those of the existing easement, even though some impacts may be of a different type.

***Response:** The commenter's position is understood. The 2014B Bridge on New Location Alternative was ultimately selected as the LEDPA and Preferred Alternative.*

3. **Comment:** The Table 8 comparisons of recreational impacts don't appear to be stated equally. The impacts for the new location alternative state that there will be impacts primarily to wind surfers and kite boarders; the existing easement alternative simply states "beach and offshore recreation on the Atlantic Ocean ultimately affected by bridge presence," As is discussed in other parts of the document, recreational losses associated with the existing easement alternative are rather extensive. These potentially include the loss of a top national surfing spot, ocean kayaking, fishing swimming, kite boarding, hiking, and wind surfing. Although not reflected in Table 8, the recreational opportunities with a bridge in the current easement would be significantly greater than that of a bridge on new location.

***Response:** The commenter's position is understood. The Bridge within Existing NC 12 Easement Alternative was not selected as the LEDPA or the Preferred Alternative. Table 8 presents a brief summary comparison of the Phase IIb alternatives. The full analysis, which was taken into consideration in the LEDPA and Preferred Alternative decision is presented in Section 4.2.4 of the 2013 Phase IIb EA and this revised Phase IIb EA.*

4. **Comment:** It appears that the end of the bridge and service roads for the existing easement alternative in Rodanthe are seaward of the predicted 2060 shoreline erosion area. If this is the case, it is unclear how these areas will be protected in the future from erosion. The protection of the end of the bridge and service roads is critical to impacts of the project and need to be discussed. If these areas are vulnerable to future erosion and washout, would additional sand replenishment be required as these areas become vulnerable or is there another way to protect them?

***Response:** The frontage roads are seaward of the 2060 high erosion shoreline. The end of the bridge is not seaward of the 2060 erosion shoreline. NCDOT would maintain access to private property via existing NC 12 in the case of the preferred 2014B Bridge on New Location Alternative until, because of shoreline changes, it is no longer reasonable and feasible to do so. The same would be the case for the service roads associated with the Bridge within Existing NC 12 Easement Alternative. How that will be accomplished will depend on the circumstances, but it will more likely involve road cleaning, road repair, or road relocation away from the shoreline. It is unlikely that NCDOT would nourish beaches, build dunes, or take other protective actions to maintain a public right-of-way to a property isolated from public access by shoreline erosion or a breach.*

General Comments

5. **Comment:** After the selection of the preferred alternative and prior to an issuance of the 401 Water Quality Certification, the NCDOT is respectfully reminded that they will need to demonstrate the avoidance and minimization of impacts to wetlands (and streams) to the maximum extent practical. In accordance with the Environmental Management Commission's Rules (15A NCAC 21H.0506[h]), mitigation will be required for impacts of greater than 1 acre to wetlands. In the event that mitigation is required, the mitigation plan shall be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as wetland mitigation.

Response: NCDOT will meet the requirements indicated. Since this comment was made, the project's NEPA/Section 404 Merger Team has concurred that impacts to wetlands and other jurisdictional waters, as well as other community, cultural, and natural resources, have been avoided and minimized to the extent practicable in the design of the 2014B Bridge on New Location Alternative (preferred), selected as the LEDPA at the June 17, 2015 Concurrence Point 3 meeting. NCDOT will continue to coordinate with NDDWQ- DWR throughout the NEPA/Section 404 Merger Team process until the permit application.

6. **Comment:** In accordance with the Environmental Management Commission's Rules (15A NCAC 2H.0506[h]), mitigation will be required for impacts of greater than 150 linear feet to any single stream. In the event that mitigation is required, the mitigation plan shall be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as stream mitigation.

Response: There are no jurisdictional streams in the Phase IIb project area.

7. **Comment:** Future documentation, including the 401 Water Quality Certification Application, should continue to include an itemized listing of the proposed wetland and stream impacts with corresponding mapping.

Response: This documentation will be provided.

North Carolina Department of Environment and Natural Resources, now Department of Environmental Quality, Washington Regional Office

Comment: After review of this project it has been determined that the [NCD]ENR permit(s) and/or approvals indicated may need to be obtained in order for this project to comply with North Carolina Law:

- Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D 1900.

- Sedimentation and erosion control must be addressed in accordance with NCDOT's approved program. Particular attention should be given to design and installation of appropriate perimeter sediment trapping devices as well as stable stormwater conveyances and outlets.
- 401 Water Quality Certification
- Abandonment of any wells, if required must be in accordance with Title 15A Subchapter 2C.0100
- Compliance with 15A NCAC 211 1000 (Coastal Stormwater Rules) is required
- If existing water lines will be relocated during the construction, plans for the water line relocation must be submitted to the Division of Water Resources Public Water Supply Section at 1634 Mail Service Center, Raleigh, North Carolina 27699-1634. For more information, contact the Public Water Supply Section, (919) 707-9100.

Response: As applicable, NCDOT will obtain these permits and/or approvals.

North Carolina Department of Environment and Natural Resources, now Department of Environmental Quality, Wildlife Resources Commission (NCWRC)

1. **Comment:** Under Project Commitments; Commitment 11, Night-time Construction states: "NCDOT would work with NCDENR-DMF, NMFS, NPS, and USFWS to determine other areas near project construction where night lighting would need to be avoided or limited". Please add NCWRC to this list of agencies, NCWRC staff has been involved in prior night lighting coordination with this project.

Response: NCWRC has been added to the list of agencies in Commitment 11 in the Project Commitments at the front of this revised Phase IIb EA. FHWA and NCDOT apologize for not making this addition in response to the same comment on the 2013 Phase IIa EA.

2. **Comment:** Two alternatives were carried forward for detailed study. Both would construct NC 12 on a bridge with one alternative located within the existing right of way and the other on new location. At this time we do not have any specific comments related to the selection of the preferred alternative, however as the project progresses through the NEPA/404 Merger process we will continue to assess potential impacts associated with the selection and construction of the preferred alternative.

Response: The commenter's position is understood. As a member of the project's NEPA/Section 404 Merger Team, the NCWRC representative concurred that the 2014B Bridge on New Location Alternative was the LEDPA.

F.2.3 Local Government—Dare County

1. **Comment:** The health, safety, and welfare of our residents and visitors are the highest priority of the Dare County Board of Commissioners. First and foremost, we seek long-term improvements for NC Highway 12 that will enhance public safety.

It is imperative that there be safe and reliable transportation access to and from Hatteras Island. Without it, the simplest of activities, such as going to a doctor's appointment becomes an arduous daylong endeavor with an uncertain outcome.

When people must leave Hatteras Island for a needed journey, they deserve the peace of mind of knowing that Highway 12 will be viable and operating at the end of the day and able to reunite them with their family waiting at home.

Furthermore, our economy, culture, and the social fabric of our community are dependent on reliable transportation to and from Hatteras Island. Whether this is for medical needs or providing educational opportunities for our children, the public deserves assurance that safe and predictable transportation is always available.

NCDOT has presented two options for Phase IIb of the Bonner Bridge Replacement Project. The preferred alternative selected by NCDOT is to build a bridge approximately 2.3-mile-long, within the existing NC 12 easement. The other alternative would be a 2.6-mile-long bridge on a new location mostly over the Pamlico Sound.

The decision to support one or the other alternative is based on the County's long history of bridge and road construction efforts since 1993, and more specifically since 2001. There are two main points that have influenced Dare County's decision process

1. In regards to the NCDOT preferred alternative to utilize the existing NC 12 easement, we understand the concern of effected property owners who will have a bridge structure altering the view between their home and the ocean. We also appreciate that there may be property owners who will lose their homes and businesses because of the sweeping return access road at the south terminus of the bridge.
2. The other alternative would provide a bridge on a new location that would take less property and preserve a very important business that has provided a valuable service to the community. While this alternative would have a lower profile bridge and be less obstructive of the view of the Pamlico Sound, it would greatly alter water sports in the area. Building this alternative through 2.6 miles of fish nurseries in the some of the most pristine waters on the east coast, if not the nation, will require time consuming environmental assessments and impact statements, and will be subject to the rigors of NEPA review and an uncertain

permitting process. This alternative has yet to be vetted by the environmental special interest groups.

***Response:** The commenter's position is understood. Since the release of the 2013 Phase IIb EA, the Bridge on New Location Alternative has been further discussed with state and federal environmental resource and regulatory agencies. In the context of their participation in the project's NEPA/Section 404 Merger Team, they all agreed that the 2014B Bridge on New Location Alternative was the LEDPA. As part of the public NEPA process for Phase IIb, all interested parties, including environmental groups, have had an opportunity to vet both the Bridge on New Location and Bridge with Existing NC 12 Easement alternatives.*

2. **Comment:** Based on these facts, the Dare County Board of Commissioners supports the efforts of the North Carolina Department of Transportation in their Preferred Alternative of the bridge within the existing NC 12 easement. We have arrived at this conclusion based on the following:

- We have a strong belief that NCDOT would never be able to secure a permit to build in and over the waters of the Pamlico Sound.
- Above all other reasons, the safety, health, and welfare of the residents and visitors to Hatteras Island must be our first and overriding concern. As a County Government, we are committed to providing essential emergency services 24 hours a day, 365 days a year. History has proven that in the aftermath of destructive and devastating storms, the delivery of all County Services demands a reliable, dependable, and permanent bridge and NC Highway 12.
- The construction must start now, and NCDOT's preferred alternative gives the County the best opportunity to provide the essentials of safety, health, and welfare for its people.

***Response:** FHWA and NCDOT agree that a reliable, dependable, and permanent bridge and NC 12 are needed. NCDOT has coordinated with the resource agencies responsible for issuing permits. Refinements were made to the Bridge on New Location Alternative based on that coordination. The project's NEPA/Section 404 Merger Team, which includes all resource permitting agencies, agreed that the 2014B Bridge on New Location Alternative was the LEDPA. As a result of coordination with the interagency NEPA/Section 404 Merger Team, FHWA and NCDOT believe that permits can be obtained for the Bridge on New Location Alternative, and NCDOT has changed its Preferred Alternative to the 2014B Bridge on New Location Alternative.*

3. **Comment:** In endorsing NCDOT's preferred alternative, the Dare County Board of Commissioners offers the following suggestions for NCDOT to take under advisement:
1. Consider beach nourishment as a front line of defense for the bridge to be built in the existing NC 12 easement. We encourage NCDOT to safeguard this infrastructure by continuing a maintenance level of beach nourishment after the new bridge is built.
 2. Consider bringing the new bridge down to grade further north in the Village of Rodanthe. This could preserve the Island Convenience business, which is not only one family's business; it is a vital commercial center for the Rodanthe-Waves-Salvo Villages and serves as a nerve center for the community. This valuable business provides 30 plus fulltime year-round jobs and supplies essential goods and services to area residents and visitors.

Response: NCDOT has no plans for beach nourishment after the new bridge is built. Bringing the Bridge within Existing NC 12 Easement Bridge to grade further north in the Village of Rodanthe would result in the bridge ending oceanward of the forecast 2060 high erosion shoreline, risking that an extension of the bridge would be required prior to 2060. The desirability of preserving the Island Convenience business was one factor in the decision to ultimately identify the 2014B Bridge on New Location Alternative as the Preferred Alternative.

Additional Considerations –

4. **Comment:** In addition to the reasons outlined above, Dare County believes there are compelling public safety and other considerations for endorsing NCDOT's preferred alternative as the practical solution that will provide timely stabilization of NC Highway 12 –
- As the transportation lifeline for Hatteras Island, NC Highway 12 has a direct bearing on the public health, safety, and welfare of over 4,000 residents and 50,000 peak season visitors per day. It is the corridor through which Hatteras Island residents and visitors receive their electrical service and essential commodities such as food, fuel, mail, and medication.
 - Throughout the year, on an on-going basis, NC Highway 12 is the lifeline that connects its residents and visitors to hospitals and specialized medical care. Especially during times of adverse weather when medical helicopters cannot fly, Highway 12 is the means by which Dare County ambulances transport critically ill and injured patients to trauma centers and advanced cardiac care facilities. Without a stable and reliable highway, countless lives could be lost due to lack of transportation access to advanced health care.

- Highway 12 serves a vital role during emergency hurricane evacuations. It is the road that residents and visitors on both Hatteras and Ocracoke Islands depend upon to escape from harm's way. It is an official evacuation route that is needed to provide a path to safety for thousands of people during times of crisis.
- Following a hurricane, NC Highway 12 serves as the only corridor for getting medical supplies, food, fuel, cleaning and reconstruction materials to the Villages of Hatteras Island. It also used by local, state, and federal disaster assessment teams, insurance adjusters, and recovery personnel.
- Stabilizing NC Highway 12 will contribute in a direct way to the economic health and wellbeing of Dare County and the State of North Carolina. Hatteras Island accounts for approximately 25% of Dare County's economy and generates millions each year in local, state, and federal taxes. Without a reliable highway, the economy of both Dare County and the State of North Carolina will suffer adverse and irreparable harm.

Response: The commenter's position is understood. The preferred 2014B Bridge on New Location Alternative also will provide timely stabilization of NC 12 in the project area by removing NC 12 from its current location adjacent to the shoreline.

F.3 Non-Governmental Organization Comments and Responses

This section responds to written comments on the EA submitted by non-governmental organizations (NGOs). Each substantive comment requiring a response is listed below, followed by a response. The comments in this section quote the correspondence received. The original correspondence is presented in Appendix G.

F.3.1 Citizens Action Committee to Replace Herbert C. Bonner Bridge – Submitted by Beth Midgett, Chair

Comment: The Action Committee supports whichever alternative NCDOT determines to be the most stable and reliable while also meeting the greatest need of having the project completed as quickly as possible. Whichever option is chosen, the committee asks that NCDOT address the following issues:

- Give consideration in designing the alternatives to the visual and physical impacts to the neighborhoods in northern Rodanthe; please consider the aesthetic compatibility of the chosen alternative.
- Care should be taken to preserve the Island Convenience store if possible.
- The project should be designed so that the traffic flow during construction isn't restricted during prime visitor seasons.

- We support the emergency nourishment project at the S-Curve/Mirlo Beach area; this project should start as soon as possible.
- In recognition of the Refuge and the diverse habitats in the area, the alternative chosen should be the least environmentally damaging practicable alternative.

Response: The commenter's position is acknowledged. Visual and physical impacts to Rodanthe and aesthetic compatibility were considered in the ultimate selection of the 2014B Bridge on New Location Alternative as the Preferred Alternative. Traffic flow on NC 12 will be maintained during construction except for possible brief closures during the connection of the Bridge on New Location Alternative at its northern and southern ends to existing NC 12. NCDOT recognizes that restriction of traffic flow particularly should be avoided during prime visitor seasons. The temporary nourishment project was completed in September 2014. The 2014B Bridge on New Location Alternative was determined by the project's NEPA/Section 404 Merger Team to be the LEDPA.

F.3.2 Hatteras Island Property Management Group – Sun Realty, Hatteras Realty, Outer Beaches Realty, Surf or Sound Realty, Colony Realty, Midgett Realty

Comment: The Hatteras Island Property Management Group emphasizes the importance of vacation rental properties to the economy and tourism in Rodanthe. Rental homes are the primary source of visitor lodging in the area, and also the largest employment sector on Hatteras. Renters support the local retail and service providers. Visitors need reliable access to the island, and a highway is crucial for emergency evacuations. The Hatteras Island Property Management Group supports whichever alternative NCDOT determines to be the most stable and reliable while also meeting the greatest need of having the project completed as quickly as possible. Whichever option is chosen, the committee asks that NCDOT address the following issues:

- Give consideration in designing the alternatives to the visual and physical impacts to the neighborhoods in northern Rodanthe; please consider the aesthetic compatibility of the chosen alternative.
- Care should be taken to preserve the Island Convenience store if possible.
- The project should be designed so that the traffic flow during construction isn't restricted during prime visitor seasons.
- We support the emergency nourishment project at the S-Curve/Mirlo Beach area; this project should start as soon as possible.
- In recognition of the Refuge and the diverse habitats in the area, the alternative chosen should be the least environmentally damaging practicable alternative.

Response: The commenter's position is acknowledged. See the response above to the identical comment made by Citizens Action Committee to Replace Herbert C. Bonner Bridge.

F.3.3 Southern Environmental Law Center

1. **Comment:** NCDOT and FHWA's preferred alternative is to construct a 2.5-mile bridge in the existing NC-12 easement in one of the highest-erosion areas on the Outer Banks, where it will extend into a developed area and a national wildlife refuge and will soon be located on the beach, in the surf zone, and in the Atlantic Ocean. Because of its entirely foreseeable and devastating effects on tourism, private property, federally protected wildlife habitat, and the natural environment, we oppose this plan. We also note that the majority of the Merger Team agencies did not concur with NCDOT and FHWA's plans for "Phase II" of the Project.

Instead of pursuing these untested and unpopular ocean bridges, NCDOT and FHWA should route the transportation corridor away from these vulnerable high-erosion areas of the Refuge. NCDOT and FHWA could address the purpose and need of the entire project with a single Pamlico Sound bridge to bypass the entire Pea Island National Wildlife Refuge (the "Refuge"), which we have long supported. In the alternative, NCDOT and FHWA could address both "Phase II" "hot spot" areas by constructing the FWS-proposed seven-mile bridge alternative now, and could later construct the remainder of a Pamlico Sound corridor that could tie into and connect that seven-mile bridge and the "Phase I" replacement bridge over Oregon Inlet.

NCDOT and FHWA's analysis of their proposed "Phase IIa" in-easement bridge raised many of the same concerns and issues as does the current EA for "Phase IIb." Accordingly, we incorporate by reference our March 28, 2013 comments on the "Phase IIa" EA to supplement the comments we offer below. These "Phase IIa" comments are attached as Attachment 1. In addition, as explained below, the "Phase IIb" EA: (1) violates NEPA by illegally segmenting the Bonner Bridge replacement project, (2) fails to satisfy NEPA because a supplemental environmental impact statement ("SEIS") is necessary to address new information and new circumstances, (3) fails to satisfy Section 4(f) of the Department of Transportation Act of 1966 because a revised 4(f) analysis is required to address the specific "Phase IIb" alternatives and their use of the Refuge.

Response: The January 24, 2014 comments from Southern Environmental Law Center, Defenders of Wildlife, and National Wildlife Refuge Association were submitted during a period of litigation among those parties and FHWA, NCDOT, and NCDEQ-DCM in connection with the NC 12 Replacement of the Herbert C. Bonner Bridge Project. Over a year after the comments were submitted, the parties executed a Settlement Agreement in April 2015, and the lawsuits were dismissed

voluntarily in August 2015. The comments were submitted at a point in time when the Bridge within Existing NC 12 Easement Alternative was NCDOT's preferred alternative, which is no longer the case. The commenters' preference for a single Pamlico Sound bridge or a seven-mile alternative is recognized.

The commenter's March 28, 2013 comments on the Phase IIa EA were answered in the 2013 ROD for Phase IIa, beginning on page C-44 of Appendix C. The three positions identified in the final paragraph of this comment are addressed below in responses to the commenter's more detailed comments on these topics.

2. **Comment:** As we have explained in numerous previous comments on various phases of the Project, NCDOT and FHWA have illegally segmented the environmental evaluation of the Project by disclosing, and evaluating each of its components separately, in isolation. The Record of Decision ("ROD") for the Project disclosed only the "Phase I" bridge over Oregon Inlet; the "Phase IIa" EA and ROD address only the proposed permanent bridge over the new Pea Island inlet; and the current EA addresses only the proposed "Phase IIb" permanent bridge over the "S Curves" "hot spot" area of high erosion near Rodanthe, as discussed in more detail in Part II below. A beach nourishment effort is also proceeding separately in the Rodanthe breach area in an attempt to buy time while NCDOT and FHWA decide on and construct a permanent solution in that area. As the current "Phase IIb" EA recognizes (p. 4-14), the beach nourishment is part of the implementation of the Project. Thus, its effects must be evaluated together with the other components, not piecemealed and considered in isolation in a separate EA. Additional components of the Project will only be disclosed, doubtless in a similar piecemeal fashion, after these four components are in place or under construction.

This procedure of piecemealed environmental assessments violates NEPA because it evades any comprehensive evaluation of the full Project's impacts and ensures that no fair comparison of the available alternatives will take place until there is already an irretrievable commitment to maintaining NC-12 through the Refuge to support the "Phase I" bridge, no matter how high the costs or how great the damage to the human environment that will result.

Segmenting the Project in this way is impermissible under any circumstances, but it is all the more egregious because four components of this single Project are now planned for concurrent funding and construction. They cannot fairly be characterized as distinct future projects or even phases of a project, separated by time or space. Despite the fact that these components all belong to a single Project and are proceeding and being implemented concurrently, they are being evaluated in separate environmental documents, none of which accounts for the combined, cumulative effects of the Project on the Refuge and human environment.

Response: NCDOT and FHWA disagree with the assertion that the project has been illegally segmented. The reasons why the project's NEPA process does not involve illegal segmentation were described previously in the following locations: the response to this organization's comment 3 on the scoping of potential Phase IIa alternatives (Appendix C of the Phase IIa EA, page C-13), Section 2.3.5 of the 2010 EA (beginning on page 2-31); the response to this organization's comment 9 on the Revised 4(f) Evaluation (Appendix F of the 2010 EA, beginning on page F-37); the responses to this organization's comments 8 to 10 in the 2010 ROD (beginning on page C-48) and responses to comments on the 2013 Phase IIa EA presented in the 2013 Phase IIa ROD (comment 1 beginning on page C-44).

Section 2.6.2.2 of the 2013 Phase IIb EA and this revised Phase IIb EA states that the Rodanthe S-Curves beach nourishment project is a maintenance activity and not a part of the Phase IIb project. An EA for the short-term nourishment project was published by the USACE in October 2013 and summarized the proposed action and expected impacts. As stated in the EA:

The short-term nourishment program is expected to have minimal impact on the environment. Material that will be placed on the beach will meet all required compatibility requirements and is expected to be similar to the native material in color, composition, and size. Although not a specific purpose of the project, the expanded beach will provide potentially suitable nesting areas for turtles where little suitable habitat exists now. Deposition of material on the beach will have short-term adverse effects on turbidity and loss of benthic communities, but studies indicate that these effects are of short duration and that near-shore communities recover quickly after the project is completed. Fin fish will avoid the project area while the sand is being deposited near the shore....No wetlands will be impacted by the proposed project....A Section 401 Water Quality Certification No. 003963 was issued by the NC Division of Water Quality on September 10, 2013. Provided the applicant complies with the special conditions associated with the certification, no appreciable impacts to water quality standards will occur. The project "May Affect, but is Not Likely to Adversely Affect" the loggerhead sea turtle, green sea turtle, leatherback sea turtle, and the piping plover.

In addition to being minimal and short-term, the impacts of nourishment (completed in September 2014) did not occur at the same time as impacts associated with the long-term Phase IIb project.

The Phase II environmental documents are not separate stand-alone documents, but rather should be considered together with all previous environmental documents prepared for the Project. The Phase IIa and IIb documents were done under the requirements of Title 23, Section 771.129 of the Code of Federal Regulations (23 CFR

771.129), which provides: “A written evaluation of the final EIS will be required before further approvals may be granted if major steps to advance the action (e.g., authority to undertake final design, authority to acquire a significant portion of the right-of-way, or approval of the plans, specifications and estimates) have not occurred within three years after the approval of the final EIS, final EIS supplement, or the last major Administration approval or grant.” In this case, although Phase I has advanced since the release of the FEIS in 2008, Phase II planning had not advanced within the three years following release of the 2008 FEIS. In addition, the Phase IIa and IIb EAs and RODs are fulfilling the following commitment made in the 2010 ROD in Section 3.3.2 beginning on page 14 related to the environmental review of future phases: “The purpose of the environmental review is to determine, in coordination with all interested agencies and with an opportunity for public involvement, whether additional environmental study of a proposed future phase is needed prior to undertaking the future phase action. The environmental review will study the proposed action and the status of compliance with environmental laws that may be applicable to the proposed phase of action, including, but not limited to, Section 4(f), the National Historic Preservation Act, the Endangered Species Act, the Magnuson-Stevens Fishery Conservation and Management Act, the Coastal Area Management Act (CAMA), the National Wildlife Refuge System Improvement Act of 1997, and the Clean Water Act. FHWA and NCDOT also will complete the appropriate NEPA documentation for each future phase of action in accordance with 23 CFR 771.129-130. Environmental conditions and the timing of each phase will be the primary factors in determining what type of NEPA documentation (a re-evaluation, a supplement, or another relevant NEPA process) is the most appropriate.”

In the case of both the Phase IIa and the 2013 Phase IIb EAs, including this revised Phase IIb EA, the effects of the Phase IIa and IIb projects on the findings of the overall project assessed in full in the 2008 FEIS and 2010 EA are addressed in the Phase IIa and Phase IIb EA’s Sections 4.3.

As stated in Section 3.3.2 of the 2010 ROD: “The Parallel Bridge Corridor with NC 12 Transportation Management Plan Alternative (Selected) does not specify a particular action at this time on Hatteras Island beyond the limits of Phase I because of the inherent uncertainty in predicting future conditions within the dynamic coastal barrier island environment. Instead, the alternative addresses the study and selection of future actions on Hatteras Island beyond the limits of Phase I through a comprehensive NC 12 Transportation Management Plan. The Transportation Management Plan will guide the implementation of future phases of the project through 2060.” NCDOT and FHWA are following the procedures laid out in the 2010 ROD and the Transportation Management Plan.

3. **Comment:** NEPA requires that all components of the Project be evaluated together before construction commences, not piecemealed into separate environmental documents that fail to account for the combined impacts of the Project. 40 C.F.R. § 1502.4(a); *Md Conservation Council v. Gilchrist*, 808 F.2d 1039, 1042 (4th Cir. 1986) ("compliance with NEPA is required before any portion of the road is built"); *W. N. C. Alliance v. NCDOT*, 312 F. Supp. 2d 765, 773 (E.D.N.C. 2003) (NEPA evaluation must be complete "before acting"). In this case, NCDOT and FHWA claim that the previous evaluation in the Final Environmental Impact Statement ("FEIS") of some, but not all, of the available options exempts them from the plain-language requirements of NEPA. But the changed conditions in the Refuge vividly illustrate that NCDOT and FHWA cannot rely on the 2008 FEIS, which was not only inadequate when it was issued over five years ago, but also now is significantly outdated in its analysis of the cost and funding of the available alternatives. The FEIS's estimates of the environmental consequences of the alternatives, and of the pace and timing for the "later phases," are likewise outdated.

In *Western N.C. Alliance*, the court rejected NCDOT's contention that it was not required to consider "the cumulative impacts from the other connected projects because they were not fully funded or planned." 312 F. Supp. 2d at 773. Applying that holding to the present case, whether the various "phases" of the Project are categorized properly as a single project, or as related actions with cumulative impacts, their full impacts still must be evaluated together. Because NCDOT and FHWA have failed to do so, as well as for the reasons given below, a supplemental EIS is required.

Response: See the response to comment #2 above. The assessment of impacts, cost, and funding have been updated in this revised Phase IIb EA. As indicated in the response to the previous comment, in the case of both the Phase IIa and Phase IIb EAs, the effects of the Phase IIa and Phase IIb projects on the findings of the overall project assessed in full in the 2008 FEIS are addressed in their Sections 4.3 (beginning on pages 4-25 and 4-43, respectively). These effects also are addressed in Section 4.3 of this revised Phase IIb EA.

4. **Comment:** An SEIS is required when significant new information or circumstances will affect the impacts of a NEPA project or the selection of an alternative. 40 C.F.R. § 1502.9(c); 23 C.F.R. § 771.130. Here, both new circumstances and new information, as well as significant impacts not adequately disclosed in the FEIS, mandate the preparation of an SEIS.

Response: The 2013 Phase IIb EA and this revised Phase IIb EA provide documentation of compliance with NEPA in accordance with the Selected Alternative in the 2010 ROD, the PBC/TMP Alternative. The 2013 Phase IIb EA and this revised Phase IIb EA identify new circumstances and new information

considered relevant to the selection of the Phase IIb Preferred Alternative. If FHWA determines that the new information and circumstances do not result in significant environmental impacts not previously evaluated, preparation of a Supplemental FEIS (SFEIS) will not be necessary, consistent with 23 CFR 771.130.

5. **Comment:** The EA fails to address significant impacts on recreation and wildlife habitat resulting from the fact that the proposed "Bridge Within Existing NC 12 Easement Alternative" would soon be located in the Atlantic Ocean.

Response: See the responses to the detailed comments on these issues presented below.

6. **Comment:** The EA fails to evaluate or disclose the most significant economic impacts of the proposed in-easement bridge. NCDOT and FHWA admit in the EA that this alternative, which the agencies state that they prefer, will "eliminate" surfing at the world-renowned "S-Turns" surf break. EA at p. 4-22. For the same reasons, it will eliminate all water-based recreation in this area and greatly harm any beach-going along its 2.5-mile length. Yet neither the EA nor the 2008 FEIS it purports to supplement contains any economic analysis of these major impacts to recreation and the tourist economy of Hatteras Island. Instead, they refer only to the loss of paved roadway access to the Refuge, which is a separate and distinct economic impact. Not only will the beach be more difficult to reach once the "Phase IIb" bridge is built, but even those people who manage to reach it on foot will not be able to surf, swim, or otherwise recreate safely around the bridge's pilings.

In purporting to consider the loss of recreation caused by the ocean bridges, the EA and FEIS mistakenly assume that if a given activity could take place anywhere else on the Outer Banks, there will be no economic impact. This is wrong for several reasons. First, the EA itself (at pp. 4-22 to 4-23) recognizes that economic impact on Dare County is the most relevant issue. If visitors are driven away from Dare County's beaches to the beaches of other counties and other islands by massive bridge pilings and decking over the beaches and in the ocean, plainly there will be an economic impact on Dare County. Moreover, the local economic impact to Rodanthe and the other communities of northern Hatteras Island is an important factor in the analysis. NCDOT and FHWA's preferred plan appears likely to have a significant adverse impact on these communities' local economies, yet the agencies do not even consider this possibility.

The assumption that surfers could simply move elsewhere on the Outer Banks is also wrong because it ignores the unique features that draw surfers and other visitors to the Pea Island National Wildlife Refuge.

The S-Curves "hot spot" is known to surfers as the "S-Turns," and it is recognized nationally and worldwide as a prime surfing location on the East Coast. On an

international "Surf Spot Atlas Made By Surfers For Surfers," the entry for the S-Turns surf break area describes unique surfing features and natural beauty that make this area extremely popular: "the [O]uter [B]anks are the best surfing area on the [E]ast [C]oast and *this is the best spot on the [O]uter [B]anks. tuberides. natual [sic], pretty environment. probably the most powerful wave around . . . extremely crowded in warm months* " Will Whidbee, "S-Turns," WannaSurf.com, http://www.wannasurf.com/spot/North America/USA/South _ East/North _ Carolina/s_turns/ (emphasis added). Numerous other websites and publications similarly attest to the uniquely high quality of the S-Turns surf break and its popularity as a surfing destination. NCDOT and FHWA state in the EA that they prefer the in-easement bridge alternative and that it will soon "eliminate" surfing at the S-Turns. According to the EA, the proposed bridge's pilings in the ocean and the surf zone would not only pose the obvious collision hazard for surfers; they would also change the wave breaks, rendering the area actually unfit for surfing by destroying the features that draw so many surfers and other visitors to this area. Yet although the FEIS acknowledged an impact on surfing, it did not make any attempt to calculate the impact on the economy of Rodanthe and Hatteras Island generally if this key tourist attraction were to be eliminated.

Response: *The commenter's position that the 2013 Phase IIb EA refers only to the loss of paved roadway access to the Refuge in the discussion of economic impacts in Section 4.2.4.2 is inaccurate. Research on Refuge and beach use completed for the 2008 FEIS's assessment of the economic impact of the loss of beach access on Dare County was considered in Section 4.2.4.2 of the 2013 Phase IIb EA and this revised Phase IIb EA. It was applied for Phase IIb in a manner that addressed the potential impact of the combination of the loss of beach access and beach resources.*

The conclusion of the economic impacts assessment in the 2008 FEIS was that with the exception of a few specific resources unique to the Pea Island National Wildlife Refuge (fishing from Oregon Inlet, birding at the managed impoundments, and visiting the visitor center) other recreation opportunities found on the Refuge could be found elsewhere in Dare County. None of the three unique activities involve beach use, including surfing. In addition, the economic impacts assessment in the 2008 FEIS concluded that if paved road access was eliminated completely within the Refuge with the Pamlico Sound Bridge Alternative, approximately 9 percent of Refuge visitors both did not have alternative locations to engage in their activity and would not visit the refuge without paved road access. The assessment further concluded that the total loss of employment and taxes in the Outer Banks/Dare County area would be: 2 percent of the private sector employment, 2.5 percent of Dare County occupancy tax receipts, and 0.03 percent of state sales taxes. Therefore, a bridge in the existing easement would not have a notable adverse impact on the Dare County economy.

The community impacts in Rodanthe and recreation impacts of the Bridge within Existing NC 12 Easement Alternative were a factor in the ultimate selection of the 2014B Bridge on New Location Alternative as the Preferred Alternative.

7. **Comment:** Because the "human environment" that is the subject of NEPA includes "the relationship of people with that environment," the applicable regulations require that NCDOT and FHWA analyze socioeconomic impacts where they are interrelated with natural or physical environmental effects. 40 C.F.R. § 1508.14. Here, the sweeping statement that "[t]here are other locations ... where one can surf" (EA at 4-23) completely ignores the unique economic and recreational significance of the S-Turns area and improperly avoids disclosing to the public the potentially major economic harm that will result from the agencies' preferred alternative of constructing bridges in the ocean. And while the FEIS acknowledged that surfing would be eliminated, it failed to adequately analyze other unique economic and recreational harms that would result. In addition, the FEIS failed to disclose or evaluate the effect that the proposed bridge would have on all the other significant recreational activities in this area: swimming, beachcombing, sunbathing, fishing, birding, kite-boarding, ocean kayaking, etc. The FEIS states only that some of these activities "would be affected" when this bridge is in the surf and in the ocean, FEIS at 4-48, but it does not acknowledge that the effects of bridge pilings would, in practical terms, eliminate not just surfing, but swimming and many of the other activities listed above as well. It is beyond question that visitors would avoid the miles of beach underneath a highway and dominated by its massive pilings, shade, and traffic noise. The pilings would create a safety hazard for any recreational activities in the surf and ocean. And according to the FEIS, they are likely to cause rip currents that would pose a new safety hazard and further impede recreational activities in these areas. FEIS 4-61.

While the FEIS notes some, but not all, of these impacts, it fails to quantify their economic impact. So does the current EA. Again, the agencies' purported economic analysis is fundamentally flawed because it asks only whether beachgoers could go elsewhere on the Outer Banks and concludes there is no economic impact if they could. But the cumulative effect of the two "Phase II" in-easement bridges - eliminating recreation and seriously degrading five or six miles of prime Refuge and National Seashore beach, including the extremely popular and unique S-Turns surfing area - will cause an unknown amount of socioeconomic harm to Dare County and the local communities around Rodanthe. Accordingly, NCDOT and FHWA must evaluate all these impacts and disclose them to the public in an SEIS.

***Response:** See the response to the commenter's comment 6 above. The community impacts in Rodanthe and recreation impacts of the Bridge within Existing NC 12 Easement Alternative were a factor in the ultimate selection of the 2014B Bridge on New Location Alternative as the Preferred Alternative. A new alternatives analysis*

is being conducted in the Phase IIa project area. The observations made by the commenter will be revisited in impact assessments associated with future phases.

8. **Comment:** The agencies' preferred alternative will also cause other socioeconomic impacts that have not been evaluated as contemplated by 40 C.F.R. § 1508.14. The proposed in-easement bridge will seriously harm the property values and rental income of the houses in the Project area. The impact on views, the destruction of local beaches, and the reduced vehicle access in Mirlo are acknowledged in the EA, but their socioeconomic impacts are not evaluated. This is a serious omission because all these factors are likely to harm tourism, property values, and rental income in this area. Many of those socioeconomic concerns were raised at NCDOT's January 8, 2014 public meeting in Buxton, North Carolina, and they must be evaluated in an SEIS.

Moreover, the FEIS acknowledged that the presence of bridge pilings in the surf and ocean could create "focused erosional hot spots" that "accelerate the development of a breach," but neither the FEIS nor the EA analyzes the impact to private property that would result in the area from the agencies' preferred alternative. See FEIS 4-67 to 68. Due to scouring effects when the proposed in-easement bridge is subject to storm surge (while on land) and even more so when it is later located in the ocean, this alternative could increase erosion and cause a breach that would damage ocean-side and sound-side property alike and cut off access for residents. In short, the alternative preferred by NCDOT and FHWA would be a tremendous liability for local property owners, yet the "Phase IIb" EA ignores these socioeconomic impacts entirely. If the agencies insist on pursuing such a short-sighted and destructive alternative, they must at a minimum disclose to the public and elected officials what the effects of their plan will be on the local community and its tourism economy.

***Response:** The community impacts in Rodanthe and recreation impacts of the Bridge within Existing NC 12 Easement Alternative were a factor in the ultimate selection of the 2014B Bridge on New Location Alternative as the Preferred Alternative.*

9. **Comment:** An SEIS is required to evaluate significant impacts to wildlife habitat in the Pea Island National Wildlife Refuge that were not evaluated in the EA or previous NEPA documents, including the FEIS. In addition, the number of acres of CAMA wetlands that will be impacted by "Phase IIb" has increased by a significant 23.95 acres, between the 2008 FEIS and an updated analysis conducted in 2012. See EA 4-8 to 4-10.

The proposed 2.5-mile in-easement bridge would soon be located on the beach, in the surf, and in the open ocean. Both the EA and FEIS acknowledge that this situation will cause scour, could create increased erosion, would interfere with sediment movement along the shore, and would affect the formation of breaches and

inlets. All of these impacts would degrade the beach as nesting habitat for threatened piping plovers and other shorebirds, and for endangered and threatened species of sea turtles. Yet the EA makes no attempt to quantify or disclose to the public the extent of these impacts. Table 8 (EA at p. 5-16) purports to compare "Key Impacts of the Phase IIb Alternatives," yet omits all of the impacts just described. This table also omits any analysis of the noise effects on wildlife nesting from a state highway running 15 to 25 feet directly over the beach within a few years. Similarly, the analysis of "Impacts to Biotic Communities" listed in Table 4 (EA at p. 4-26) omits all the effects of the proposed bridge and its pilings soon being located on the beach, in the surf, and in the ocean.

***Response:** The 23.95 acres of CAMA wetlands are presented on page 4-10 of the 2013 Phase IIb EA. This information is a part of Section 4.1, "Affected Environment." The text reports that the presence of CAMA wetlands in the project area has increased to 23.95 acres, not that the footprint of the project has increased by 23.95 acres. The change in impact is discussed in Section 4.2 ("Updated Impacts of the Phase IIb Detailed Study Alternatives"). On pages 4-28 to 4-29 under Section 4.2.5.3, the document reports that with the Bridge within Existing NC 12 Easement Alternative no impacts to CAMA wetlands would occur and that with the Bridge on New Location Alternative the permanent CAMA wetland impact would be 0.01 to 0.03 acre and there would be no temporary impact.*

The beach that would be affected by the Bridge within Existing NC 12 Easement Alternative is foraging and not preferred nesting habitat for the piping plover. Monthly bird surveys have been conducted by NCDOT biologists from January 2013 to July 2015. As of the date of this revised Phase IIb EA, no nests of piping plover have been recorded in the Phase IIb area. The formation of breaches or inlets creates piping plover preferred nesting habitat. The most notable impact of the bridge to nesting sea turtles and shorebirds would be when a bridge is over the beach. This is addressed in the 2008 FEIS. Table 4-23 of the 2008 FEIS, which addresses potential beach impacts for the full Phased Approach Alternative from 2010 to 2060 indicates that the total area of beach shaded by this alternative would range from 14.78 to 16.78 acres over a total length ranging from 2.43 to 3.26 miles.

As a part of the development of the 2008 Biological Assessment (BA) it was found, based on a communication with an expert in the field, that traffic noise did not deter plovers from foraging under the existing Bonner Bridge and traffic noise from the new bridges also would have no negative effect on foraging. Pages 39 to 41 of the 2008 BA describe impacts to sea turtles of a bridge on the beach, in the intertidal zone, and in the subtidal zone, including impacts from shading, pile presence, scour, sediment disturbance, and the opening of an inlet.

Impacts of a bridge on the beach or in the ocean also are addressed in the USFWS' Biological Opinion (July 2008) for the Bonner Bridge Replacement Project (B-2500). Regarding nesting sea turtles and piles on the beach and in the ocean, the Biological Opinion says on page 37: "Elevating most of NC 12 onto bridges would allow the natural barrier island processes to widen the beach area available for nesting; however, as portions of the beach migrate westward underneath the bridge, some of the beach may not be suitable nesting habitat for some period of time as it would be underneath the bridge and subject to shading effects (thus affecting hatching and sex ratios). Eventually, portions of the beach would migrate westward beyond the bridge and potentially provide suitable nesting habitat. Turtles would have to crawl or swim between bridge piles in order to utilize the newly widened beach. The effect that the bridge piles would have on emerging sea turtles is expected to be minimal." Additional detail on these impacts is presented on pages 41 to 42 of the Biological Opinion. Regarding the effect on piping plover foraging the Biological Opinion says on page 40: "Foraging under or adjacent to bridges is not expected to preclude foraging since plovers currently forage adjacent to the existing Bonner Bridge." Noise also is addressed in the Biological Opinion, but the concern raised is heavy equipment noise associated with construction of Phase I and other locations where construction activity is close to the beach, as well as the use of heavy equipment for NC 12 maintenance activities near the beach. These findings were taken into consideration by USFWS when reaching their non-jeopardy opinions, developing their incidental take statements, and identifying conservation measures. The principal concern expressed in the Biological Opinion was the effect of construction lights and traffic lights on turtle hatchlings. NCDOT agreed to the conservation measures recommended by USFWS to address this concern as noted in Table 8.

10. **Comment:** Scour is a particularly significant concern. A 1997 study prepared for NCDOT by its consultant calculated that for a 100-year storm surge, overland bridge pilings in the Refuge would produce severe scour impacts, resulting in scour over 40 feet below the mudline. NCDOT/Parsons Brinckerhoff, Hydraulic and Scour Analyses (Jan. 1997) (attached as Attachment 2). A 2012 Hydraulic Report reached similar conclusions according to the response to comments in the "Phase IIa" ROD. In their response to comments on this topic, NCDOT and FHWA note that the area within 100 feet of the shoreline of the Refuge is generally a "VE zone," which is an area "likely to see high velocities" – and thus significant scouring – "during a 100-year storm surge." A VE zone is subject not only to flooding from storm surge, but also to "additional hazards due to storm-induced velocity wave action" including severe scour. FEMA classifies these VE zones as "Coastal High Hazard Areas." In response to comments in the "Phase IIa" ROD, NCDOT and FHWA try to dismiss concerns about scour in these areas by noting that only some of the proposed bridging will be located in these zones at the time it is constructed ("Phase IIa" ROD at C-60 (three sections totaling 1.1 miles at the 'S' curves and northern Rodanthe are already in VE zone)). However, it appears that all of the proposed bridging will

soon be located in these VE zones of high scour along the shoreline. Yet NCDOT and FHWA persist in refusing to evaluate and disclose the scour impacts to Refuge habitat and private property and the potentially significant environmental damage that will result.

Moreover, the "Phase IIb" EA does not even acknowledge the problem of locating the proposed bridge partially at first, and soon completely, within these FEMA-designated VE zones of high-velocity storm surge and severe scouring.

Response: Chapter 4.6.8.5 of the 2008 FEIS discusses the potential impact from scour around the bridge piles in the swash zone (within the foreshore), the backshore and the upland zones that would likely occur during a storm event. The impact, if it occurs is described as scour holes around the piles and potential scour between piles resulting from possible channeling of the flow. During non-storm periods, these piles are on dry land and no scour impact will occur.

In the response to the comments on the Phase IIa ROD, additional discussion was provided to describe why scour is expected to occur during storm events. In the response, the existing flood insurance rate maps were used to determine if the piles would be subjected to the 100 year storm surge and if so, if the piles were in the mapped velocity (VE) zones. This confirmed the potential impact of scour during storm events.

VE zones are locations in which higher velocities and likely scour and erosion occur during the storm even without bridge pilings. Post-storm observations indicate that sand loss (erosion or scour) in one area and sand deposition in another is a common outcome of severe storms. Vegetation is likely removed as dunes erode and vegetation may be covered if washover fans develop. Habitat may change as a function of these naturally occurring storm effects.

The environmental documents for the proposed project have recognized that scour, erosion, and sand deposition may occur when a barrier island is subjected to storm surge and high velocity waves. The documentation has also recognized that the presence of bridge piles may affect these normal patterns. The pattern change could involve scour holes developing around the piles and the possible channeling of flow between the piles when the piles are subjected to storm surge, while otherwise landward of the mean high water line and generally on dry beach or inland. The presence of buildings, above ground utilities, and other structures also act to channel flow during storm events and affect scour, erosion, and sand deposition patterns.

The commenter also referenced the 1997 study and the potential for scour over 40 feet deep in their comments on the Phase IIa EA. That comment was answered in the response to comment 16 in the Phase IIa ROD. In its Phase IIa EA comments, the commenter did not reference a specific report and the response given assumed the

reference was to a 2012 bridge hydraulics report for the replacement Oregon Inlet Bridge (TIP B-2500, NC 12 Replacement of the Herbert C. Bonner Bridge Across Oregon Inlet from Bodie Island to Hatteras Island, Dare County, NC Bridge Hydraulic Report.) This is the latest scour study for the Oregon Inlet Bridge project and the results were used to determine the pile lengths for the replacement bridge. As indicated in the response on the Phase IIa ROD: “The 40 feet of scour identified in the report for bents 7 through 11 (see Table 5.3, OEI, 2012) is an indication of possible Oregon Inlet channel realignment and contraction scour. This scour is not storm induced, is associated with water movement through Oregon Inlet, and is not relevant storm-induced scour with the Bridge within Existing Easement Alternative for either the Phase IIa or IIb.”

The commenter in their current comments attached a January 1997 Replacement of the Herbert C. Bonner Bridge Hydraulic and Scour Analyses: Analysis of Flume Modeling Experiments and Scour Estimates for Replacement Bridge Piers. The purpose of the study also was to develop estimates of scour depth for the proposed foundations of the replacement bridge through laboratory experiments in a flume. Like the 2012 study, the work was used to help decide how long bridge piers should be on a replacement bridge over Oregon Inlet. It estimated scour depths at five pier locations. Three were in the inlet and two were overland. The commenter references Table 4 from that report, which indicates that the maximum scour from both a 100-year and 500-year return period storm is 40.6 feet overland at the south end of a replacement Oregon Inlet bridge. This report was updated in July 1997 after further investigation and consideration based on comments received from FHWA Engineering Service in Atlanta. The final report is dated July 1997. In that report, scour around Bonner Bridge pilings is analyzed with respect to the processes that can cause scour around structures (including bridge pilings or pier bents) and the location of the bridge pilings (pier bents). There are three components of scour that are considered: 1) long-term trends, 2) contraction scour and 3) local or pier scour. The pilings (pier bents) are either in the channel or overland (that is on dry land in the absence of storm surge). The report concludes that the overland pier bents north and south of Oregon Inlet are not subjected to either the long term trends impacting channel location or to contraction scour that is caused by channel width constriction at the bridge crossing. The overland pier bents were determined to be subjected to flow velocities during storm conditions that would be great enough to cause local scour. The velocities were modeled using the FHWA two dimensional surface water modeling system FESWMS-2DH and the scour was computed using the CSU (Colorado State University) equation. Scour is determined as a function of the depth of flow, the flow velocities, the angle of flow relative to the pier bents, soil characteristics and the pier bent geometries. The maximum projected scour for the overland piers ranged from 22.4 feet (south of Oregon Inlet) to 38.2 feet (north of Oregon Inlet) with a 500-year storm.

Similar to the July 1997 report, three components of scour were considered in the 2012 report referenced above, 1) long-term channel elevation changes, 2) contraction scour and 3) local or pier scour (structure-induced). Current modeling techniques were used to determine flow velocities and direction (ADCIRC & SWAN) and the local pier scour (Florida DOT methodology).

The velocities and resulting scour estimates presented in the 1997 and 2012 reports are for an existing inlet and inlet shorelines. This system is hydraulically different from the Phase IIb project area, which is currently completely overland (with no existing inlet) in the absence of storm events. Approximately 1 mile of the Phase IIb Bridge within Existing NC 12 Easement Alternative is mapped by FEMA to be in the VE zone during the 100 year storm. This would suggest that in these locations, there is the potential for local scour to occur around the pier bents (or as indicated above, any hard structure) during storm events. However, long-term channel elevation change and contraction scour are not expected in the absence of an inlet channel. It is also consistent to assume that more of the project area will be in the VE zone with time and long-term erosion. While the potential for local scour impact is acknowledged, the analysis of the magnitude of the depth of scour depends on site specific parameters discussed above (e.g., depth of flow, magnitude and direction of flow velocity, soil characteristics and piling (pier bents) geometry). Modeling studies can be used to determine the site specific magnitude and direction of the flow and the flow depth during storms. Given this information the depth of scour can be estimated. Pier scour modeling studies would be conducted as a part of future impact assessments of a Bridge within Existing NC 12 Easement Alternative.

11. **Comment:** NCDOT and FHWA's preferred in-easement bridge will, according to the EA, soon be located in the surf and in the ocean. This short-sighted plan will create potentially significant safety hazards and as-yet-unevaluated impacts – and costs to the public – from the construction and repair work that will be required to try to maintain the bridge.

Beyond the obvious public safety concerns associated with constructing a bridge that will soon be left in the open ocean as the island erodes, NCDOT and FHWA's preferred "Phase IIb" bridge in Mirlo raises additional safety concerns. An ocean-side house could be driven into the bridge pilings during a severe storm, but the EA does not consider this possibility. And as discussed above, scour and "focused erosional hot spots" caused by the bridge may cut off or damage sound-side properties.

Response: *Regarding long-term maintenance of the Phase IIb Bridge within Existing NC 12 Easement Alternative, the commenter is referred to the response to the commenter's scoping comment 7 related to "Maintenance of Bridge in the Surf Zone" on page C-38 of the Phase IIa EA where it says: "... the permanent, on-going*

maintenance referred to by the commenter would not be necessary for bridge piles in the high-energy surf zone because the Phase IIa Preferred Alternative's bridge will be designed to account for the potential future conditions that the bridge will be exposed to." Further, this response states, "Bridge maintenance activities for a bridge in the existing NC 12 easement would primarily involve an inspection of every component of the bridge at two-year intervals (as required by federal law), as well as the following: correction of any potential problems while they are still minor, pressure washing with water in the bridge bearing area where the girders rest on the pile cap, re-sealing the deck every five years to minimize salt intrusion, and sweeping the deck and collecting dirt and debris four times a year. The bridge inspection activities for much of the bridge will be from a platform lowered from the deck. Some inspection activities will be from a boat. Debris from any maintenance activities (minor or major) would be captured and transported off site. This was done during recent Bonner Bridge rehabilitation work." The design characteristics and maintenance activities described in that response would be the same with Phase IIb's Bridge within Existing NC 12 Easement Alternative.

Just as the Phase I bridge at Oregon Inlet is designed to withstand the impact of a hopper dredge, which demolished a section of the Bonner Bridge in late 1990, the Bridge within the Existing NC 12 Easement Alternative (both its foundations and bridge spans) will be designed to withstand vessel and other impacts.

The commenter is mistaken in the statement that "focused erosional hot spots" caused by the bridge may cut off or damage sound-side properties. Focused erosional hot spots can be visualized as the beach taking on the shape of a series of cusps (in contrast to a relatively straight line) in relationship to the offshore bridge pilings. Cusps are a natural feature on a wave dominated beaches such as the Outer Banks and are typically around 80 to 100 feet in the alongshore direction and 30 to 40 feet in the cross shore direction (though both smaller and larger cusps have been identified on natural beaches). The photograph below shows this occurring near the Refuge ponds.



Pile-caused focused erosion hotspots on the shore described in 2008 FEIS Section 4.6.8.4 would be expected to occur when the bridge piles are far enough offshore to impact the directionality of the waves (e.g., refraction or diffraction). This would occur when the piles are seaward of the offshore bar. The distance to the offshore bar varies based on the offshore profile, but 1,000 feet to 1,500 feet is typical along Hatteras Island in the project area. Using the location of NC 12 in Rodanthe and the forecast 2060 high erosion shoreline in Rodanthe (shown in Figure D-1a in Appendix F), the bridge pilings only would be no more than approximately 600 feet offshore in 2060 and not seaward of the offshore bar.

12. **Comment:** NCDOT and FHWA also continue to refuse to incorporate accelerated sea-level rise into their shoreline forecasts for the NC-12 Transportation Management Plan. They now claim there will be less erosion than they forecast previously, though they provide only a line on a map, with no supporting information, in Appendix D. In response to this revised shoreline projection, they have modified the design of the preferred bridge alternative to make it even more vulnerable to erosion. EA at 2-9 to 2-10.

The new design, like the old one, does not meet the project goal of placing the ends of the bridge 230 feet soundward of the forecast 2060 high-erosion shoreline. Compare FEIS at 2-124 with EA at 2-11. It should be rejected for that reason alone. But in addition, the revised shoreline forecast is highly unlikely to be accurate because it is based on linear projections using past erosion rates, rather than incorporating well-documented, scientifically-accepted calculations of accelerated sea-level rise into the forecast. NCDOT and FHWA have never explained why they refuse to incorporate accelerated sea-level rise into their shoreline forecasts for the Project. Their response to a comment on this topic in the "Phase IIa" ROD (at C-52) is highly misleading because it implies that Section 4.6.6 of the FEIS somehow incorporates "the impact of accelerated sea level rise." In fact, the FEIS dismisses the most conservative forecast of sea-level rise recommended for planning purposes by the N.C. Coastal Resources Commission (1.01 meter by 2100) as a "worst-case imagined scenario," and excludes that projection from the FEIS forecasts. Moreover, NCDOT and FHWA admit that they continue to use only linear projections. "Phase IIa" EA at 4-8. An SEIS is therefore required to make an accurate analysis of the shoreline locations in the project area that includes accurate sea-level-rise projections and the impacts to the proposed bridges and to the natural and human environment.

***Response:** Accelerated sea-level rise is taken into account in the shoreline forecasts past and present for the NC 12 Transportation Management Plan. As indicated in the response to the commenter's comment 12 presented in the Phase IIa ROD: Various potential accelerated sea level rise scenarios are described in Section 3.6.3.3 of the 2008 FEIS (beginning on page 3-58). The impact of accelerated sea level rise on Parallel Bridge Corridor alternatives is addressed in Section 4.6.6 (beginning on*

page 4-54) of the 2008 FEIS. These findings apply to the 2060 shoreline forecasts included in the 2013 Phase IIb EA and this revised Phase IIb EA. Supporting information for the shoreline forecasts in the 2013 Phase IIb EA is a part of the Administrative Record in the following report:

Overton, M. F. 2013. Coastal Monitoring Program: NC12 Transportation Management Plan, TIP Project B-2500, 2012 Update Report, pp. 166.

A similar report is under preparation for the 2014 shoreline forecasts included in this revised Phase IIb EA in Appendix D.

The 2008 methodology for incorporating accelerated sea level rise into the forecast of future shoreline position was informed by the outcomes of a workshop of coastal scientists as documented by Gutierrez, B.T., Williams, S.J., and Thielert, E.R., 2007, Potential for shoreline changes resulting from sea-level rise along the US Mid-Atlantic region are found in U.S. Geological Survey Open-File Report 2007-1278. Web only, available at <http://woodshole.er.usgs.gov/pubs/of2007-1278/images/report.pdf>. The potential for shoreline change because of sea-level rise was assessed based on knowledge of the geomorphic compartments along the mid-Atlantic coast, the coastal science literature and the experience of the workshop members.

When assessing the effect of sea level rise on the barrier islands, threshold behavior is the important consideration, as discussed in Section 3.6.3.3 of the FEIS. Threshold behavior includes a) rapid landward recession of the ocean shoreline, b) decrease in barrier island width and height, c) increased overwash during storms, d) increased barrier island breaching and inlet formation, and e) chronic loss of beach and dune sand volume. The assessment of sea level rise in the project area found that "threshold behavior" could be marginal with the 20th century rate of sea-level rise but with a 2 millimeter per year increase in the rate of sea level rise it is "about as likely as not" that a geomorphic threshold would be reached and with 7 millimeter per year increase in rate it is "as likely as not". These scenarios were based on the Intergovernmental Panel on Climate Change's (IPCC) 2007 Climate Change report (<http://ipcc.ch/report/ar4/wg3/>).

Understanding that these two conditions (the 2 and 7 millimeter per year increases) might exist given the potential for accelerated sea level rise, an assessment was made to determine the potential for and location of inlets that could occur in the project area. A workshop was held at which a group of coastal scientists and engineers developed consensus on the location of potential inlets within the project area in order to capture the phenomena of increased breaching and inlet formation or 'disintegration of the barrier'. These locations were illustrated in Figure 1 of the 2013 Phase IIb EA and in this revised Phase IIb EA. Then, historic shoreline position data was used to determine the long-term erosion rate (50-year rate) and to project potential position of the shoreline in 2060. A 95 percent prediction interval (i.e., a

range of shoreline locations for which there is a 95 percent chance that the future shoreline will actually lay within these bounds) also was calculated to visualize a band of possible shoreline locations that might occur. After these tasks were complete, a coastal monitoring program was recommended and subsequently implemented as a part of the PBC/TMP Alternative selected for implementation in the 2010 ROD for the Bonner Bridge Replacement Project (B-2500) to measure and document annually changes in shoreline position, barrier island width and height, overwash as a function of storm events, and loss of beach and dune sand volume. From these additional data, the shoreline projections (including prediction band) are updated annually. By continually incorporating new data into the predictive dataset, shoreline predictions are updated as a function of the conditions occurring during the period of the new studies.

This framework for predicting future shoreline position takes into account the probable impact of accelerating sea level rise on shoreline change consistent with the observations of the IPCC's 2007 report. The approach combines quantitative assessment of shoreline change, including uncertainty, with expert knowledge of coastal systems of the Outer Banks as represented by the coastal scientists and engineers at the inlet processes workshop. The on-going monitoring program is established and conditions are continuously monitored and updates are made based on new data and insights.

Since 2007, there have been additional studies intending to refine sea-level rise estimates that include potential acceleration for local planning and policy development. In 2010, the NC Coastal Resources Commission considered using 1 meter rise by 2100 as a planning number for coastal North Carolina. A 1 meter rise is consistent with the +7 millimeters per year scenario using the recommended procedures as reported in Gutierrez et.al. 2007. Gutierrez's recommendation was to take the 20th century rate as observed by the local tide gage stations and add 7 millimeters per year to estimate the sea-level rise including acceleration. The rate at Duck, NC is reported to be 4.59 +/- 0.94 mm/yr http://tidesandcurrents.noaa.gov/sltrends/sltrends_station.shtml?stnid=8651370. Using the upper bound (4.59 + 0.94 millimeters per year) plus 7 millimeters per year, sea level is estimated to rise 1.08 meters by 2100. Note that this is more than double the rise during the same period of time using the upper bound of the current rate. By considering that the barrier island would "as likely as not" show symptoms of threshold behavior under the +7 millimeters per year scenario, a 1 meter rise because of the possibility of accelerated sea-level rise is taken into account in the annual shoreline analysis being conducted for the Bonner Bridge Replacement Project (B-2500) project area. In March 2015, the NC Coastal Resources Commission Science Panel released the draft 2015 Update to the 2010 Report and 2012 Addendum, North Carolina Sea Level Rise Assessment Report. At its February 9 to 10, 2016 meeting, the NC Coastal Resources Commission accepted the report as final.

Local NOAA tide gage data and vertical land movement estimates along with global sea level rise estimates from the 2013 Intergovernmental Panel on Climate Change Report were the basis for concluding that the possible range of sea level rise by 2045 in the Oregon Inlet area would be from a low of 2.7 inches (68.58 millimeters) or an average of 2.8 millimeters per year over the next 30 years to a high of 9.9 inches (251.46 millimeters) or an average of 8.4 millimeters per year over the next 30 years. The 30-year planning horizon (from 2015 to 2045) was at the request of the NC Coastal Resources Commission.

NCDOT and FHWA disagree that the revised design makes the Bridge within Existing NC 12 Easement Alternative more vulnerable to erosion. As stated in Section 2.4.3 of the 2013 Phase IIb EA beginning at the end of page 2-9: "Under the 2010 design, the main bridge ended approximately 250 feet seaward of the forecast 2060 high erosion shoreline (between the forecast 2040 and 2050 high erosion shorelines)." The shoreline referenced in this quote is the one presented in the 2008 FEIS. As stated on page 2-11 of the 2013 Phase IIb EA: "In Rodanthe, the revised main bridge ends approximately 140 feet west of the 2060 high erosion shoreline forecast using data through 2012. Based on the 2060 high-erosion forecast using data up to 2014, the same section in this revised Phase IIb EA says: "In Rodanthe, the revised main bridge ends approximately 200 feet west of the 2060 high erosion shoreline forecast using data through 2014." The approach bridge and fill then extend from the end of the main bridge. The revised design also does not meet the original goal of placing the end of the main bridge 230 feet soundward of the forecast 2060 high-erosion shoreline, but it offers a reasonable balance for this alternative between that goal and the objective of minimizing impacts to the Chicamacomico Life Saving Station and the Rodanthe Historic District. The northern end of this alternative is more than 230 feet soundward of the forecast 2060 high erosion shoreline." Considering the changed shoreline forecast, NCDOT was able to:

- Continue to minimize impacts to historic resources*
- Reduce community impacts from those documented in the 2010 ROD*
- Develop a design that comes closer to achieving NCDOT's goal of ending the main bridge 230 westward of the 2060 high erosion shoreline*

NCDOT recognizes that the ability to achieve the goal of placing NC 12 more than 230 feet west of the high erosion shoreline is an advantage of the Bridge on New Location Alternative (all three alternatives), and this was taken into consideration in selecting the 2014B Bridge on New Location Alternative as the Preferred Alternative.

- 13. Comment:** Under any of these shoreline scenarios, the impacts of attempting to maintain the "Phase II" ocean bridges, after construction is complete, have not been

adequately disclosed or evaluated in the FEIS or other NEPA documents. In the FEIS, NCDOT and FHWA committed to confining all maintenance to the NC-12 easement. FEIS at 4-68. Now, however, they state in the 2010 ROD that this commitment to confine maintenance to the easement "does not exist with the NC-12 Transportation Management Plan." ROD at C-16. Thus, the perpetual, long-term maintenance impacts of the proposed bridge are certain to be significantly greater than those contemplated in the FEIS. Attempting to maintain bridges and pilings on the beach, in the surf, and in the ocean will require the use of Refuge land for access and staging that will significantly degrade wildlife habitat. An updated analysis of the maintenance impacts of the preferred ocean bridge must be included in an SEIS.

***Response:** As indicated in the response to the commenter's similar comment on the Phase IIa EA (commenter's comment 17 in the Phase IIa ROD), NCDOT and FHWA disagree with the commenter's position that "perpetual, long-term maintenance impacts of the proposed bridge are certain to be significantly greater than those contemplated in the FEIS." See the description of expected maintenance activities for the Bridge within Existing NC 12 Easement Alternative under the response to this commenter's comment 11. None of these activities would require use of Refuge land for access and staging. Access for maintenance activities for a Bridge within Existing NC 12 Easement Alternative would be from the bridge or the ocean. The 2014B Bridge on New Location Alternative is the preferred alternative for Phase IIb.*

14. **Comment:** Similarly, NCDOT and FHWA have not disclosed to the public adequate estimates of the long-term maintenance costs for the two "Phase II" bridges, in the EA or elsewhere, even though these costs are likely to be extremely high. Indeed, the two recent EAs contain no maintenance cost estimates. An accurate estimate of these costs depends upon a better understanding of the forces that will act on these ocean bridges and of the scour that their pilings will cause, and an SEIS is required to analyze those factors. Without such an analysis, a fair comparison between alternatives is not possible.

***Response:** Maintenance costs were included in the life-cycle cost analysis for the Phased Approach Alternative presented in the 2008 FEIS. This alternative assumes that all phases beyond Phase I are in the existing easement and have parts that ultimately end up off-shore in the Atlantic Ocean. Maintenance costs are not expected to vary notably between the Bridge on New Location Alternative and the Bridge within Existing NC 12 Easement Alternative because the alternatives are of a similar length and both projects would be designed to account for dynamic coastal processes. In the case of the Bridge within Existing NC 12 Easement Alternative in Rodanthe or in future phases, since ocean forces and scour would be accounted for in the bridge design, they would not become a maintenance issue. The observations*

made by the commenter will be revisited in impact assessments associated with future phases as appropriate.

15. **Comment:** NCDOT and FHWA's preferred alternative will have significant adverse impacts on the Refuge and the human environment, but the cumulative impacts of locating two of these "Phase II" bridges over the beach, surf, and ocean are even more significant. As mentioned above, the effect of destroying the beach environment (and removing access) over four, five, or six miles out of only 12 total miles of beach in the Refuge is likely to have a significant deterrent effect on tourism to Hatteras and to the Refuge. In addition, it will degrade a significant proportion of national wildlife refuge habitat and irreversibly destroy its fundamental character as a federally protected resource devoted to the conservation of migratory birds and other wildlife. The cumulative effect of a series of these ocean bridges would tip the balance and turn the Refuge into a perpetual construction zone and an area first and foremost devoted to and dominated by an elevated highway.

The EA states that indirect and cumulative impacts for "Phase IIb" are "unchanged" from the 2008 FEIS, which in turn stated that "indirect and cumulative impacts would be minimal." FEIS at 4-158. The FEIS also stated that "[t]he replacement bridge corridor alternatives would not alter area development trends," a claim that now appears dubious based on the agencies' preference for a highly intrusive and ill-conceived in-easement bridge at Rodanthe. In addition, the current EA states that building the "Phase IIb" bridge would not affect the construction of later phases of the agencies' Selected Alternative.

All these claims ignore the significant cumulative effects that NEPA requires the agencies to examine - in this case, the combined effects, over time, of creating a series of massive structures on the beach and in the ocean. The combined effects of these bridges and their pilings on the Refuge and on tourism must be evaluated and disclosed in an SEIS, as must their cumulative effects on erosion and longshore sediment transport. The FEIS's studies of piers running perpendicular to the shoreline cannot account for such impacts.

***Response:** The 2008 FEIS assessed the impacts of the Phased Approach, an alternative that assumed NC 12 would be replaced on a bridge from the Oregon Inlet area to Rodanthe, in the topical direct impact sections found in Chapter 4 (all sections except Section 4.12, which discussed indirect and cumulative impacts). The Phased Approach was included in the selected PBC/TMP Alternative as representing one option for project phases after Phase I, replacement of the Oregon Inlet bridge. The Bridge within Existing NC 12 Easement Alternative in both the Phase IIa project area and the Phase IIb project area were assessed in their respective EAs within that overall context. As stated in Section 1.1 of the 2013 Phase IIb EA and this revised Phase IIb EA, the purpose of the EA is to identify and assess changes in*

the setting, project, and impacts that may have occurred since the 2010 ROD for the PBC/TMP Alternative was issued on December 20, 2010. This includes direct, indirect, and cumulative impacts. The focus of the indirect and cumulative impacts section of the 2013 Phase IIb EA and this revised Phase IIb EA is on identifying and assess changes related to Phase IIb that might affect the findings of the indirect and cumulative impacts section (Section 4.12) of the 2008 FEIS and not the combined effects of project phases, which were already addressed in the direct impacts sections of the 2008 FEIS.

Regarding the effect of the project on development in Rodanthe, community impacts were one factor in the decision to select the 2014B Bridge on New Location Alternative as the LEDPA and identify it as the Preferred Alternative in this revised Phase IIb EA. The applicability to the impact assessment of scour observations at piers perpendicular to the shoreline was questioned in the commenter's comments on the Phase IIa EA (their comment 14 in Appendix C of the 2013 Phase IIa ROD). A response describing the relevance of the pier data was provided there.

16. **Comment:** We oppose NCDOT and FHWA's preferred "Bridge Within Existing Easement" alternative. Instead, we support a stable, long-term transportation solution that avoids the high erosion areas of the Refuge. In Part III.B of our comments on the "Phase IIa" EA, we discussed the viability of a Pamlico Sound bridge from Bodie Island to Rodanthe and a high-speed, shallow-draft ferry network, and explained why NCDOT and FHWA's analysis of these alternatives is inadequate. Those concerns remain, as does our support for a Pamlico Sound bridge that bypasses the entire Refuge.

While a complete solution to move the entire transportation corridor out of the high erosion areas of the Refuge is still the best option, we also support achieving that goal in "phases." The seven-mile bridge proposed by the U.S. Fish & Wildlife Service would be a significant step towards that goal, and it would avoid the unknown costs and practical challenges of the two in-easement "Phase II" bridges ending up in the ocean. This seven-mile bridge could be built with a "spur" to accommodate a future extension through Pamlico Sound that could connect to the "Phase I" Oregon Inlet bridge when shoreline conditions dictate. Such a phased approach would eliminate NCDOT and FHWA's concerns about funding a full-length Pamlico Sound bridge in a single funding cycle. It would also allow for vehicle access into the Refuge at the north end of the seven-mile bridge and the south end of the "Phase I" bridge. Accordingly, we support this seven-mile alternative with a design that would allow for extending the causeway through Pamlico Sound.

However, NCDOT and FHWA have given short shrift to this alternative. It is barely mentioned in the "Phase IIb" EA (at p. 2-5), while the "Phase IIa" EA (Section 2.3.4) offered only a cursory analysis before rejecting this alternative. The three reasons

given for rejecting this alternative are inadequate. First, the cost of this alternative is comparable to NCDOT's current plans. NCDOT estimated the construction cost of the seven-mile bridge at \$270 million (attached as Attachment 3). The recently awarded contract for the "Phase IIa" bridge plus the "Phase IIb" bridges brings the total construction cost for this portion of the Project to a range of \$267 million to \$316 million. The amount allocated in the current STIP for the Project is approximately \$476 million. The current allocation is very close to the sum or the estimated cost of the seven-mile bridge combined with the \$216 million contract price of the "Phase I" bridge – and is likely less than the total cost of NCDOT's "Phase I" bridge and "Phase II" alternatives. Moreover, the cost of the seven-mile bridge is likely to be lower than NCDOT's estimate, since the contract price of both the "Phase I" and "Phase IIa" bridges came in significantly lower than NCDOT's estimates.

In the "Phase IIa" EA, NCDOT claims the seven-mile bridge would cost \$289-\$440 million. There is no documentation in the "Phase IIa" EA or in the information packet for the March 21, 2012 Merger Team meeting, to which the EA refers (p. 2-16), of how NCDOT arrived at this higher estimate. By contrast, NCDOT's \$270-million estimate for the seven-mile bridge contains a detailed itemization of the estimated costs. Further, NCDOT concluded without support that this alternative is "unaffordable."

This conclusion is arbitrary and capricious, especially since NCDOT now proposes to spend up to \$532 million to construct the "Phase I" and "Phase II" bridges, and still more on sand dredging and nourishment at Rodanthe. NCDOT attempted in the "Phase IIa" EA to justify its rejection of the seven-mile bridge by stating that "the construction of those individual alternatives could be phased, and each phase be opened to traffic prior to the completion of the other phase," but this statement ignores the fact that NCDOT is proposing to fund and construct both bridges in a single transportation funding cycle. Moreover, NCDOT rejected the seven-mile alternative through the shelter waters of Pamlico Sound before it had even estimated the maintenance costs for in-easement bridges in the ocean. "Phase IIa" EA at A-47.

***Response:** The commenter's opposition to the Bridge within Existing NC 12 Easement Alternative is noted, and the concerns raised by the commenter about this alternative in their various comments were a consideration in the decision to select the 2014B Bridge on New Location Alternative as the LEDPA and identify it as the Preferred Alternative in this revised Phase IIb EA. The commenter's support of the "Seven-Mile Bridge Alternative" also is acknowledged. The decision to select the 2014B Bridge on New Location Alternative as the LEDPA and identify it as the Preferred Alternative in this revised Phase IIb EA and plans to revisit the selection of detailed study alternatives for Phase IIa, including an alternative that extends the Phase IIb project to the northern end of the Phase IIa project area means a phased equivalent of the "Seven-Mile Bridge Alternative" will be examined.*

17. **Comment:** NCDOT's secondary reasons for rejecting the seven-mile bridge are similarly unavailing. The potential impacts to the dike around the southern Refuge pond could be minimized by coordinating with FWS, which proposed this alternative in the first place. Since even NCDOT and FHWA agree that all the "Phase II" alternatives "use" the Refuge, as defined by Section 4(f) (see Section IIIA. below), that statute requires that the alternative causing the least overall harm be selected, just as the Clean Water Act mandates that the least environmentally damaging alternative be selected.

In this case, the seven-mile alternative would be the least environmentally damaging because it would avoid the significant degradation of the Refuge that is certain to result from the construction and maintenance of in-easement bridges, the erosion and scour they cause, and the conditions they would create when shoreline migration leaves them in the surf and, ultimately, in the ocean. It would also allow for the restoration of approximately 70.7 acres of habitat in the Refuge when the current NC-12 easement is abandoned ("Phase IIa" EA at 2-16).

Nor is NCDOT and FHWA's stated concern about impacts to SAV habitat a plausible reason to reject the seven-mile bridge alternative. These impacts would largely consist of shading. In any case, concerns about shading of SAV habitat in the Sound are outweighed by the many environmental benefits that make this alternative the least environmentally damaging overall compared to the other "Phase II" options.

***Response:** The concerns and observations noted by the commenter will be considered in the planned Phase IIa Extension Alternative study described in the responses to the comment above and the commenter's comment 1, as well as future environmental impact documentation for Phase IIa.*

18. **Comment:** Under Section 4(f), FHWA is prohibited from approving "any program or project" that requires the use of any public parkland, unless "(1) there is no prudent and feasible alternative to using that land; and (2) the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use." 49 U.S.C. § 303(c) (emphasis added). "Use" within the meaning of Section 4(f) includes uses that result in the actual incorporation of land into a transportation facility, as well as constructive uses that create proximity impacts causing substantial impairment to a resource. See 23 C.F.R. §§ 774.17, 774.15. The regulations implementing Section 4(f) clarify that FHWA "may approve only the alternative that ... [c]auses the least overall harm" to the property. 23 C.F.R. § 774.3(c)(1). Accordingly, under Section 4(f), FHWA must first select an alternative that avoids using Section 4(f) lands altogether, and, only if no "prudent and feasible avoidance alternative" is available, FHWA must select the alternative that causes the "least overall harm" and also take steps to "minimize harm."

Rather than complying with these requirements, NCDOT and FHWA have assumed erroneously that the "joint planning" exception to Section 4(f), 23 C.F.R. § 774.11 (i), exempted them from considering or minimizing any harm to the Refuge "as a refuge" and have considered only far lesser impacts to the Refuge "as an historic property." EA at 5-4.

This analysis is incorrect. The "joint planning" exception does not apply to the Refuge because the Refuge was not "*formally reserved* for a future transportation facility *before or at the same time* a park, recreation area, or wildlife and waterfowl refuge [was] established and concurrent or joint planning or development of the transportation facility and the Section 4(f) resource occur[red]." 23 C.F.R. § 774.11 (i) (emphasis added).

The Refuge was created in 1938, and the easement for NC-12 was not granted until 1954. No transportation facility was formally reserved when the Refuge was created. Indeed, all of the land condemned by the U.S. Government for the Refuge was taken from private landowners; it was never in the hands of the State of North Carolina, so no transportation facility could have been reserved by the State when the Refuge was created. Moreover, the entire northern portion of the Refuge was explicitly taken free of any and all easements or other encumbrances of any kind, as the Judgments of Condemnation in FHWA and NCDOT's files clearly indicate. Accordingly, the Department of Interior ("DOI") has stated definitively that the "joint planning" exception does not apply to the Refuge. DOI concluded that "there is *no support* for FHWA's ultimate conclusion that the State and the United States engaged in joint transportation and Refuge planning." Letter from Horace G. Clark, Regional Director, Office of the Solicitor to Cynthia K. Dohner, Regional Director, Fish and Wildlife Service (Apr. 9, 2010), at 5 (Attachment 2 to SELC's March 28, 2013 comments on "Phase IIa" EA, referenced above as Attachment 1 and incorporated in these comments) (emphasis added). In sum, the proposed bridge, like the rest of the Project in the Refuge, is subject to the requirements of Section 4(f), and the EA does not satisfy those requirements.

***Response:** The Section 4(f) Evaluation presented in Chapter 5 of this revised Phase IIb EA assumes that the Pea Island National Wildlife Refuge is a Section 4(f) resource both as a wildlife refuge and an historic resource.*

19. **Comment:** In addition to the actual use of the Refuge for maintenance, discussed above, FHWA's preferred in-easement bridge would constructively use Refuge property as well. "A constructive use occurs when the transportation project does not incorporate land from a Section 4(f) property, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired." 23 C.F.R. § 774.15(a). The physical impacts of the proposed bridge on the Refuge "as a refuge"

would impair the "protected activities, features, or attributes that qualify the property for protection" far more substantially than the visual intrusion on the Refuge "as a historic property" that FHWA and NCDOT do acknowledge.

The significant adverse impacts discussed above would substantially impair the Refuge as a habitat for migratory waterfowl and other wildlife. The elevated roadway would soon be located on the beach, in the surf, and eventually in the Atlantic Ocean as the island migrates westward. Thus, the bridge would negatively affect Refuge geology and habitat by increasing erosion, interfering with long shore sediment transport, causing scour, and affecting inlet formation. Lights and traffic noise on the beach would further impair nesting habitat. And continual maintenance, which would not be confined to the easement, would constitute an additional impairment to the refuge. As discussed above, these effects of a long ocean-side bridge running parallel to the shore have not been adequately studied and may be much more significant than revealed in the FEIS.

Moreover, FWHA's preferred in-easement ocean bridge would be the second such bridge in the Refuge, and the adverse impacts of the two "Phase II" bridges' would degrade a very significant proportion of the Refuge's beaches. This would change the character of the Refuge and its beach nesting habitat, tipping the balance toward a perpetual construction zone and a landscape dominated by elevated highway and scour-inducing bridge pilings. In sum, all of these effects will substantially impair the Refuge's purpose "as a refuge and breeding ground for migratory waterfowl and other wildlife," including endangered sea turtles.

***Response:** The commenter made a similar comment related to substantial impairment on the Phase IIa EA. A response was provided under comment 30 in the Phase IIa ROD. As indicated in the Phase IIa ROD response, substantial impairment occurs when the protected activities, features, or attributes of the Section 4(f) property are substantially diminished. As a general matter, this means that the value of the resource, in terms of its Section 4(f) purpose and significance, will be meaningfully reduced or lost. The purpose of Pea Island National Wildlife Refuge is to protect and conserve migratory birds and other wildlife resources through the protection of wetlands, in accordance with the following: "...as a refuge and breeding ground for migratory waterfowl and other wildlife..." (Executive Order 7864, August 8, 1938) Refuge objectives are:*

- Provide nesting, resting, and wintering habitat for migratory birds, including the greater snow geese and other migratory waterfowl, shorebirds, wading birds, raptors, and neotropical migrants.*
- Provide habitat and protection for endangered and threatened species.*

- *Provide opportunities for public enjoyment of wildlife and wildlands resources. Public use programs focus on interpretation, environmental education, wildlife observation, wildlife photography, and fishing.*

The coastal and habitat impacts listed by the commenter are addressed in the 2008 FEIS, the Phase IIa EA, the 2013 Phase IIb EA, and this revised Phase IIb EA. NCDOT and FHWA disagree that the effects of a long ocean-side bridge running parallel to the shore were not adequately studied in that documentation. With regards to the nature and severity of impacts related to beach erosion, sediment transport, scour, and inlet formation, see the responses to the commenter's comments 8 to 11, 14, 15 and 17, above and their comments 14 to 16 in the Phase IIa ROD. Also see the response to the commenter's scoping comment 7 regarding "Bridge in the Surf as a Constructive Use of the Refuge" on page C-33 of the Phase IIa EA. The effect of traffic noise is addressed in Section 4.7.6.6 of the 2008 FEIS beginning on page 4-111. The potential effect of headlights from the bridge on nesting sea turtles would be mitigated by a 36-inch high concrete parapet incorporated into the bridge rail design (see the Project Commitments in this ROD). With regards to continual maintenance outside the easement, see the response to the commenter's comment 17 in the Phase IIa ROD addressing interim maintenance of existing NC 12 expected until all of the phases of the PBC/TMP Alternative have been implemented, as well as the commenter's scoping comment 7 regarding "Temporary NC 12 Maintenance and Minimizing Impacts to the Refuge" beginning on page C-34 of the Phase IIa EA. Regarding long-term project maintenance with the Bridge within Existing NC 12 Easement Alternative, see the response to the commenter's comment 11 above, as well as the response to the commenter's scoping comment 7 related to "Maintenance of Bridge in the Surf Zone" on page C-38 of the Phase IIa EA. Regarding the effect on beach habitat see the response to the commenter's comment 9 above, and regarding tipping the balance toward a perpetual construction zone and a landscape dominated by elevated highway and scour-inducing bridge pilings see the response to the commenter's comment 15 above. The response to comment 9 above also addresses the commenter's position stated in this comment, that Refuge's purpose as a refuge and breeding ground for migratory waterfowl and other wildlife, including endangered sea turtles, would be substantially impaired.

In the response to the commenter's comment 30 in the Phase IIa ROD, it was stated that FHWA does not believe that the proximity effects of the PBC/TMP Alternative, including the option of a bridge within the existing NC 12 easement from Oregon Inlet to Rodanthe, will result in substantial impairment to the Refuge as a refuge. Coastal and habitat impacts of such alternatives on the Refuge will continue to be a consideration in impact assessments for future phases. The potential for impacts associated with alternatives within the existing NC 12 easement to cause substantial impairment of the Refuge both as a refuge and as an historic resource will be considered in impact assessments and Section 4(f) evaluations for future phases.

20. **Comment:** NCDOT and FHWA claim the Pamlico Sound Alternative, which avoids the Refuge entirely, is not "prudent" within the meaning of Section 4(f) solely because of its estimated construction cost and the claimed inability to fund that up-front cost. EA at 5-11. But under Section 4(f), an alternative that avoids Section 4(f) property, such as the Pamlico Sound Alternative, may be rejected as imprudent due to cost only if it "results in *additional* construction, maintenance, or operational costs of an *extraordinary magnitude*." 23 C.F.R. § 774.17 (emphasis added).

As we have previously explained, NCDOT and FHWA's analysis of the cost and funding of the Pamlico Sound Alternative fails to satisfy that standard. NCDOT and FHWA rejected TIFIA-based toll funding for the Pamlico Sound Alternative – even though it would have allowed this alternative to be funded - on the ground that the tolls would be "relatively high," and they chose, based solely on their own preferences, not to pursue any gap funding or additional STIP funding to supplement such tolls. NCDOT and FHWA's updated toll analysis now estimates tolls of \$10.15 to \$11.75, which they still deem "relatively high," and they still refuse, without explanation, to seek any additional funding allocation for the Project. Moreover, these figures do not reflect NCDOT's own recent construction cost estimate of as little as \$569 million for the Pamlico Sound Alternative. Even using NCDOT and FHWA's dubiously higher, revised version of their updated estimates, this alternative could still result in a savings, compared to the Selected Alternative, of \$628 million.

As discussed above, the seven-mile bridge alternative, with features to allow for a connection through Pamlico Sound to the "Phase I" bridge over Oregon Inlet, would also provide a long-term, stable transportation solution, and would allow for construction of the entire causeway over multiple funding cycles. This alternative would result in far less harm than the proposed in-easement ocean bridges, and would yield a large net gain of Refuge habitat. For the reasons given above, NCDOT and FHWA's cost analysis and rejection of this alternative were arbitrary and capricious.

Accordingly, NCDOT and FHWA have failed to satisfy the requirements of Section 4(f), and must prepare a Revised 4(f) analysis to correct this error.

***Response:** The commenter's comments regarding the funding of the Pamlico Sound Bridge Alternative were answered in the response to the commenter's comment 33 in the October 2013 Phase IIa ROD.*

Regarding a "seven-mile bridge alternative," the decision to select the 2014B Bridge on New Location Alternative as the LEDPA for Phase IIb and identify it as the Preferred Alternative in this revised Phase IIb EA, as well as NCDOT's plans to revisit the selection of detailed study alternatives for Phase IIa, including an alternative that extends the Phase IIb project to the northern end of the Phase IIa

project area means a phased equivalent of the "Seven-Mile Bridge Alternative" will be examined in future Phase IIa environmental documentation. See the response to the commenter's comment 1.

21. **Comment:** NCDOT and FHWA appear to misrepresent the status of their required Endangered Species Act ("ESA") consultation. The "Phase IIb" EA says that "[f]ormal consultation concluded with the receipt of a letter from NMFS on September 30, 2013." EA at 6-6. But NMFS's September 30, 2013 letter addresses only the "Phase I" bridge. See "Phase IIa" ROD at D-19. That letter specifically contemplates "future consultation" with NMFS and FWS regarding the "Phase II" bridges, which appears not to have occurred. Similarly, FHWA must coordinate with NMFS regarding essential fish habitat ("EFH") for the "Phase II" bridging.

This coordination and consultation regarding the ESA and EFH must adequately address NMFS's longstanding concerns about the effects of FHWA's preferred in-easement bridging. For example, while the "Phase IIb" EA states that there has been no substantial change in EFH habitat since the FEIS, NMFS found the FEIS analysis to be inadequate. In its October 27, 2008 comments on the FEIS, NMFS expressed concern that the proposed "Phase II" bridges, when located in the ocean, "could result in long-term adverse impacts to NOAA trust resources." NMFS also stated its preference in those comments for the Pamlico Sound Alternative due to its lesser impacts. We agree with NMFS that the impacts of the proposed "Phase II" ocean bridges are likely to be severe, and instead support alternatives that would route the transportation corridor through Pamlico Sound.

***Response:** Coordination and consultation with the NMFS regarding the Endangered Species Act and EFH has continued to occur since the release of the 2013 Phase IIb EA. It has focused on the Bridge on New Location Alternative (LEDPA), which routes the transportation corridor through Pamlico Sound. This coordination and consultation has resulted in a refinement to the Bridge on New Location Alternative to minimize SAV impacts (see Section 6.4), concurrence by NMFS representatives on the 2014B Bridge on New Location Alternative as the LEDPA (see Section 6.2), advancement on an agreement on SAV impact mitigation (see Section 6.4), and the conclusion that the LEDPA May Affect, Not Likely to Adversely Affect threatened and endangered marine species under the jurisdiction of the NMFS (see Section 6.3).*

22. **Comment:** NCDOT and FHWA must prepare an SEIS and revised Section 4(f) Evaluation to correct inadequacies in the current analysis and address the changed circumstances in the funding and setting of the Project. They must abandon their persistent refusal to apply Section 4(f) properly to the significant impacts of the Project in the Refuge. And most importantly, they must disclose their plans for the

Project as a whole so they can be evaluated by the Merger Team, governmental decision-makers, and the public.

Response: The positions of the commenter are acknowledged. FHWA and NCDOT's responses to these positions are presented in their responses above to the commenter's detailed comments.

F.3.4 Surfrider Foundation, Outer Banks Chapter

1. **Comment:** The Outer Banks Chapter of the Surfrider Foundation, which has 120 active members, writes to provide support for the Bridge on New Location Alternative for the following reasons:
 - Less recreational impact on surfers in the long run
 - Belief that an inlet will likely form at the s-curves location regardless of the bridge built; if the existing easement bridge is built, there will likely be a need for additional structures and/or stabilizing systems
 - The long-term environmental impacts will be less than the complications of the existing easement bridge
 - The long-term cost of maintaining the bridge in the existing easement will be higher

Response: The 2014B Bridge on New Location Alternative is now NCDOT's Preferred Alternative.

2. **Comment:** All attempts should be made to maintain access and at least the current level of parking for the recreational resources.

Response: As a part of mitigation for bypassing an existing parking lot in the Phase IIa area with a planned interim bridge, NCDOT has agreed to build a parking lot within the Refuge. The new parking lot site is approximately 900 feet north of the northern terminus of the Phase IIb project. The site was selected in February 2016 by the Refuge manager with input from NCDOT. Access to the southern border of the Refuge will be maintained via the existing NC 12 pavement with the 2014B Bridge on New Location Alternative (preferred). However, it is expected beach erosion will quickly claim the NC 12 easement near the Refuge border when the sandbags temporarily protecting NC 12 in that area are removed. The NC 12 pavement in the Refuge will be removed where it is bypassed by a bridge. The provision for off-road access to the Refuge will be a future decision of the Refuge.

3. **Comment:** Considerations should be made to minimize the impact on local businesses and residents in Rodanthe.

***Response:** Minimizing impacts to local businesses and residents was one factor considered in the decision to change the Preferred Alternative to the 2014B Bridge on New Location Alternative in this revised Phase IIb EA.*

4. **Comment:** The Surfrider Foundation should be viewed as a resource for continued involvement during this entire process given its unique representation of a group of deeply concerned residents that frequently use the recreation resource of S-Turns and are very familiar with the access issues surrounding it.

***Response:** Comments on this revised Phase IIb EA are welcome. Questions and comments are welcome at any time via the project information line – 1-866-803-0529.*

Appendix G

**Public Hearing Transcripts
and Original Written
Comments on the
2013 Phase IIb EA**

G. Public Hearing Transcripts and Original Written Comments on the 2013 Phase IIb EA

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OFFICIAL PUBLIC HEARING TRANSCRIPT

NC 12 – Rodanthe Breach Long-Term Improvements
Bonner Bridge – Phase IIb
TIP Project No. B-2500

Cape Hatteras Secondary School
48576 Highway 12, Buxton

January 8, 2014

Okay, we'll go ahead and get started. Let me check my sound level. Can everyone hear me in the back from here? That's good? Okay, wave your hand if I start getting to wiry or something and you can't hear me just let me know because I don't want you all to miss anything.

Well, I'd like to welcome you to the NC 12 Rodanthe Breach Long-Term Improvements Public Hearing. We have a series of hearings that are going on this week, starting yesterday in Ocracoke and we'll conclude with the hearing tomorrow in Manteo. My name is Drew Joyner. I'm with the Department of Transportation. I'll be facilitating this hearing.

Before we get started, a couple of housekeeping items. In case you didn't notice when you came in the bathrooms are just outside to the left and right, if you need to use those facilities. And of course, the emergency exits are back out the way you came. Let's hope we don't need those. I'm not planning on using them. Mobile phones, please be sure to cut your phone off or put it on vibrate; nothing more entertaining than hearing your latest cool song on your phone and sharing that with everybody.

Before we get started, I did want to recognize a couple of folks that are here today. Warren Judge, who is the Chairman of County Commissioners, is here today.

Warren Judge: Thank you Drew.

Facilitator: You're welcome. And Allen Burrus, who represents Hatteras Island, was here earlier today. I don't believe he made it out to the formal, but he was here earlier today for our informal hearing. Bobby Lewis is here from the Secretary's Office with DOT.

We got folks representing the first division, which is the area with NCDOT that is the area that you're in; Division I. Shawn Mebane and Pablo Hernandez have been part of the hearings tonight helping out with this. The Project Manager who is doing the project development studies for this project is Beth Smyre. She is here tonight and she is over there in the corner. Gary Lovering, with our NCDOT Roadway Design is here. We also have a lot of other DOT Staff and I'm not going to bore you with names of all those. But we do have quite a few folks here helping us out today, of which I'm very thankful. We

47 also have staff from Parsons Brinckerhoff, who is the consulting firm that is helping us
48 with the project development studies. So, we have several staff from their office as well.

49
50 I also wanted to let you know that Malcolm Fearing, who is your local representative on
51 the Board of Transportation, he's the person that has been appointed to represent your
52 area. He and Jerry Jennings, who's the Division Engineer for your region with DOT,
53 would like to send their regrets. They wanted to be here but are representing you in
54 Raleigh today in the Board of Transportation Meetings. So, they were not able to attend,
55 but they will be at the meetings tomorrow in Manteo. But they do send their regrets. And
56 I just noticed that's why I got kind of distracted. I want to recognize Ron Lucas also with
57 our Federal Highway Administration, one of our federal partners. I wanted to recognize
58 him as well. I appreciate him attending tonight, okay.

59
60 So, tonight's agenda... basically the way this is going to work is I'm going to run through
61 our handout real quickly, not reading it word for word, but hitting the highlights to give
62 you an overview of the project for those who were not able to attend some of our earlier
63 open houses. Then I'm going to run through the maps real quickly and give you an idea
64 of the two alternatives that we carried through detailed study.

65
66 And then the most important part of tonight, which is the hearing part, is where NCDOT
67 is here to listen to you. And this is one of your many opportunities to comment on this
68 project. Anyone who would like to come and speak, there'll be an opportunity. We had a
69 sign up at the open house and then a sign up sheet out for anybody that wanted to speak.
70 We'll start with that list and then I'll open it up to the floor to basically anyone that
71 would like to come up and speak. So, we want to give everybody an opportunity if you
72 would like to speak.

73
74 I will note that these proceedings are being recorded and a written transcript will be
75 provided based on that. So, everything you're saying when folks do come down, please
76 be sure to speak into the mic so that everyone else can hear and then also so that we can
77 record your comments for the record. And I guess I will go ahead and mention too we are
78 videotaping the beginning portion of this presentation and I'll double check with them.
79 We're going to take my presentation portion and put that on the YouTube site. Is that the
80 plan?

81
82 Audience Member: No, actually from the NC 12 Page, we'll have your
83 presentation along with all of the maps and posters that were shown at the public hearing.
84 We'll have all of those on there as well.

85
86 Moderator: Okay, I'm going to repeat that for those that didn't hear sitting next
87 to her. We will have for folks that were not able to be here or if you're here and you just
88 want to listen to it again or you missed something and you want to go back and clarify
89 something. On DOT's webpage and Facebook page, we will have links and have the
90 video portion of my presentation, not the comments portion when you all come up and
91 speak that video will not be on the web, but my presentation portion as well as the maps
92 and the boards and the information that we had at the hearings. So, if you missed

93 something tonight and you want to go back and check it or you want to get your neighbor
 94 to check then that will be available as well, okay.
 95
 96 As I mentioned, we're here for the Rodanthe Breach portion of the Bonner Bridge
 97 Project. This is Phase Ib. Phase I is the Bonner Bridge itself. Phase IIa is the Pea Island
 98 Breach area near the temporary bridge and we had a hearing on that last year in March,
 99 early spring time period. And today we're going to talk about the breach area in the
 100 Rodanthe area.
 101
 102 And I'm going to sort of follow through the order of your handout so that you can follow
 103 along a little bit. Again, I'm not going to read it verbatim. I'll give you all a chance to do
 104 that at your leisure.
 105
 106 As I mentioned earlier, we had informal open houses earlier today in Rodanthe. We had
 107 one yesterday in Ocracoke and we'll have another one just prior to our formal hearing in
 108 Manteo. So, if you'd like to come out for that or if somebody misses it and you want to
 109 send somebody, a neighbor or a friend. And then of course, the formal presentation or
 110 formal hearing is tonight. The same information is being presented at all of these
 111 meetings. So, no one is hearing anything differently tonight than they heard yesterday
 112 than they'll hear tomorrow.
 113
 114 And for those folks who aren't comfortable coming up and speaking everything carries
 115 the same weight. If you send me an email, if you send me something, you know, however
 116 you get your comments to me, we look at all of those equally. So, don't feel like if you're
 117 not comfortable speaking that your voice is not going to be heard.
 118
 119 So, *the purpose of tonight's hearing* is to receive your comments and concerns on this
 120 project. That's really why we're here. I'll talk for a few minutes, but the really important
 121 thing is to hear from you.
 122
 123 DOT released an Environmental Assessment. That's an environmental study. It's a
 124 document that we just completed and in addition to the comments sort of on the project
 125 we're asking for comments on that Environmental Assessment and documents the studies
 126 that we've done on the project and the decisions we've made up until this point.
 127
 128 Copies of the EA and the documents are at the locations that are shown in your handout.
 129 So, if you would like to go and see these first hand, sometimes it's easier to see than on a
 130 website. But it's also available on the website and you'll see the web page down at the
 131 bottom of page 1.
 132
 133 So, as I said, it's really important to hear from you. And you have lots of opportunities.
 134 There are lots of ways we can hear from you. We have a comment box on your way out.
 135 If you look on the back of your handout, the back sheet is a *comment sheet*. What you
 136 need to do is just tear that off, fill that out, and drop it in the box.
 137

138 We've got some specific questions in there. The more detail you can give us about your
 139 opinions, the better, because what you see here is what we've done up to this point. But if
 140 you have specific concerns, changes, suggestions, why you have an opinion that one
 141 alternative is better than the other, we want to know that; because that can help us with
 142 tweaking the alternatives and making decisions in the future.
 143
 144 So, you can drop it off in the box on the way out. You can mail it to us later. You can
 145 email me. My email address is included in your handout. You can fax it to us or you can
 146 do comments tonight, as well.
 147
 148 So, *what do we do with the input* that we hear? What do we do with the comments that
 149 everyone gives us today? The DOT Project Team will review all of the comments. We'll
 150 put all of the comments together. We'll sort and organize and look through them and
 151 we'll address all of the comments and share them with our state and federal partners. And
 152 most issues are resolved at this time and then we move forward in the project process.
 153
 154 The *next steps*, again we review and consider all hearing comments. Then we'll select an
 155 alternative for construction. Right now we have a preferred alternative and I'll go into
 156 detail on that in just minute. But we'll select a preferred alternative or select an
 157 alternative for construction and then we'll determine if there are any significant new
 158 impacts.
 159
 160 If so, the Environmental Assessment we did will not be sufficient enough. If there are
 161 new significant impacts, then we'll do a Supplemental Final EIS. So, just another
 162 environmental document that we do another part of the studies that we do. If there are no
 163 new significant impacts, then we will issue a new Record of Decision for the project. And
 164 then we'll award a design-build construction contract. Right now we're looking at late
 165 spring 2014.
 166
 167 So, I've talked a little bit about the project. It is the long-term solution for the section of
 168 NC 12 in the southern portion of the Pea Island National Wildlife Refuge and northern
 169 Rodanthe. It is designed to last at least 50 years. And it is as I mentioned earlier Phase IIb
 170 of the Bonner Bridge Project.
 171
 172 These are the two study alternatives that we have. I'll cover some of the other things that
 173 we looked at, some of the other options that we looked at, but these are the two that went
 174 through detailed study. We have the bridge on new location, which starts north of
 175 Rodanthe and the Pea Island Wildlife Refuge and goes into the sound and then ties in in
 176 Rodanthe.
 177
 178 And the other option is the bridge within existing NC 12 easement, which generally
 179 follows the existing road. It's within existing easement, it won't be exactly where the
 180 road is, but generally will follow the existing road through and into Rodanthe. Both of
 181 these are bridges. So, everything you see here is on a bridge. So, it's either a bridge along
 182 existing within existing easement or bridge in the sound.
 183

184 So, a little more detail on a bridge within exiting NC 12 easement. It's a 2.3-mile bridge.
185 And you can see a visualization that we have done as sort of an artist rendering type of
186 thing that we've done to give you an idea of what that might look like. It accounts for
187 future breaches and erosion in the area. And existing NC 12 will be removed within
188 Rodanthe, within the Refuge. And in Rodanthe we have one-way service roads that
189 provide property access.

190
191 And with both of the alternatives we're going to maintain traffic throughout construction.
192 Now, there may be temporary closures here and there as we're doing some construction
193 phasing and things of that nature, but generally the contractor is going to be asked to keep
194 these to a minimum. So, we're really trying to keep traffic open during construction.

195 **The impacts to Rodanthe**, here are some of the generalized impacts to Rodanthe.
196 Residential and business relocations and here you can see another visualization at
197 Corbina Drive, NC 12 looking north. And some of the other impacts would be use of
198 frontage road for local access. So, you would use frontage roads instead of direct access
199 to NC 12 in that area. And then there will be visual impacts as well.

200
201 To the Refuge, there will be visual impacts and loss of direct road access to the Refuge
202 for about 1.8-miles; because it will all be up on a bridge. You can't just pull off the side
203 of the road and hop out there.

204
205 The bridge on new location alternative and here you see another visualization that we
206 have. It's a 2.6-mile long bridge. Again, it accounts for future breaches and erosion and
207 then the Refuge the existing NC 12 pavement would be removed. And then in Rodanthe,
208 NC 12 will remain for property access. So, portions of the road in Rodanthe will stay to
209 access the properties and then once you get into the Refuge all of that will be removed up
210 to the new bridge. And again, we'll maintain traffic during construction.

211
212 The impacts in Rodanthe, residential and business relocations, visual impacts for the
213 sound side homes and you'll see this here. This is the south end of Corbina looking west
214 And this is a visualization of what it would look like. And it would affect recreation of
215 Pamlico Sound with the location of the bridge. And it would also affect habitat within the
216 Pamlico Sound.

217
218 **Impacts in the Refuge** would be 2.7 acres of new easement that would be needed and
219 19.27 of existing acres of NC 12 easement would be returned to the Refuge. So, there's
220 sort of a net gain for the Refuge with this alternative. And then loss of direct road access
221 to the Refuge for 1.8-miles. You wouldn't have the road through that area anymore as I
222 mentioned earlier.

223
224 Now, the preferred alternative, DOT's preferred alternative is a bridge within NC 12
225 easement. Again, that's DOT's preferred alternative but we want to hear from you today
226 what your opinion is. And some of the reasoning behind that is that there's no new
227 permanent NC 12 easement in the Refuge. NCDOT already has that easement. It also
228 avoids impacts to Pamlico Sound.

230
231 But the final and this is what I was talking about is the final decision on the alternative
232 will consider public input. So, we really, really want to hear from you and your neighbors
233 and anybody else that's not here that has an opinion. We want to hear from everyone. So,
234 let the project team know what alternative you prefer and why. The "why" is very
235 important as well.

236
237 So, I mentioned we had looked at a couple of other options that were not taken through
238 detailed study and you see the two we already mentioned, the bridge on new location and
239 the bridge within existing easement. That's the light blue and the red. We also had a
240 bridge within existing easement and beach nourishment combination. And that's the
241 yellow. And that would have been a bridge that would have started at the north and come
242 down just into Rodanthe and stop a little bit shorter of the other bridge. And that would
243 have been supplemented. That bridge would have been supplemented with beach
244 nourishment in this area where the yellow line is.

245
246 And then the other alternative that was not carried forward for detailed study was the
247 beach nourishment option that included two new 20-foot high dunes and beach
248 nourishment in this area.

249
250 A little bit about **project costs, funding, and schedule**. Oh, wait a minute, but before I go,
251 I will not go into a lot of detail on that, but those options were if you were wondering
252 about the beach nourishment options that I just mentioned, those two options, there's
253 some detail in your handout about why they were eliminated and I'm not going to go into
254 that detail. But if you're interested, it's in there as well as in our environmental
255 document, the Environmental Assessment.

256
257 So, based on our preliminary design the construction cost for the project is for the bridge
258 within NC 12 easement is between \$187.5 and \$215.5 million. The bridge on new
259 location is between \$203.3 and \$236.3 million. And these values included construction,
260 right-of-way acquisition, relocation, utilities relocation, and is presented as a range to
261 reflect the possible structure types and construction techniques. So, we're giving our
262 contractors some options to help maximize what we're able to do here and that gives us a
263 range here.

264
265 As far as funding, there will be state and federal funding, generally an 80/20 split; 20%
266 state funds, 80% federal funds. However, this may be eligible for reimbursement under
267 the Federal Emergency Relief... for Federal Emergency Relief Funding and that could be
268 as much as 30% of the long-term solution.

269
270 And then as mentioned earlier, we also as far as schedule we'd be looking at a design-
271 build contract for construction late spring 2014. And when we talk about design-build
272 what that means is we'd have a contractor that would be able to do the design and the
273 construction together to help maximize a lot of different things. It gives it a lot of
274 flexibility. But what that does mean is when we let the project they start the final design
275 on the project and also start purchasing right-of-way and those types of things. So, it

276 could be as much as a year or a half before you see actual construction. But
 277 it's not that they're not doing anything, they're working on the final design and buying
 278 the right-of-way for the project.
 279
 280 And speaking of, let's see, before we go to right-of-way acquisition I did want to make
 281 sure you note on page 11, I'm not going to go through it, but the ***purpose and need of the***
 282 ***project*** is listed on page 11 for Bonner Bridge Replacement Project. And this is a part of
 283 the overall Bonner Bridge Replacement Project. So, I do want to mention that. And this
 284 project is consistent with local land use plans and that's mentioned on page 12.
 285
 286 There will be ***right-of-way acquisition*** for the project. It will require property acquisition
 287 and relocation of homes and businesses. On page 12, and because there are relocations I
 288 am going to actually read through this, so please bear with me for a moment. For right-of-
 289 way acquisition, after decisions are made regarding the final design of the alternative
 290 selected for construction, the proposed right-of-way limits will be staked in the ground. If
 291 you are an affected property owner, a Right-of-Way Agent will contact you and arrange a
 292 meeting. The agent will explain the plans and advise you as to how the project will affect
 293 you. The agent will inform you of your rights as a property owner.
 294
 295 If permanent right-of-way is required, professionals who are familiar with real estate
 296 values will evaluate or appraise your property. The evaluations or appraisals will be
 297 reviewed for completeness and accuracy, and then the Right-of-Way Agent will make a
 298 written offer to you. The current market value of the property at its highest and best use
 299 when appraised will be offered as compensation. NCDOT must:
 300
 301 • Treat all owners and tenants equally;
 302 • Fully explain the owner's rights;
 303 • Pay just compensation in exchange for property rights; and
 304 • Furnish relocation advisory assistance.
 305
 306 And that ***relocation assistance*** is this if you are a relocatee, that is, if your residence or
 307 business is to be acquired as part of the project, additional assistance in the form of
 308 advice and compensation is available. You will also be provided with assistance on
 309 locations of comparable housing and/or commercial establishments, moving procedures,
 310 and moving aid. Moving expenses may be paid for you. Additional monetary
 311 compensation is available to help homeowners cope with mortgage increases, increased
 312 value of comparable homes, closing costs, etc. And a similar program is available to
 313 assist business owners.
 314
 315 And our Right-of-Way Agent can explain more about that and we have one here tonight.
 316 Also, if you miss her, let me know, send me an email. I can get you in contact with our
 317 Right-of-Way Agents. We also have right-of-way and relocation pamphlets and
 318 brochures that are available.
 319
 320 So, there are other projects in the area that are going on, the other phases of the project
 321 that you all might be interested in. I'm not going to go into those in detail because that's

322 really not what we're here for. We're here to talk about Phase IIb. But in your handout on
 323 page 12 and 13 there is some information about some of the other projects that are going
 324 if you're interested in them.
 325
 326 Also, if you want more information we've kind of talked about this before, the NC 12 site
 327 is here and there are several other twitter, Facebook, and some of the other access to our
 328 social media sites and that sort of thing. It's shown on the bottom of page 13. And again,
 329 there are many ways to comment. But the key thing is we want to hear your comments.
 330
 331 I also mentioned this is sort of at the end of your handout. There is a ***Title VI Public***
 332 ***Involvement Form***. What that is a form that's voluntary. You don't have to put your
 333 name down there. But it will help us with some of our compliance with Title VI of the
 334 Civil Rights Act. So, if you would take a moment to fill that out before you leave today
 335 and drop that off. Even if you don't finish your comments tonight, if you could just fill
 336 that out real quick. Again, it's voluntary, but it will be helpful to us and we do not ask for
 337 your name. Okay, again here is my contact information. It's also in your handout.
 338
 339 We're going to run through the maps. Actually, I'm going to skip the fun part of our
 340 process here and we're going to run through the maps. Alright, let me see if I can make
 341 this work. I apologize. I thought I had this open and I closed it; if you'll bear with me for
 342 just a moment, while I jump in here.
 343
 344 Alright, this is the bridge on existing easement alternative, our preferred alternative. I
 345 think I'm going to have to get my...just a second. This is the one portion of our evening
 346 that I did not plan as well as I'd hoped. Alright, we'll make it work. I'll try not
 347 to...alright there we go. I'll try not to kill myself up here. It'll be more entertaining than
 348 you'd ever thought you'd have in a hearing wouldn't it? That's not what I want to see on
 349 our Facebook page is a picture of me on my backside.
 350
 351 Okay, so we're going to run through this really quickly. I will start on the north side of
 352 this. Look away for a second while I zip over here. Alright, I'll kind of go through some
 353 of the colors that you see here as we go through. I'm not going to go into a lot of detail.
 354 You can look at it again later if you'd like. And these are the two maps that we have up
 355 here. If you came to our open houses, this is what you saw earlier. And this is the option
 356 over here to your right.
 357
 358 And we start here in the Refuge. And what you can see...I'll zoom in a little bit more so
 359 maybe you all can see. Yeah, that's good. Okay, so what you can see with this alternative
 360 and why I wanted to zoom in on this a little bit more is the yellow at the top will be the
 361 temporary road that we build first. So, we'll build a temporary road on that side of just
 362 adjacent to the existing road. And that will allow us to construct the bridge, but we can
 363 maintain traffic during construction.
 364
 365 And you'll see the...and I'll grab my pointer real quick. So, you can see the temporary
 366 here and this is the beginning of the bridge, which is in red. So, the bridge is in red. And

367 that will follow along southward generally following the existing road into Rodanthe.
368 This is the edge of the Refuge here.
369
370 And then what you'll notice is in addition to the red bridge, there's a yellow road. Yellow
371 is new pavement. So, it's new asphalt new pavement. And what you'll notice on each
372 side is that temporary road becomes two service roads, a one-way service road in each
373 direction on either side of the bridge.
374
375 And here you'll see a turnaround that allows you to turn around, because everything
376 that's hatched will be removed after construction is over. So, all that road will be
377 removed after construction is completed.
378
379 And then here at Cross of Honor, there's another area to turn around. So, you can go
380 under the bridge in both of those locations to turn around, because you just have one-way
381 access on each of those roads.
382
383 And then, how do you get on those roads? Right here, this is where the bridge comes
384 back. It will be in this area of 17.5-feet of clearance underneath the bridge from the land
385 so that cars and trucks and stuff can get under it in those turnarounds. And at this point is
386 where the bridges come back down and kind of lands against existing ground. And then
387 you have an intersection right here that will give you access to those service roads. And
388 that is generally the end of that option. Okay, so that's a brief overview of that one.
389
390 And we'll run through the new location alternative as well. Alright, look away for a
391 moment. I don't want anybody getting dizzy. Okay, here we go. This is the beginning of
392 the new location option. And you see the bridge begins and starts to turn. It starts at
393 existing ground and then goes up into the air and continues along. This one is a little
394 harder because it doesn't go straight.
395
396 But it continues out into the sound and you're not really going to see a whole lot until we
397 get to the other end so let's zip on over here to the other side into Rodanthe where it
398 curves back around. It comes back and lands just south of America Drive. And you have
399 another intersection. And everything you see in yellow is new pavement. And everything
400 that is hatched is pavement that's removed. So, what you'll end up with is this is an
401 access road. This part at that point, it was NC 12 is an access road for the properties in
402 that area. And NC 12 will continue south.
403
404 So, going back over here to give you an idea of what's going on in these neighborhoods
405 with existing NC 12, you can see the yellow there. That is an end of the road. That's a
406 little what we call a "turnaround". That's a little spot where you turn around. That will
407 be sort of a dead end there. And the gray hatching is pavement that's going to be
408 removed. So, as I mentioned earlier, all the pavement that is on existing NC 12 with this
409 particular option all that pavement will be removed. And that's just a general overview of
410 the project. That took a little longer than I'd hoped, but I hope that was helpful.
411

412 Okay, now comes the most important part. This is where we ask folks to come and speak.
413 And we had a lot of folks that signed up. A gain, excuse me, I'll go through this list and
414 we've got a good number of folks so, certainly let's hear all of your comments. But if you
415 could keep your comments to about 5 minutes or so, that would be great. And then that
416 would give everybody an opportunity to speak.
417
418 Then if you have additional things and you want to come up and you want to say, come
419 up at the end and continue or finish your discussion. I don't want to cut anybody off. But
420 if you could, please limit them to about 5 minutes because we do have quite a few folks
421 signed up.
422
423 And when I'm finished with this list anyone that's here that would like to speak that
424 didn't sign up is welcome to come up and I'll call you up. I do ask that you state your
425 name and address for the record when you come up here and please do speak into the
426 microphone. And I'll try to make sure...you'll have to lean in a little bit. I'll pull it down
427 a little so that you don't have to lean in too much. We want to make sure that your peers
428 can hear you as well as the recording.
429
430 And a colleague of mine and I'm kind of stealing from him likes to say that we only have
431 one rule and that's the "golden rule". You know, treat others as you would want them to
432 treat you. So, let's be respectful for everybody even if they have diverging opinions. And
433 this is not a debate. This is an opportunity for comments. So, please come to the
434 microphone so we can record your comments. If you have something to say about what
435 somebody else said, you can come up later and have your opportunity as well. But we do
436 want to keep this as a civil thing and you guys do a great job of that so I'm not worried
437 about that.
438
439 Okay, the first person that signed up is Janet Kligge and then following that is Wes
440 Hutchinson. And please do be careful coming down here. Let me move this so that wires
441 are out of the way. And please do be careful coming down these steps. Give me just a
442 second.
443
444 Janet Kligge: Okay.
445
446 Facilitator: The floor is yours.
447
448 Janet Kligge: My name is Janet Kligge. Our house is on Blue Sea Road in Mirlo
449 Beach. Aside from the personal impact to our house, and our guests, and our real estate
450 value, I have other concerns. We won't be looking at a graceful bridge out in the sound.
451 We'll be looking at the broad side of a bridge with no ocean view.
452
453 But my concerns in this and I tried to ask questions this afternoon and got no answers.
454 I'm concerned about the environmental impact of the area, a very fragile place; one of the
455 most fragile places on the island with the surf is really high, and what the piles are going
456 to do to the stability of that area. Is it going to create erosion of a much more rapid rate
457 than nature will allow?

458 My second question is I wanted sighting of any other bridges that have been built in the
459 sound...I mean in the ocean that is so dynamic with the waves as high as they get. And
460 nobody could give me an answer. Apparently, no bridges have been built in the ocean so
461 far. Yet, the engineer kept telling me I know we can do it; I know we can do it. But I kept
462 saying how do you know we can do it if there are no examples of this being done yet? So,
463 those are my concerns. Those are questions that I'd like answered. Thank you.
464
465 Facilitator: Thank you Mrs. Kligge and the next one after Mr. Hutchinson is
466 Tom Kligge.
467
468 Wes Hutchinson: I am Wes Hutchinson and my property is on 23002 Cross
469 of Honor Way, which is right in the middle of the island and right up next to the Refuge.
470 I've had that property since 2001. And so I personally observed all of the events that have
471 torn up NC 12 in the past 13 years and I spend about 50 days out of each year there. I
472 walk on the beach every day I'm there. I surf whenever I can. And so I have observed
473 exactly this beach and our visitors all year round for a long time so, that's where my
474 thoughts are coming from.
475
476 Also, the Environmental Assessment if you haven't, seriously, read it. It's short. It's not
477 like the Environmental Impact Statement, which is like 100,000 pages and you can't
478 figure it out. I think that it's worth actually reading the Environmental Assessment. You
479 just download it or go to one of these locations. When I read it a couple of things stood
480 out. Some of them are things I've heard of before. I don't think any of these really made
481 it onto the slide show.
482
483 The first couple are about the bridge on the current easement. And the one that really
484 surprised that I never thought of is there's a section that says that bridge will increase
485 safety hazards for ocean swimmers and surfers. And the more I thought about it having
486 been on that stretch of land a lot and observed the dumb things that people do and the
487 power of those waves, I actually think that loss of human life and injury as that bridge is
488 going to kind of be on the beach and then in the surf and literally on the sand bar, hard
489 concrete structures. I think it's not getting enough attention. And you know we have to do
490 trade-offs, but you can decide for yourself how much a human life is worth.
491
492 Beyond that as I run through my list, again this is mainly pertaining to the bridge under
493 current easement. NCDOT put together a panel of coastal science experts they relied on
494 when they were evaluating a lot of these options particularly nourishment. But also, when
495 they construct bridges, they've been talking to these guys for 10 or 15 years. All of those
496 people are against and are on record as being against the currently preferred alternative,
497 which is a bridge on the current assessment; because it will be on the beach and in the
498 surf very rapidly.
499
500 And then I think common sense tells you that the beach won't be a beach as we know it.
501 It'll be 2-miles of I don't know what, a parking garage with the ocean under it. And that's
502 off that one bridge option.
503

504 Now, I'll quickly say for both bridges, and a lot of people pointed this out, will cause
505 serious economic harm. There are about 150 homes there. Those people will be paying
506 \$100,000 each in lost property value affectively contributing that to the greater good.
507 Those property values will plummet. The closer you are it'll just be in the toilet. And
508 that's with both bridges. The closer you are you're in trouble.
509
510 And then also those bridges mean there's going to be no protection for all of northern
511 Rodanthe. All of those homes will be left to erosion and almost more seriously, inlet
512 formation. If we get a serious inlet like we did...if Irene type inlets became a real inlet,
513 they are going to move south and they're just going to wipe out everything. And some of
514 these coastal science experts say it goes farthest from here. So, it's uncertain. We don't
515 know what's going to happen, but you want to visualize I think what's going to happen.
516
517 The final point I'll make and then I'm done is they've ruled out sand nourishment, which
518 is the traditional solution to this problem everywhere else on the east coast. We're going
519 to get \$21 million of sand dumped on that beach and we'll actually know the answer of
520 about how cost effective that approach is in about a year or two. And I think we all want
521 a permanent solution. We want a fast one, but this is a 50 to 100-year decision. And I
522 think we also don't want to see it screwed up. Thanks.
523
524 Facilitator: Thank you. The next one was Tom Kligge and then Scott Caldwell
525 will follow him.
526
527 Tom Kligge: I am Tom Kligge and Wes I think did a great job pointing out some
528 of the concerns that we all have. I wanted to be a little bit more personal since I am a
529 homeowner.
530
531 Facilitator: Can you hear in the back? I'm sorry. Can you hear him in the
532 back? Okay, I'm just checking. He's a little taller than I am. I just wanted to make sure
533 we got him. Thank you. Sorry to interrupt.
534
535 Tom Kligge: The sights from the decks are so beautiful. I can't wait to come
536 back next year. We had nearly perfect weather so; we had beautiful views of the ocean.
537
538 We usually choose a different house each year, but in this case we had to come back here
539 again. Views from the deck are amazing.
540
541 That's why people come to our homes. They rent our homes. I'm sure every house in
542 northern Rodanthe is probably 90% dependent on rental income. It pays their taxes, their
543 mortgages, and their insurance. And these are all going to be completely wiped out
544 because we won't have the views anymore, which is what northern Rodanthe, is mostly
545 known for and what we depend on.
546
547 We bought our house in 2011. I spent my life savings on it and we thought, you know,
548 maybe some day Mother Nature would take it away, but I never expected the Department
549 of Transportation to destroy it. I think that a lot of people make these decisions

550 sometimes aren't completely aware of the impact that it's going to have on the area that
551 they're dealing with, because they don't live there. So, I wanted to touch base on that a
552 little bit.

553 As Wes touched on briefly, it's going to devalue all the homes in northern Rodanthe,
554 particularly those right along the existing easement. And as I said, people depend upon
555 the rental incomes and that's going to be wiped out. That's pretty much it I guess. There
556 are a lot of homes affected by this. There are over 100 homes that will be affected, some
557 more than others.

558 And I was hoping to get some answers on whether or not compensation would be
559 budgeted in for that. And the answers that I've received was no. There will be no
560 compensation unless they are acquiring property off of you. They completely ignored the
561 impact of the loss of the aesthetics and the mystique that we now have that will be
562 destroyed.

563 Facilitator: Thank you. Next on the list is Scott Caldwell followed by Bradley
564 Payne.

565 Scott Caldwell: Thank you for the time. I appreciate all the DOT personnel
566 and our elected officials for allowing us this time to speak and listening to what all we
567 have to say, much appreciate that.

568 My address is 57261 Eagle Pass Road in Hatteras, but I'm here actually representing
569 Island Convenience in Rodanthe, which if you all were at the earlier meeting, both of
570 these plans land right in the middle of our property. So, it obviously affects us too. I have
571 some pros and cons and I have some cons here on the existing right-of-way, which of
572 course if you saw the map that he showed, it ends right there before our business. It has
573 some big exiting type roads. It basically takes our business out of there. Of course, I
574 know that they can move the business back, but I have some pros and cons that will not
575 make that reasonable.

576 The cons of the existing right-of-way, this alternative will seriously impact the future of
577 Island Convenience Store and adjacent properties. It will cause the closure of the entire
578 31 year old Island Convenience Store, which has fuel, canopies, propane tanks, parking
579 and pavement will be destroyed. Moving it further west will cause municipal expense in
580 addition to related legal issues, licenses, and permits required.

581 The community relies heavily on Island Convenience as it is the only store that stays
582 open year round in the Villages of Rodanthe and Waves-Salvo. It is a valuable
583 community asset. Approximately 35 people per year will lose their income, as that we
584 hire summer time help as well as year round help. Customers would be denied direct
585 access to Island Convenience without having to navigate what we thought first was an
586 exit ramp, but as you can see by the presentation it was quite a confusing thing to get on
587 and off the road and to get north or south needless to say.

596 The Hot Tuna, of course, is just the adjacent building and the garage that's attached to
597 that building will have to be torn down, thereby losing the building to generate vehicle
598 repair, commercial rental income. The building will not be able to be moved. That
599 building cannot be moved. Additional commercial residential properties will be torn
600 down causing an additional loss of revenue.

601 And according to the 2060 projection line, I don't think you touched on the projected
602 2060 shoreline, which completely takes in the right-of-way bridge. I don't think they
603 showed that one, but we saw that at the meeting in Rodanthe. But basically, that whole
604 bridge will be in the Atlantic Ocean according to their 2060 projected shoreline.

605 And of course, coming down the right-of-way, I feel like that would be a major eye sore
606 in the Village of Rodanthe. A bridge coming through the sound I think would be a much
607 more attractive bridge. And of course, touching on what some other people said, I believe
608 that a bridge coming down the right-of-way would have to withstand ocean currents and
609 the waves and would obviously have to be built bigger and stronger and I would suspect
610 cost more.

611 I believe everybody in this room will agree that the ocean is moving to the western. I
612 don't think nobody is going to argue about that. And I think building a bridge in the
613 existing right-of-way is not a long-term solution at all.

614 We at Island Convenience strongly endorse a sound alternative bridge. And the truth is
615 that if this alternative is selected, the difficulties that I've just described will be
616 insurmountable. The Island Convenience will close down permanently. The livelihoods
617 of many people will be affected as would the entire fabric of the community, which has
618 supported us through good times and the bad times through all these years.

619 And some pros I have as you can tell we definitely would like a sound approach. For my
620 point of view, once again the bridge coming through the Refuge and approaching into the
621 sound is a much more attractive better looking project in my opinion. And the traffic
622 pattern would be much more fluid. They really didn't show you a good look at that, but
623 it's much more fluid traffic pattern with a sound approach.

624 And you know with the sound approach we would lose much more. This alternative, we
625 would lose much more than we would the other way, but we would still be able to run
626 and maintain the Island Convenience Store, which we strongly endorse the sound
627 alternative plan, which would maintain our ability to retain our main source of income,
628 which is the Island Convenience Store. I appreciate the time to speak. Thank you.

629 Facilitator: Thank you. Next is Bradley Payne followed by Warren Judge.

630 Bradley Payne: Thank you. As Drew stated, my name is Bradley Payne.
631 I'm an architect, who owns a property on just outside the existing right-of-way on
632 Seagull Street. I also have another property just south of there and so I'm obviously

641 affected from that standpoint, from a personal standpoint. But I believe there's a much,
642 much larger issue here.

643

644 And as Mrs. Kligge and some others have already mentioned this bridge if built in the
645 existing right-of-way is undoubtedly going to be subjected to wave action on a 24/7 basis.
646 If history holds true with respect to what happens to the homes on Mirolo Beach, this
647 bridge within the existing right-of-way is going to be required to withstand the impact of
648 anywhere from 15 to 25 homes, because when the ocean takes them, it takes them
649 directly west and it's going to be coming into the piers.

650

651 My home on Seagull Street is in excess of 200 tons. So, we're talking about 400,000
652 pound impact on those bridge piers if in fact my home would be taken in its entirety into
653 the bridge. It's going to be obviously subject to storm surge, which can range 20 to 25-
654 feet, possible further than that.

655

656 And in my opinion, you're going to be putting all of our eggs in one basket because if we
657 have a breach, such as with the new inlet, or we have a smaller breach which NCDOT
658 has done a wonderful job in the past of being able to fill in a very reasonable amount of
659 time; get the pavement back, make use of the ferry system on a limited basis, but then get
660 all of Hatteras Island residents and tourists back in business. If we were to have a bridge
661 such as this damaged, I would suspect that the use of the ferry service would be much
662 longer just because of what it would take to repair a bridge of this nature.

663

664 It also, you know, we're living in a very changing world. Anytime you have a bridge, you
665 have one-way in. We obviously have bridges already. We create another one, we give
666 you know a potential for another opportunity for terrorism. Terrorists like bridges, they
667 don't like beaches. So, even though it's on the outstretches of things, it's a possibility.

668

669 But what concerns me most is that if this option is taken, then I believe that everybody in
670 this room certainly the engineers that I've discussed the projects with up in Rodanthe, a
671 short time ago, agreed that eventually this bridge would be in the ocean. And what's
672 going to happen is that the erosion rate as what such some of the others have mentioned
673 is going to continue and so the long story is short is that we are in affect sacrificing the
674 community.

675

676 We're sacrificing Mirolo Beach. We're potentially sacrificing a great deal of Rodanthe and
677 all of that just to do what the engineers say is a long-term solution. If either of these
678 bridges is built, inevitably we're probably sacrificing those communities. If we're willing
679 to do that, what community is going to be next? Is it going to come down and it's going to
680 be Buxton?

681

682 You know, I'm not a permanent resident of this island. I can't claim that. But from the
683 time that I've been here, the owner of, I believe, it's Cape Hatteras Motel have almost
684 single handedly protected Highway 12 with his own funds just in continually rebuilding
685 dunes behind his hotel. And I would say that I would be willing to surmise that if we
686 were willing to risk Rodanthe in the Mirolo Beach area the next step would be risking

687 Buxton and then at what point are we simply going to turn the tourism industry away
688 from this gorgeous and beautiful island that all of us love and want to come to, thank you.

689

690 Facilitator: Thank you. Our next speaker will be Warren Judge followed Dave
691 Dawson.

692

693 Warren Judge: Good evening. Thank you Drew. And thank you to all the DOT
694 people that are here tonight and last night in Ocracoke and tomorrow night in Manteo, we
695 appreciate that. Appreciate the opportunity to let the people come out and speak and all
696 due respect to all of our engineers and experts in here tonight. Please listen to our people.
697 Folks that live with it day in and day out are experts from the school of hard knocks,
698 believe you me.

699

700 I did want to recognize Stan White. Stan is a former County Commissioner, a former
701 Chairman of the County Commission, former State Senator, and DOT Board Member.
702 And Stan is a wealth of knowledge and expertise for all of us. And Stan, I appreciate you
703 being here tonight and we'll certainly look to your guidance in helping us through these
704 next several years.

705

706 We've heard good arguments for the different alternatives that DOT has presented and
707 Bobby Lewis thank you and the secretary. You all are so good to us. I know that you all
708 have spent a lot of time doing this. This has been a lot of years that we have been looking
709 at these maps. And this has been hastened because of Hurricane Irene.

710

711 Dare County has got a huge challenge. You know we're an old society. There's nothing
712 different for the people of Dare County than there is any other place in the state. We're a
713 mobile society. We get in our cars and we travel. It means nothing to us to get in our car
714 if we live in Frisco and drive up to Nags Head or to Manteo to run errands or go to eat.
715 It's our children, our school system, we have a full school system down here. But they
716 interact with the schools up north of our inlet over on Roanoke Island and certainly in
717 other parts of northeast North Carolina.

718

719 That road is an extremely important part to our society, to how we live our lives every
720 day. It's also a major connector. The one ground connection we have to advance medical
721 services, health, safety, life, and welfare. We have outstanding medical personnel doctors
722 on this island. But it's limited. There are only so many of them. They do a great job
723 coming out all hours of the day and night and helping our people. But in times of trouble
724 and in times of great disease and great sicknesses and illnesses, we do need to make
725 ourselves available to get to either the hospital up in Nags Head or may be further away
726 in the west end of the state of North Carolina. So, that road is very valuable to us. It's
727 how we deliver county services to our people on Hatteras Island.

728

729 Economically speaking, Hatteras Island is 17% of our annual earned tax base, a huge part
730 of the revenue that comes into the county government. It represents about 25% of the
731 commerce in Dare County. And we have an extreme vested interest that Hatteras Island
732 stays connected. That the road works, the bridges work, and that the commerce of Dare

733 County can proceed on Hatteras Island, very important. We hear from these folks that
734 have invested in our economy by buying homes and their homes become a small business
735 in of itself. I appreciate that. I appreciate what they do and I appreciate what they mean to
736 the county. And certainly from Scott Island Convenience, which is a major part of the
737 business community in Rodanthe Waves-Salvo.

738

739 I don't...I am not envious of you folks in DOT that have to make a final decision because
740 these are extremely important human facts that you need to take into consideration.
741 Beach nourishment works. We have an outstanding example of that in Nags Head. The
742 return on investment up there has been extremely well; the protection that it has provided
743 that town now, going into its third year.

744

745 We have three other towns in Dare County that are well under way of designing beach
746 nourishment projects to protect their ocean front now. They wind up protecting houses,
747 but what these four municipalities are doing are protecting NC12, protecting water lines,
748 protecting power lines, and they are protecting the very essence of their infrastructure in
749 their town so they can deliver services to their residents.

750

751 I strongly urge beach nourishment to be considered in conjunction with these projects.
752 I'm not here tonight to take a position on which bridge to build. We were here to listen. I
753 will tell you this, we need it done and we need it done now. We have suffered with
754 Hurricane Irene. We have suffered with Hurricane Sandy. We've had two Nor'easters.
755 They don't have to be hurricanes. The storm that we had back in March that brought
756 Secretary Taylor and the Governor down here the first week in March. And then the
757 storm that we had the end of September, the first of December, which moved enough
758 sand around bent 165 which caused closure to the bridge, the Bommer Bridge. So, we need
759 quick swift action.

760

761 We know that you all get handcuffed at times. We know that the special interest groups
762 create delays and obstructions to us, but please move as expeditiously as you can. Bring
763 these options forward, listen to our people tonight. Take all their comments into
764 consideration. Hopefully, the bids that are going to be open Friday will enable the Army
765 Corp to begin that project in Rodanthe to buy us some time. My good friend and
766 colleague, Allen Burrus, who is in the audience with us tonight, and Allen and I have
767 plead our Board of Commissioners to get involved in beach nourishment on Hatteras
768 Island.

769

770 We are looking at two projects, but that takes a long time to permit. And also we do have
771 limited funds. So, thank you for coming. Please everybody who's here tonight speak out
772 either up here in public comment or drop your comments as Drew has given you the
773 different options. We look forward to hearing from you. It is important to me, for Allen
774 to hear what you all think and feel and what you may think is best.

775

776 But at the end of the day this is a human issue. We need to keep safety, welfare, health,
777 and life our number one vision, our number item that we need to address. And we need to

778 keep that road connected and open at all times so that we can deliver the services. Thank
779 you.

780

781 Facilitator: Thank you. Our next speaker is Dave Dawson followed by Kyle
782 O'Neal.

783

784 Dave Dawson: I would like to start by clearing up some stuff I've been reading in
785 the News and Observer. Contrary to their reporting, not all of us are wealthy people using
786 Cape Hatteras as a playground. We do have some vacation houses on the island. These
787 houses are necessary to our very livelihood. The folks that vacation there shop in our
788 grocery stores, buy gas at our gas stations, tackle at our tackle shops, hamburgers at our
789 restaurants. So, let's quit painting these false pictures of who lives here.

790

791 I appreciate the effort of DOT. I know that all this engineering took a lot of work. But
792 quite frankly, I just don't believe the bridges answer the problem. That is not why visitors
793 come here. They come here to enjoy our beautiful beaches. And this idea of let nature
794 take its course or you can't fight Mother Nature, those are just excuses not to do anything.
795 Building these bridges costs a whole lot more money than nourishing beaches. I'm not
796 saying to fight Mother Nature, but there are programs out there now that you could work
797 with Mother Nature to stabilize beaches. It's being done all over the world just not North
798 Carolina and we need to do that. Without our beaches, we should all just start packing.
799 It's just simple as that. Thank you.

800

801 Facilitator: Thank you. Next if Kyle O'Neal followed by Jeff Dawson.

802

803 Kyle O'Neal: Yeah. I agree with everybody on the beach nourishment. You
804 know that would be the alternate choice for all us down there.

805

806 Facilitator: Please before you get started, if you don't mind, state your name
807 and address.

808

809 Kyle O'Neal: Oh, I'm sorry. My name is Kyle O'Neal and I am a resident of
810 Frisco, NC. I grew up in Rodanthe and Waves. My mother was born in Rodanthe, father
811 in Waves. So, I built Wes Hutchinson's house. I built the original Island Convenience.
812 So, I feel for both sides. Matt Midget that owned the land, as a matter of fact that was my
813 father's property originally, part of it the original self-service pumps down there. I got big
814 roots in Rodanthe.

815

816 But beach nourishment is what we all want; what we all need. We saw what happen after
817 Isabel when the storm came through there. There was nothing there. Before the storm, it
818 was washing under houses across from the civic center. It was terrible. We had all the
819 problems with environmentalists and everything to get the permits. They pumped sand in
820 there and pumped that in and nourished the beaches and then they shut it down real
821 quick. And the beaches today almost, I don't know, close to 10 years are better now than
822 they were before.

823

824 So, we know it works. It's working in Hatteras. And Hatteras looks...the beaches look
825 better now than they did. And I built ocean front before and right after Isabel. So and it's
826 twice as good now today. But we can't get that it don't look like. So, if we got to decide
827 on bridges, you know, what's best. Of course, the whole sound...
828
829 Facilitator: Please make sure you speak into the microphone. So, we can get
830 your...we want to make sure we get your comment.
831
832 Kyle O' Neal: Oh, I'm sorry.
833
834 Facilitator: That's okay.
835
836 Kyle O'Neal: I think they can hear me. But uh, the main thing is...
837
838 Facilitator: Well we need to make sure the recorder gets you.
839
840 Kyle O'Neal: Oh, I'm sorry.
841
842 Facilitator: That's the real thing. I want to make sure we record your
843 comments. Thanks.
844
845 Kyle O'Neal: I'm sorry. I'm very sorry.
846
847 Facilitator: Oh no, you're fine.
848
849 Kyle O'Neal: I appreciate everything that everybody is trying to do and I feel for
850 everybody, but like Dave, like they said, Buxton is getting it the worst. You know, if we,
851 you know, Carol and Dave what they've had to do and go through. And you know all this
852 is good when you build these bridges and if Buxton washes out, we can't get out of our
853 homes anyways. We can't even leave Buxton. We've seen it so many times over the years
854 and I feel worst for the Dillons and you know and the Dawsons and anybody because
855 there is no help there, and that is one of the most important spots on this island.
856
857 And it never gets talked about but these two bridges in Rodanthe, I mean, and the way
858 they're set up it's going to ruin. I'm getting ready to maybe go build a sound front house
859 up there in Mirlo Beach you know. It's going to ruin that for him. All the sound front
860 people, it's going to ruin it for them. Like you said on the ocean front, I feel it's just a
861 terrible eye sore, you know so. But we got to have something down here. We got to have
862 beach nourishment. It's not going to happen. We've got to have a bridge. One's going to
863 cost a lot more, the one in the sound. Yeah, it might, like for Scott...everybody's got
864 mixed decisions.
865
866 They're both going to be a bad thing for Rodanthe and I think that's no matter what
867 happens it's going to hurt a whole lot of people. But one's going to maybe take longer,
868 one's going to have ocean right on it. But if the ocean is going that fast, which we know
869 it is 13-feet in the air or whatsoever, all that's going to be gone anyway. You know, is that

870 bridge on the ocean; probably not. Is it going to stop anything? It is going to be like a
871 bulk head because it is going to be a bridge? You know bridges do things strange.
872
873 I know when Oregon Inlet was built when I was a little boy, you come from Nags Head,
874 you drove over that bridge, before the bridge you could turn right through the left side
875 and go under the bridge and a lot of stuff built out. I don't think that will happen on the
876 ocean front. So, I'm 100% for the nourishment. But I just don't think we're going to get it.
877
878 And as far as the sound side of the ocean front, you know the people that got the sound
879 fronts and they are going to look at the bridge. They might not think it's so pretty, you
880 know? And then the guys that own the ocean front, who wants that bridge there 17-foot
881 high? So, one you know is as bad as the other in that respect. It's just a bad situation and
882 I'm for the beach nourishment. But again one bridge is costing they say \$20 million
883 more, the one in the sound, than the other one. And it's going to be harder to build
884 probably over water.
885
886 So, it's pros and cons with both of them. So, that's all I got to say. I just really feel bad
887 for, you know, Buxton too now. We can't forget about that because that keeps us all
888 going up and down this road. The kids at the school they can't get to the school, you
889 know, Buxton is a big thing and I don't think that nobody ever focused on. I know we're
890 not here today to talk about Buxton. So, that's all I got to say.
891
892 Facilitator: Thank you sir. The next speaker is Jeff Dawson and that's the last
893 one on my list and we'll open it up to the floor.
894
895 Jeff Dawson: I'm Jeff Dawson as he said. And all I can say is wow. I am so, so
896 proud of all of you for being here right now. The whole community just came together
897 and said we want beach nourishment. I say beach stabilization. There are plenty of
898 technologies out there using geotextiles that will hold sand right where it is naturally and
899 creating no dredge sand necessary.
900
901 I thought I was going to get up here and be the only one preaching this. Holy cow, you're
902 awesome, you're awesome, you're awesome. I mean that's...how is everybody tonight?
903 No, I'm serious. I know it's cold and this a dreary time, but how is everybody tonight?
904 This is awesome, thank you so much.
905
906 I really don't need to say a whole lot other than it's proven. It's in the ground. They're
907 doing it in the Great Lakes. They're doing it in the Arabian Gulf. They're doing it in
908 Greece, I mean, why in the world are we not trying this; because we're not allowed to.
909 Why aren't we allowed to? Somebody made a rule saying we can't. Why not go after
910 that? We're trying to protect nature by building the beaches. You're giving the turtles and
911 birds a place to nest. They can't nest in the water. Building these bridges is as we I think
912 all agree is nonsense.
913
914 You're abandoning the entire ocean front. And you know what is going to happen to that
915 ocean front? You know what it's going to look like? It's not going to clean itself. It's

916 going to be this horrible uninhabitable disgusting mess with jagged pieces sticking out
917 every which way. No one is going to cast a fishing line in there. Certainly, no one is
918 going to go surfing in there. We're going to lose this island and build bridges to nowhere
919 at the tune of a billion dollars when we're all said and done.
920
921 Well, let's spend \$50 million, nourish a hot spot. Stabilize the hot spots with geosynthetic
922 materials. There is no reason we can't do this. Alright, has anyone seen the water? It
923 looks like chocolate. You know why it looks like that; because there is so much sand and
924 sediment already in our water. All we got to do is slow it down, get it to drop out, keep it
925 where it is. That's where the geotextiles come in. I represent a company that can do this.
926 It's plenty of engineers saying yes we can do this. Just let us be allowed to.
927
928 I know Senator Cook and Jerry Jennings and several others, you know, important figure
929 heads have all agree with me that we need to this. We are going to set up a meeting with
930 CAMA, Park Service, and everybody so they can't do this; because that's what happening
931 to us, you know the livelihood.
932
933 My family goes back four hundred years. It doesn't matter. It really doesn't. What's
934 important is people are there right now. You know, I'm a next generation native and don't
935 care. You know, yeah I do, but that's not the issue here. The issue is we're all being
936 abandoned. Like you said, Buxton, you know, the bridge plan used to have a plan going
937 from the Canadian Hole to Rocky Ronaldson. Now, they're talking bringing it into the
938 school. Does that not give anyone else the creeps? It's okay to talk up. I know I'm ranting,
939 but for real, like really.
940
941 We really have an opportunity to do something wonderful for this island. Think of what
942 Hatteras could be with long and stable beaches and no worrying. I mean our fall business
943 this year was horrible. Why, because for three years in a row you couldn't get here. Who
944 in the world is going to book a vacation knowing good and well that you are not allowed
945 to go there? Sometimes, I feel like I'm beating my head against the wall, but tonight
946 thank you so much for affirming that we are all in this together and we have all similar
947 outlooks on this. Bravo to this community. Thank you for so much.
948
949 And again, this is not the DOT's fault. They're handcufted by law, assuming there's no
950 hardened structure law or whatever. And these geotextiles aren't part of the structure.
951 They're substructures first of all, permeable under the existing law if done correctly. We
952 have fortified the entire, like literally from Canadian Hole to the Jevons for about \$15M,
953 not \$200 and some million, you know. And it's a permanent solution. You know these
954 bags, they bury themselves naturally. I won't get into science because who cares about
955 that. The fact is they work.
956
957 Bald Head in the Atlantic put in the geotextile material. Now, they did grow them and
958 this is different from what I am talking about, but the material was the same 15 years ago.
959 It's now better. They're still there. They've had I don't know how many hurricanes. They
960 haven't broken apart just dissolved or anything. There's a lot of naysaying, but you've got
961 to look at the real science not...look at the real facts. I mean, I'm so proud to be a

962 member of this community. Thank you so much for giving me the time to get up here and
963 speak and everything. And I won't rant anymore. Knowing that we are all in it together
964 warms my heart. Thank you very much.
965
966 Facilitator: Thank you. Alright, with that that's all the folks who have signed
967 up to speak, but I will now give an opportunity for folks to speak who either did not sign
968 up or had anything additional to say. So, if you kind of raise your hand, we'll start and
969 then we'll give everybody else an opportunity. And again, please state your name and
970 address for the record please. Thank you.
971
972 Allen Burrus: I'm Allen Burrus, Hatteras Village. I would like to thank
973 everybody for being here. The key is access. Can't rent homes, can't do anything without
974 it, no doubt to be a really big projects. But if you read the News and Observer, you'll see
975 that is becoming more difficult every day. We're working hard to get some dredging in
976 Buxton as Commissioner and in Rodanthe in some parts there. It's going to take us three
977 years or end of 2015, 2016 just if everything goes well. So, those are things I don't think
978 that we can sit around and wait on.
979
980 I think we need a bridge. I think we need to build one that we can build, one that we can
981 permit. And we need to get it done and move on. If not, ain't no need worrying about
982 trying to get other things done; simply because there won't be anybody here. There won't
983 be anybody coming. We can't use ferries. They won't work. We can't get big draft ferries
984 into any of our harbors. Can't keep the harbors open to keep those things in that they keep
985 talking about. It won't work.
986
987 So, bridges are going to be our answer. I don't necessarily like that answer, but it is what
988 is. We've got to get going. And we need these folks to build these bridges today not
989 yesterday. And we need to do it as quick as possible. And I just ask very, very clearly
990 build what you can get permits for. Let's not wait around 10, 15 years messing with
991 permits. We've done that, seen that and that's too difficult. Let's move forward. Thank
992 you.
993
994 Jeff Dawson: Awesome.
995
996 Facilitator: Alright, is there anyone else who would like to speak? If you
997 would just raise your hand and I'll...any other folks who would like to speak? Okay, well
998 with that if that's it, then I want to thank you very much for coming tonight. I do
999 appreciate it. Please drive safely on the way home. And this hearing is adjourned.
1000
1001 Hearing Adjourned.
1002
1003 Drew Joyner, Facilitator
1004 Public Involvement Group
1005 January 8, 2014
1006
1007 Typed by Johnetta Perry

OFFICIAL PUBLIC HEARING TRANSCRIPT

**NC 12 – Rodanthe Breach Long-Term Improvements
Bonner Bridge – Phase IIb
TIP Project No. B-2500**

**Dare County Administration Building
954 Marshall Collins Drive, Manteo**

January 9, 2014

Alright, excuse me, I'd like to welcome you to the NC 12 Rodanthe Breach Long-Term Improvements Public Hearings. My name is Drew Joyner. I work in the Department of Transportation. I'll be facilitating this hearing this evening.

A couple of things first, in case you didn't notice before, bathrooms are just outside. Emergency exits are in that direction or you could probably head down the hall there. But they're over here. So, we've got emergency exits. Let's hope we don't have to use those. Mobile phones, if you have a phone, cut it off please or put it on vibrate. I'm sure you enjoy your latest ringtone, but other's may not. And nothing more embarrassing than having that go off in the middle of a meeting. Not that that's ever happened to me.

I do want to recognize a couple of folks before we get started. We have a few folks that have joined us and I want to recognize those. Paul Tine, State Representative Paul Tine is here. Warren Judge, the Chairman of the County Commissioners is here. Malcolm Fearing, who is the Board of Transportation Member that represents your region, is here today.

Jerry Jennings with NCDOT, he's the Division Engineer, which covers this area. Beth Smyre is the Project Manager for NCDOT for this project development study and she may be in the back still helping break stuff down. Gary Lovering with our NCDOT Roadway Design is with our design group. And then Parsons Brinckerhoff is the consulting firm that is working on this project and assisting us with project development studies and they have staff here as well.

There are a lot other DOT Staff that has been helping us out tonight and I definitely want to thank them for all of their hard work in putting this together. They've done a great job in helping us out. And last but certainly not least, Ron Lucas is here with Federal Highway Administration, our partner in this. Are there any other state or local representatives that I've missed or you might have just wandered in that I didn't notice that would like to be recognized? I want to make sure that I don't miss anybody.

44 Okay, real quickly I'll run through the agenda of the hearing and how we're going to
45 proceed tonight. First of all, did everyone get a handout when you came in and got signed
46 up? If not, raise your hands and we'll make sure to get you one, okay.

47 First thing we're going to do is sort of run through the handout. I'm not going to read it
48 verbatim, but I'm going to cover the key details as we go through this. And then I'm
49 going to run through the maps real quickly and just give you some of the key points to
50 note out of the maps. And then the most important part of the hearing and really the
51 reason that we're here and that is to get your comments, to hear from you, the citizens
52 about what you think on this project.

53 I will note that everything is recorded. So, there will be a written transcript of this that
54 will be available as part of the project record. And I'll also note that we haven't
55 advertised it yet, but we'll have a video of my part of the presentation from last night's
56 hearing. So, if you know anybody that wanted to come out and missed it or you want to
57 go back and catch up on some stuff or you've wondered about something you might have
58 missed, this presentation of the same thing that I'm doing tonight I did last night. We've
59 recorded that and that will be on DOT YouTube's site along with some other
60 information. So, check DOT's website and Facebook and that sort of thing.

61 Okay, so again we're here to talk about the NC 12 Rodanthe Breach Long-Term
62 Improvements. And you see the two detailed study alternatives and I'll go into a little
63 more detail on those shortly.

64 We've had informal open houses and formal public hearings for the project already in
65 Ocracoke. That was the open house. And then an open house in Rodanthe yesterday. And
66 had an opportunity to stop in the back and see that and look at things up close and get
67 some one-on-one attention from us. Then of course, tonight is the last formal hearing for
68 this project. And there will be an opportunity to provide written or oral comments.

69 So, really *why are we here?* I kind of alluded to this, the most important part of our
70 public hearing is hearing from you, to receive your comments and concerns about this
71 proposed improvement. And there are lots of ways that we can get those comments from
72 you. You can certainly speak tonight.

73 But there's also a *comment sheet* on the back of your handout, the very last sheet. Just
74 tear it off, fill it out, you can leave it with us tonight. There will be a box on the way out.
75 You can drop it off. If you want to spend some time and really work on it a little bit more,
76 you can mail it in. You can also email comments to me. They don't have to be in this
77 format. You can fax comments or again, you can speak tonight. We did have a sign up
78 sheet for speakers. We didn't get a lot of speakers, but if you're so moved when I get an
79 opportunity, we'll go through the folks that did sign up and then we'll open it to the floor
80 for anybody else who might want to come up and speak and then give us your comments
81 and concerns.

90 And I will note that on the comment sheet we ask your preference of the alternatives, but
91 we also want to know why, because the details are really important to us. The more we
92 know about what you like and didn't like, what concerns you have, the more detail you
93 can give us, the better this project is going to be for you. We can select the right
94 alternative and we can make adjustments to the alternatives so that they can be as good as
95 they can be. So, please do give us some good detailed comments. And they are accepted,
96 as you see here, until January 24th. So, we do need to get those comments in by January
97 24th.

98
99 So, **what do we do with the input?** The DOT Project Team reviews all of the comments
100 that we get and then shares them with our state and federal agency partners. And most of
101 the issues are resolved at that time before we move forward. And I am following along
102 the hearing handout. So, there's much more detail in the handout than what I'm going
103 through here.

104
105 And in fact, let me back up just a second because I realized I skipped something while
106 not looking at a handout here. On page 1, we do talk about the fact that we completed an
107 Environmental Assessment and released that. And that Environmental Assessment is a
108 document that includes all of the studies that we've done for this project up until this
109 point and our decision making. And we're looking for comments on that as well.

110
111 Copies of the document as well as the maps that you see here are available in addition to
112 being available on our website, which is there on page 1. It's also been available at those
113 locations that shown on page 1 in your handout.

114
115 So, then returning to our slide show here, what are our **next steps?** Again, we're going to
116 review and consider all of the comments that we have. We're going to select the
117 alternative for construction. Then we are going to determine if there are any significant
118 new impacts. This is Phase IIb of the Bonner Bridge Project. Phase I is Bonner Bridge
119 itself. Phase IIa is the Pea Island Breach area, which is around the temporary bridge that
120 is out there. And we were out here in March timeframe or so of last year for the hearings
121 for that project. And then this will be Phase IIb. So, this is sort of the third piece of the
122 project. So, they're all tied together in some way.

123
124 And they're all covered under sort of the same heading of the environmental document,
125 which is why we look at if there are any new significant impacts. And if so, we would
126 issue a Supplemental Final Environmental Impact Statement. If there are no new
127 significant impacts, then we would issue a new Record of Decision that covered Phase
128 IIb and you see spring of 2014 there. And then we would award a design-build contract in
129 late spring of 2014.

130
131 So, again this is the project, long-term solution for this section of NC 12, the southern
132 portion of Pea Island National Wildlife Refuge in Northern Rodanthe. It is designed to
133 last at least 50 years. And again, this is Phase IIb of Bonner Bridge.

134

135 The two alternatives that you see here is a bridge on new location, which is the red option
136 here. And just for reference, this is Rodanthe and north is in this direction. So, you're in
137 the Pea Island National Wildlife Refuge and then here is the boundary of the Refuge and
138 going into Rodanthe. So, here you have new location option.

139
140 And the bridge within existing NC 12 easement and it generally will follow the existing
141 NC 12. It's not exactly, but it's within the easement. So, it will generally follow that. So,
142 going into a little more detail on the bridge within existing NC 12 easement, which is the
143 blue line you saw a minute ago. And you'll see some visualizations that we've put
144 together in some of these slides that will give you an idea of what they look like and they
145 were available at our open house as well.

146
147 It's a 2.3-mile long bridge and it accounts for future breaches and erosion. Existing NC
148 12 will be removed within the Refuge. And then within Rodanthe, one-way service roads
149 will provide property access.

150
151 And I'll show that a little bit more when I pull up the maps and go through that a little bit
152 in more detail. And then we would be maintaining traffic on NC12 through construction.
153 This is the same on both alternatives. We will do everything we can to maintain traffic.
154 There will be different closures here and there as they are doing some construction
155 phasing, but the contractor will be asked to keep those to a minimum and then maintain
156 traffic throughout construction.

157
158 So, **what are the impacts** in the Rodanthe area with this alternative? There will be
159 residential and business relocations and you see a visualization of what this might look
160 like near Corbina Drive on NC12 looking northward. We would use frontage roads for
161 local access and that is what you see here. The one-way frontage road that will give you
162 access to local streets.

163
164 There are also visual impacts. Then there are impacts to the Refuge as well. There will
165 be visual impacts to the Refuge with the new bridge, loss of direct road access to the
166 Refuge. It will be on a bridge throughout the entire project area. So, that would cut off your
167 direct access to the Refuge as you just can't pull off to the side of the road like you can
168 now and get out.

169
170 The other alternative we have is bridge on new location alternative and you see a
171 visualization that it might look like looking southward. It's a 2.6-mile long bridge. Like
172 the other one, it accounts for future erosion and breaches within this area. Within the
173 Refuge, existing NC12 pavement would be removed. And in Rodanthe, NC12 will remain
174 for property access. So, there is a portion of NC12 that would stay in place and I'll show
175 you that in more detail on the maps. And then as I mentioned before, we would be
176 looking to maintain traffic throughout construction.

177
178 So, what kinds of impacts are there in Rodanthe? You got residential and business
179 relocations, visual impacts for sound side homes. And you can see here, this is a
180 visualization of what it might look like at the sound end of Corbina Drive looking west.

181 And there might be an effect on recreation of Pamlico Sound and effects on habitat
 182 within Pamlico Sound.
 183
 184 And impacts on the Refuge, 2.79 acres of new NC12 easement will be taken, but 19.27
 185 acres of NC12 easement will be returned to the Refuge. And then there would be a loss of
 186 direct road access to the Refuge for 1.8-miles as we mentioned earlier.
 187
 188 So, DOT's preferred alternative, is the bridge within existing NC12 easement. And this is
 189 DOT's preferred alternative, but this is why we want to hear from you today; because
 190 nothing is set in stone yet. So, we really want to hear from everybody what your opinion
 191 is, and pros and cons, and details about what you like and don't like about the different
 192 options.
 193
 194 So, some of the reasoning behind our selection of this preferred alternative is that there is
 195 no new permanent NC12 easement in the Refuge. We would be using existing DOT
 196 easement. It avoids impacts to Pamlico Sound. And again, the final decision will consider
 197 public input. So, it goes back to letting us know what you think. So, I kind of covered all
 198 that already.
 199
 200 Some other options were looked at. These two were the options that were looked at for
 201 further studies. So, we did a detailed study on these alternatives. Some other alternatives
 202 were looked at and eliminated earlier before we got into a little more detail. And those 2,
 203 you'll see 4 alternatives.
 204
 205 The first 2, the blue and the red you've already seen. The yellow one is a bridge within
 206 existing NC12 easement combined with beach nourishment. And if you'll note the yellow
 207 is all on- bridge until you get about here. It stops short of where the existing or the DOT
 208 preferred alternative is. So, it stops short and you would combine this bridge with beach
 209 nourishment in this area where the yellow is.
 210
 211 And then the other alternative that was eliminated from further study is this purple
 212 alternative, which is beach nourishment alone which included 2 new 20-foot high dunes
 213 and beach nourishment in this purple area. So, those were 2 other alternatives that we
 214 looked at earlier, but were eliminated from further study.
 215
 216 And the details on those, on the rationale behind eliminating those, and I'm not going to
 217 into all that, but it is on page 4 of your...let me make sure that is right. Nope, it's not on page
 218 4; try again, page 6; page 6 of your handout. There's a little more detail if you like that
 219 and certainly there is more detail in our Environmental Assessment as well.
 220
 221 So, let's talk a little bit about **project cost, the funding, and the schedule**. There we go.
 222 So, the bridge within existing NC 12 easement costs between \$187.5 and \$215.5 million.
 223 The bridge on new location is between \$203.3 and \$236.3 million. And these values
 224 include estimated cost for construction, right-of-way acquisition, relocation, and utility
 225 relocation. And the reason you've got a range in there is it reflects the range of possible
 226 structure types and construction techniques.

227
 228 This project is going to be Let. It's going to be contracted out. That's what we call
 229 "design-build", which means the same project team is going to do the final design on the
 230 project and buy the right-of-way and do the construction. So, they will do all of that and
 231 that gives them some flexibility to look at different construction techniques and
 232 construction phasing and that sort of thing. So, you have a little bit of range that gives
 233 them a buffer there. So, it gives you a general idea of what the funding would look like.
 234
 235 There's federal and state funding. This is 80% federal; 20% state funding. Also note that
 236 we've been told that this may be eligible for reimbursement under the Federal Emergency
 237 Relief Funding, estimates that about 30% could be funded with that.
 238
 239 Before I touch on right-of-way acquisition, on page 11, the **purpose and need** for the
 240 Bonner Bridge Replacement Project is shown there. I'm not going to go through that in
 241 detail, but that is the purpose and need for the project. And on the next page 12, we'll note
 242 that this is consistent with local land use plans, as shown there.
 243
 244 We'll talk a little bit about **right-of-way acquisition**. It will require property acquisition of
 245 relocation of homes and businesses. So, I'm going to run through this, if you would bear
 246 with me I need to read through this real quick. After decisions are made regarding the
 247 final design of the alternatives selected for construction, the proposed right-of-way limits
 248 will be staked in the grounds. If you are an affected property owner, a Right-A-Way
 249 Agent will contact you and arrange a meeting. The agent will explain the plans and
 250 advise you as to how the project will affect you. The agent will inform you of your rights
 251 as a property owner.
 252
 253 If permanent right-of-way is required, professionals who are familiar with real estate
 254 values will evaluate or appraise your property. The evaluations or appraisals will be
 255 reviewed for completeness and accuracy, and then the Right-of-Way Agent will make a
 256 written offer to you. The current market value of the property at its highest and best use
 257 when appraised will be offered as compensation. DOT must:
 258
 259 • Treat all owners and tenants equally;
 260 • Fully explain the owner's rights;
 261 • Pay just compensation in exchange for property rights; and
 262 • Furnish relocation advisory assistance.
 263
 264 So, if you are a relocate, that is if your residence or business has been acquired as part of
 265 the project, additional assistance in the form of advice and compensation is available.
 266 You will also be provided with assistance on locations of comparable housing and/or
 267 commercial establishments, moving procedures, and moving aid. Moving expenses may
 268 be paid for you. Additional monetary compensation is available to help homeowners cope
 269 with mortgage increases, increased value of comparable homes, closing costs, etc. A
 270 similar program is available to assist business owners.
 271

272 The Right-of-Way Agent can explain this assistance in consistency and greater detail.

273 And if anybody would like to talk to our Right-of-Way Agent, just get in touch with me

274 and I'll make sure you get that contact information. We also have right-of-way and

275 relocation brochures available tonight if you would like as well.

276

277 So, in the handout we also include the status of some other projects that you might be

278 interested in, the other phases of the project and those kinds of things. I'm not going to go

279 into those in details, but I did want to note that they're in your handout if you liked to

280 look at those.

281

282 And as I mentioned earlier, there is some additional information on our website. We also

283 have a twitter feed and Facebook page where you can stay in touch with us on the project.

284 And there's a toll free project line as well, if you have specific questions you want to call

285 us about.

286

287 Again, I talked about the different ways that you can comment. Certainly, we want to

288 hear from you. We need to hear from you. So, let us hear from you. And there is my

289 contact information, which is also in your handout on page 2. That's how you get in touch

290 with me or send me an email and send me your comments.

291

292 Okay, I'm going to go through the maps. That way we can go through a little bit more

293 detail on the designs for those of you who have not had the opportunity to look at them or

294 and for those who have. You might learn something new, you never know.

295

296 Alright, first one we're going to look at is the bridge on new location. And I've zoomed in

297 here. What I'm going to do on the screen is give you a little more detailed view, but this is

298 the map we're talking about here. And I'm going to start here on the right hand side of the

299 north of the project and run my way south towards Rodanthe. We're going to get zoomed

300 in looking at things so I kind of wanted to orient you on the map. I'm going to start over

301 here and move my way south. And we'll talk about some things as we go. And I'll talk

302 about some of the color as we go as well.

303

304 You'll see red is the proposed bridge. This is the existing NC12. It's a temporary detour

305 so we can do the construction. That way we can keep NC12 open during construction.

306 This is a little more challenging because it's not straight. I'm going to zoom in. You'll see

307 it. It goes out into the sound. And not a whole lot to see out there. So, it's just apparently

308 sound until it comes back into Rodanthe. And you see here just north of Pappy Lane or

309 America Drive where it comes in. And I'll slide that over just a little bit more so it can be

310 centered a bit. There we go.

311

312 And you'll see the bridge will come back in and connect in with natural ground here and

313 then we'd have a road with an intersection. This existing NC12 here, so we'd curve that,

314 tie it in, and then you've got an intersection here and you continue on NC12. So, you'd

315 come down off the bridge and continue on NC12. Access to these neighborhoods would

316 be on old NC12. And I will show you that right now.

317

318 You can see how existing NC12 would remain in this area. And here just before the

319 Refuge is where the pavement would end. You have a little turnaround. From this point

320 on in the Refuge the pavement will be removed and that's basically the way it is all the

321 way through the Refuge where we removed the existing pavement with this option. So, in

322 the end you just the bridge from this point. So, that is the new location option.

323

324 And this is DOT's preferred alternative, bridge within the existing easement. And again,

325 I'm going to start in the north and work my way south. And this is the map for the

326 alternative within existing easement. We'll just run down that and show you some of the

327 details about that.

328

329 And what you'll see is the red again is the bridge. And this yellow is a temporary road.

330 So, what's going to happen is we'll build a temporary road and you can see under here

331 this little gray is where the existing road is and where we're building on this side of the

332 easement we'll have a new bridge and have a temporary road. That way we can keep

333 traffic open during construction. And this is where the bridge will start and continue

334 south. And you can see it continues through the Refuge all the way along until you get to

335 Rodanthe.

336

337 And this is the edge of the Refuge in Rodanthe. And you can see one-way service roads.

338 The bridge will be here. You'll have the one-way service roads on each side and it will

339 give you access to all the properties in this area. This is the turnaround. Once the bridge

340 is constructed and traffic is open, this temporary detour will be removed. So, the road will

341 stop here and you'll have a turnaround. People coming down this way can turn around

342 this way to access these properties over here. And we keep going west.

343

344 Audience Member: Excuse me sir, what's the pink?

345

346 Facilitator: I'm sorry.

347

348 Audience Member: What's the pink? The pink?

349

350 Facilitator: Oh, that's the easement. That's power line easement.

351

352 Audience Member: Thank you.

353

354 Facilitator: Thank you for asking. Yes, that's power line easement. I didn't go

355 through all the colors. There are a lot of different things going on here, a lot of different

356 colors going along with that. That's an excellent question. I appreciate that. And if you're

357 curious too, the dark green is existing right-of-way and the lighter green with those

358 hatches are easements and some additional right of the lighter green. And there's

359 additional right-of-way that we need to purchase. So, that's what those colors mean.

360

361 And then you see Cross of Honor, there's another turnaround in that area. So, you got a

362 turnaround here and you got a turnaround here. So, people coming one-way here can turn

363 around and say get to Corbina, for instance. And here is the end of the bridge. To show

364 how that connects with natural ground, it'll come back down to ground level at this point
365 and you'll have an intersection. And here you will be able to make a left and take your
366 one-way service road or come back in. That's what that will do. So, that is the bridge
367 within existing easement.
368
369 Alright, well now we come to the most important part of tonight's meeting. This is where
370 we want to hear from you. So, again tonight recording... tonight's proceedings with be
371 recorded. Thank you. Tonight's proceedings will be recorded and a written transcript will
372 be provided for the project record and will allow us to in addition to your written
373 comments that we get in, the verbal comments will be provided for us as well; so, we can
374 address those.
375
376 We got one speaker signed up to speak. We'll start with him. After that I will again open
377 it up and anybody else that feels like they want to come up and speak, you're welcomed
378 to as well. I would ask that you state your name and address for the record. And then do
379 please speak into the microphone so that we can get it recorded and so that everybody can
380 hear you very well.
381
382 This is a hearing. This is not a debate. So, even if there are opinions that are very
383 divergent from what you have, I would ask that you be respectful. And you will have an
384 opportunity to speak. So, we're not going to have dialogue going back and forth, which
385 we usually don't have an issue with you folks, but just letting everybody know. Let's be
386 respectful. So, that's the... a colleague of mine says he only have one rule for hearings and
387 that's the "golden rule". Treat others as you would like to be treated yourself. So, let's do
388 be respectful. Our first speaker on the list here is Warren Judge.
389
390 Warren Judge: Thank you Drew. Good evening everybody and thank you for
391 coming out. DOT personnel thank you for being here. This is your second night in Dare
392 County and your first night in Ocracoke. We appreciate you coming out here to the island
393 and to the county and affording us this opportunity to meet with you and to give you
394 input.
395
396 Malcolm Fearing, thank you. Thank you for the work that you are doing for us in this
397 district with DOT. We appreciate it. You never knew you were going to work that hard,
398 did you? But we do thank you and I assure you he is working hard. Everybody knows that
399 I get up early, but they test me. They start calling at 4 and 5 o'clock in the morning, but I
400 do answer the phone, don't I?
401
402 Audience Member: Yes, you do.
403
404 Warren Judge: Paul Tine, thank you for being here. I appreciate what you are doing
405 for us, representing us in Raleigh.
406
407 And also I would like to recognize a native son and a good man, Stan White. Stan, thank
408 you for being here; you were with us up in Buxton last night. Stan's a former County
409 Commissioner, served us well there. He served as Chairman. He has served on the DOT

410 Board. Malcolm, get some tips from him sitting next to him. And he has certainly served
411 well as our State Senator, term before last. Thank you, Stan, for being here. Thank you for
412 all you do.
413
414 I can recall a day, Stan; in December 2001 all the commissioners went to Raleigh. We left
415 that day. We were sure that the Bonner Bridge was going to be under construction in April
416 2002. So, folks we're challenged. We're challenged when it comes to building bridges and
417 roads. And again, not to be repetitious and redundant, but again, thank you. DOT does
418 more than you will ever know; 24 hours a day when the weather is bad, keeping those
419 roads and those lanes open. And we thank them so very much.
420
421 Jed Dixon was here earlier. Jed runs the Ferry Division or he's assistant director and we're
422 very indebted to those people too. You know I ask myself the question, why are we so
423 challenged? Why the... it's almost like they pick on Dare County. Why are we challenged
424 whenever we need these needs? And it's because of special interest groups, for whatever
425 reason, they're at every turn and every turn the DOT makes, they're right there holding up
426 obstacles and creating problems.
427
428 We're a population of 33,000; 5,000 of us live on Hatteras Island. Maybe that's the reason.
429 Maybe we just don't have enough people. I know the city of New Orleans with 340,000
430 people. They're at or below sea level. The government put a dike around them. When it
431 collapsed during Hurricane Katrina, they rebuilt it. You'd think that we could get a couple
432 of bridges. So, maybe our luck is about to change.
433
434 We heard a lot of good comments last night and hopefully some of you all will speak
435 tonight. But I'd like to try to make some suggestions to NCDOT to maybe help elevate
436 some of those concerns that we heard last night. It's no secret Dare County has engaged the
437 services of an engineering firm. We are looking at two beach nourishment project. One's at
438 Buxton Beach the other one's at Rodanthe.
439
440 After we hired the engineering firm, NCDOT made the decision along with the Army Corp
441 of Engineers to build a three-year beach at Rodanthe giving them protection to the highway
442 and protection of the construction zone while they get the bridge built. So, now our
443 engineering firm is looking at the Rodanthe Project as a maintenance project falling on the
444 heels of what DOT builds.
445
446 So, I offer a partnership of sorts to North Carolina DOT and Rodanthe and possibly
447 working together. We could continue that nourishment project and maybe Drew you could
448 go back to the option and Malcolm maybe you could go back to the option where you build
449 a bridge in the right-of-way, but you have some beach nourishment, particularly there
450 towards the southern end. Dare County can become a partner in that. And that may let you
451 end the bridge sooner saving that one passionate businessman we heard last night, who
452 spoke very eloquently and very potently about what Island Convenience and that whole
453 business complex means to the people of Rodanthe and Hatteras Island as far as providing
454 jobs; and one of the few stores in that area and a very important part to the people's lives
455 and to the commerce of Hatteras Island and to Rodanthe Waves-Salvo.

456
457 It may also help alleviate the concerns and fears that some of the homeowners in that area
458 have as far as having a 17-foot off grade bridge running down the existing roadway.
459 Quite possibly being an impairment to their ability to enjoy their homes or possibly
460 affecting their rental history...their rental experience. So, maybe working together and
461 maybe taking another look at that would be worthwhile.
462
463 I will say this Dare County, my good friend Beth Midgett is in the audience tonight. Beth
464 years ago, Beth's a little bit of a tiger and years ago she took a challenge from the
465 community and she spearheaded the Replace the Bridge Now Committee and then that
466 grew into Bridge Moms. She's one of our best local activists. But the point is that Dare
467 County's position on anything is, build a bridge now.
468
469 We need a bridge. We need the bridges in place. We need the road secure and safe. We
470 need the road navigable. We're a mobile society. All of us have cars. If you've got
471 teenage children, you have multiple...you've got cars for your child. Our driveways are
472 full of cars. We jump in our cars. We run down the street. We go across town. We leave
473 Frisco. We go to Nags Head to have lunch. We leave Buxton. We go to Wal-Mart to
474 shop. It's all in the day to day life.
475
476 We have a school system on Hatteras Island, which is part of the Dare County School
477 System. The schools interact, our children interact. They need to have the ability to travel
478 and get to these other places. And moms and dads can be at home and can be comforted
479 and not concerned that their children are in any sort of danger and whatnot.
480
481 We have great medical personnel on Hatteras Island, that's not enough. We have medical
482 facilities and services north of Oregon inlet that are very important to the people in times
483 of emergency and in times of great illness and sicknesses. We're a society. You know
484 Hatteras Island developed because you had bridges. Stan, I am sure you remember, as a
485 young man, you had no bridges. We're a bunch of islands and the mainland all
486 disconnected and the bridges were built and brought us together.
487
488 Now, commerce developed that way. If Hatteras Island was to be served by ferries, then
489 the business plan on Hatteras Island would be different than it is today. It's not
490 sustainable without a bridge and a road. So, DOT if you hear anything tonight, get your
491 right choice, see if you can, your preferred Alternative, see if you can make some
492 adjustments to address the concerns that you heard last night and any that you might hear
493 tonight. And let's get on with it.
494
495 My friend Allen Burrows was here tonight. He'd sum it up in a pretty quick message. It's
496 something that we have been fighting for since 2005 where Hatteras Island is concerned.
497 And that one word is "access". And it all stops and end with the ability to get on Hatteras
498 Island and to get off Hatteras Island. So, the message tonight is get our bridge built, start
499 tomorrow if you can. Thank you.
500

501
502 Facilitator: Thank you. I appreciate that. Now, if there is anyone else that
503 would like to speak; if you'd raise your hand and come up. If not and I didn't make this
504 clear earlier and I meant too. If I didn't make this clear earlier, all the comments that we
505 get all receive equal treatment. So, we're going to address all the comments and we look
506 at everything. So, if you're not comfortable speaking and you want to make sure you're
507 heard you have many avenues to speak. This is certainly an opportunity to speak in front
508 of your peers, but if you're not comfortable with that, certainly the other opportunities
509 that we gave you, we'd love to do that. Did you want to speak sir?
510
511 Audience Member: Yes.
512
513 Moderator: Okay, and again please state your name and address for the record
514 please.
515
516 Brad Payne: My name is Brad Payne. My address is...I own property at
517 22141 Seagull Street in Rodanthe. I have multiple properties in Rodanthe and on Hatteras
518 Island. I'm a registered architect within the state of North Carolina. And one of the
519 severely affected homeowners within the portion of these two bridges. I would certainly
520 echo the sentiments of Mr. Judge and I thank you for bringing those comments up tonight
521 as a reflection of last night.
522
523 The residents of Rodanthe, although I'm not in any way a duly elected speaker or
524 representative of them, but I think that they genuinely feel...we genuinely feel that these
525 bridges at either alternative are going to be absolutely detrimental to our community, to a
526 portion of our livelihood for those who have rental homes. And I believe it's going to
527 have a tremendously negative impact on tourism, certainly in the Mirolo Beach Rodanthe
528 area. And I believe that these bridges will sacrifice that area.
529
530 As I mentioned, I was in attendance last night. I believe that if we're willing to sacrifice
531 the Mirolo Beach Rodanthe areas, then probably the next area which would be sacrificed
532 would be Buxton. And I just absolutely don't feel that in any way a display of
533 cooperation and working together. I believe the residents and property owners in these
534 communities and on Hatteras Island sincerely want to work with NCDOT. They greatly
535 appreciate and respect you all efforts on a daily, weekly, yearly basis in maintaining these
536 roads.
537
538 I just feel like maybe either we have gotten to these preferred alternatives or these
539 alternatives a little too quickly or without maybe considering some of the recent
540 happenings such as the beach nourishment in Nags Head and the success of that
541 nourishment. As Wes Hutchinson from the homeowners association stated last night,
542 with this emergency nourishment being put in place, here shortly in the next year and a
543 half, the next two years, we're going to have substantial concrete evidence as to whether
544 nourishment will work on the northern end of Rodanthe to protect this highway and these
545 homes and to protect the tourism and the economy of Hatteras Island.
546

546 So, perhaps the thing to do is to revisit that or as Warren Judge suggested at least go back
547 and look at the possible alternative of a bridge and nourishment. What we're talking
548 about doing here with this preferred alternative is something and I think everyone realizes
549 it, but I want to make sure is something which has never, ever been done. And that is to
550 design and construct a bridge, which is subject to continual wave action 24/7, 365 and to
551 maintain in place.

552
553 I know the engineers say it's possible. I know they say we can do it. It's not that I don't
554 believe them. It's the concern I have. But if by chance we're wrong and if we're wrong,
555 there's no returning from one of these alternatives. We're not going to go in and fill in a
556 mile or two mile long inlet and start over. We're faced with trying to repair a monstrous
557 bridge in difficult times and rely on a ferry while it's being done.

558
559 So, I think that if we could at least go back and revisit some of the options, which include
560 nourishment for the northern end of Rodanthe. Number one, it would send a tremendous
561 message to the residents of Hatteras Island that NCDOT really is willing to work with
562 them and willing to explore all options with new information in hand to try to make the
563 best possible alternative for a long-term solution, a 50 year solution, the access to
564 Hatteras Island, thank you.

565
566 Facilitator: Thank you. Is there anyone else that would like to speak? Okay.
567 well if not, then I appreciate everyone coming out and that will conclude our hearing for
568 tonight. Please drive safely and now this hearing is adjourned.

569
570
571
572
573
574
575
576
577
578
579
580
Hearing Adjourned.

Drew Joyner, Facilitator
Public Involvement Group
January 9, 2014

Typed by Johnetta Perry

Joyner, Drew

From: Scott Ackland <scott.ackland@antek.com>
Sent: Friday, January 24, 2014 8:31 AM
To: Service Account – Public Involvement 2
Subject: Rodanthe Bridge Proposals

To Whom it may concern,

As a property owner in Rodanthe and a long time visitor to the Outer Banks, I am against the proposed bridge solutions for the Rodanthe area. All of the bridge proposals have negative effects on the local economy, property values and esthetic vistas in the area. I would have to think that there are less intrusive options securing the roadway and would like those options to be considered.

I am in favor of beach replenishment and believe this will help stabilize the road right of way

Thank you,

Scott Ackland
311 Eastfield Place
Walkersville, MD 21793

23199 Mirlo Court
Rodanthe, NC 27968

COMMENT SHEET

NC 12 - Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase 1b)
Public Hearing
TIP No. B-2500B
Dare County

NAME: RICHARD E. AUSTIN

ADDRESS: PO BOX 11 SAUNDERS NC 27972

E-MAIL: POLECAT50@PIPELINE.COM

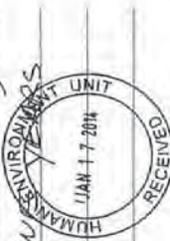
MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
- Bridge on New Location Alternative
- Other: _____
- No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

PUT THE BRIDGE ON THE SOUND SIDE SO IT WILL NOT BE IN THE SURF ZONE FROM NOW



MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

DREDGE A CHANNEL ON THE SOUND SIDE. PUMP THE SAND RIGHT DOWN THE CENTER OF THE ISLAND. BUILD THE ROADS ON THE BEACH. NO EXPENSIVE BRIDGES. CHANNEL WOULD HELP FLOOD SOUND - ADD TO LOCAL COMMERCIAL BOAT TRAFFIC USING ORSON WHEAT CHANNEL/RODANTHE CHANNEL TO PAMPLICO SOUND, AND POINTS SOUTH. THE CHANNEL WOULD BE A SAFE ANCHORAGE IN A STORM. LET THE WAVES

(This comment sheet continues on the other side.)

... WITH ... ABSORB THE WAVE ENERGY AN EROSION WOULD BE GREATLY REDUCED.

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

TO BUILD A BRIDGE IN THE RIGHT OF WAY, IT WILL BE IN THE OCEAN IN A COUPLE OF YEARS. WHAT THEN?

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

TELL THE GOVERNOR TO GET HIS BIG BOY PANTS ON AN SET ON WITH IT!! FULL SPEED AHEAD AN DAM THE LAWYERS AN BIRD FREAKS!!

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joynes
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598

Phone: (919) 707-6077 FAX: (919) 212-5785
Email: PublicInvolvement2@ncdot.gov

Tonight, you also may drop written comments into the comments box or provide oral comments. Feel free to attach additional pages to this form if you need more space to present your comments.

COMMENT SHEET

NC 12 - Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)

Public Hearing

TIP No. B-2500B

Dare County

NAME:

Tip J. Auth

ADDRESS:

P.O. Box 504 Rodanthe, NC, 27968

E-MAIL:

[Signature]

MY PREFERRED ALTERNATIVE IS:

Bridge within Existing NC 12 Easement Alternative

Other:

Bridge on New Location Alternative No preference Windy

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

I need the road and is now I am tired of wandering. If I am to be able to go off the island and not be able to get back in on the same day.

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598

Phone: (919) 707-6077 FAX: (919) 212-5785

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Feel free to attach additional pages to this form if you need more space to present your comments.

(This comment sheet continues on the other side.)

COMMENT SHEET

NC 12 - Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County



NAME: Horatio Beck
ADDRESS: Box 12 Rodanthe NC - Apt. 29609
16 Kingslee Lane
VA 29609

E-MAIL: _____

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
- Bridge on New Location Alternative
- Other: _____
- No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

I would like bridge within existing NC 12, but
it takes 2 lots + 3 buildings which I
own.

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

Moving turn points for Mirlo Beach
back north a short distance - that would
save my property, also would save island
contracting ~~costs~~ convenience.

(This comment sheet continues on the other side.)

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

my concern with new location, is that
it would ruin views of a cot of home
owners on the sound side,

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

I was born in Rodanthe 8/17/1940 - I under
stand that neither are good selections, but
something has to be done. I do not have
an answer! Just do the best you can.

Rodanthe is deeply embedded in my heart
N.S. Beach

N.S. Beach neighborhood I think would
be the best, along with ever is chosen by
state.

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598

Phone: (919) 707-6077 FAX: (919) 212-5785
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Tonight, you also may drop written comments into the comments box or provide oral comments
Feel free to attach additional pages to this form if you need more space
to present your comments.

COMMENT SHEET

NC 12 – Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County

NAME: Arleen Burley

ADDRESS: PO Box 405, Ocracoke, NC 28559

E-MAIL: none

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12
- Easement Alternative
- Bridge on New Location Alternative
- Other: _____
- No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

It is more cost effective and will keep our public land out of the hands of a special interest group

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

The lawsuit delaying this project is without merit and needs to be settled now. This project should begin immediately

(This comment sheet continues on the other side.)

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

Cost and environmental impact

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
Phone: (919) 707-6077 FAX: (919) 212-5785
Email: PublicInvolvement2@ncdot.gov

Tonight, you also may drop written comments into the comments box or provide oral comments.
Feel free to attach additional pages to this form if you need more space to present your comments.

COMMENT SHEET

NC 12 - Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County



NAME: JACK W. CAHOON
ADDRESS: P O Box 385 MANTO NC 27954

E-MAIL:

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
- Bridge on New Location Alternative
- Other
- No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

If bridge is within existing NC 12 Easement, it will wipe out the only business in Rodanthe, Naves and Solor that provides year round gas, meals, groceries and other items. If the south end of the proposal is shortened and put further north it

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

would be good for the community. We have home there and spend most of the winter months at Rodanthe and we depend on that business

(This comment sheet continues on the other side.)

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

I realize going into the sound would create problems for permitting, but I believe the further you are from the ocean the better.

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

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NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
Phone: (919) 707-6077 FAX: (919) 212-5785
Email: PublicInvolvement2@ncdot.gov

Tonight, you also may drop written comments into the comments box or provide oral comments. Feel free to attach additional pages to this form if you need more space to present your comments.

COMMENT SHEET

NC 12 - Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County

NAME: GEORGE & ELIZABETH CHAMBERLIN
ADDRESS: 101 BRITISH CENETARY ROAD ORFORD, NC 27960
E-MAIL: george@thecaptainslandings.com

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
- Bridge on New Location Alternative
- Other:
- No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

The listening to the proposals, it appeared that the "Existing NC-12" alternative would be disruptive to the home owners and business owners of Rodanthe. We also believe the final decision should be made after hearing considerations of the people in that area.

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

Allowing a wide enough bridge that can handle serious multi-car accidents without completely shutting down traffic.

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

- Too much disruption to local residents.
- Building over an existing beach does not seem to be a smart alternative.
- Conservationists will still make trouble for all of us.

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

Thank you for allowing our input.

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joynes
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
Phone: (919) 707-6077 FAX: (919) 212-5785
Email: PublicInvolvement2@ncdot.gov

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Feel free to attach additional pages to this form if you need more space to present your comments.

(This comment sheet continues on the other side.)

1-8-2014

NCDDOT:

My name is Carol Dillon Dawson, I was born on Hatteras Island in 1956, my mother and grandmother were also born here, and my family goes back hundreds of years. The reason I shared that information is because those of us that have lived on these banks of NC have endured the storms, hurricanes and northeasters along with the natural beauty and serenity that comes with calling Hatteras Island home.

I am completely against building bridges along RT 12 on Hatteras Island. This is 2014, and the technology and knowledge to stabilize this coastline exists, you just haven't tried it. My entire adult life has been spent fighting the Atlantic Ocean. My husband and I own the Cape Hatteras Motel in Buxton. We have had more ocean over wash on this property than anyone. We have been fighting erosion since the naval base put in the Jetties to protect the only federal oceanfront property on the island, their base housing and operation.

North Carolina told us in the 70's that they had adopted Orrin Pilkey's theory of "letting nature take its course". They were not going to try and prevent erosion and allow nature to do what it wanted to do to our coastline. There are many problems with this insane, immature thought process, but the biggest one was it didn't apply to everyone. Since the 1970's Oregon Inlet has been dredged, spending hundreds of millions of Federal tax dollars, the last huge dredging project a few months ago took out the equivalent of 60,000 dump truck loads of sand out of that inlet. A few weeks later, our only lifeline to the mainland, Bonner Bridge had to be closed for safety reasons. If nature had been allowed to take its course like we were dealing with, you wouldn't need a replacement bridge, you would be building a road.

Hurricane Irene cut a small inlet, which could have been filled in days, but NC decided to put a temporary bridge there instead. That inlet has filled in by itself, because that is what barrier islands do. Now, NCDOT is planning to build a 79 million dollar bridge to replace the temporary bridge. NCDOT is also planning to build another bridge in Rodanthe, more millions of dollars.

It has been 41 LONG years since any measure of trying to prevent disasters, inlets, major breaches along highway 12. I have done much research along the Eastern seaboard states coastlines. Most states understand the importance of their coastlines and have beach nourishment projects built into their maintenance plans. Many have done stabilizing projects, some have jetties, groins, and a few have installed the tube-like sand filled bags that are placed

by engineers and work with the energy of the ocean's waves. NC has done none of these things, they wait until after a disaster has occurred and then spend more money on repairing the breaches. The huge problem of what these repeated events have done to Hatteras Island is hard to explain. When you have people that love the island but have been stranded here, had their car in ocean tide, going over a bridge that is deemed not safe, it has destroyed this island's business community. The island is dying. I hear this over and over, every day. Many businesses have gone under; the ones that haven't closed are struggling and one storm away from losing their life's work. Generations of families have lost everything they have in the past 7-8 years.

I own several retail stores on Hatteras Island; the loss of business in the past few years is unbelievable. We have had four straight years of closed RT 12, losing valuable fall business.

What I believe needs to happen here on Hatteras Island, after speaking to my mother and the generation before her that lived on these banks, we need to nourish and stabilize all three hotspots, Rodanthe, Buxton and Hatteras. Two of those hotspots have been inlets this decade; Buxton will become the next inlet here. Nothing, not one thing has been done in Buxton. Three days ago, we had ocean tide on RT 12 in Buxton for three days. It is critical and declaring Rodanthe a disaster area without including Buxton is nothing short of negligence. I compare it to having three major arteries bleeding and only stitching one of them, you die!

It is beyond what I can imagine to spend hundreds of millions of dollars on bridges along RT 12 without even trying other measures of stabilizing the road. I'll never understand it!

NCDDOT did one hell of a job getting our bridge back open last month, you also respond to the disasters quickly, working to get ferries going and working in cold, windy conditions and we thank you for that. I believe that you care about the people of Hatteras Island. I'm asking you to please listen to us concerning RT 12, at least try a test area for beach nourishment and stabilizing.

Respectfully,

Carol Dillon Dawson

Carol Dillon Dawson

Cldd46@aol.com

Please at least look at these:

www.reefbeach.com

www.beachrecovery.com

www.littleenvironments.com

NO MORE BRIDGES

BEACHES NOT BRIDGES

A Rodanthe bridge on the current NC 12 easement ...



...will be on the beach and in the surf in just a few years.



Save Hatteras Island Beaches!

Northern Rodanthe has one of the highest beach erosion rates in North Carolina. NCDOT is planning to build a bridge in northern Rodanthe in one of two locations. One of those locations is on the current NC 12 easement and that bridge is designed to be "on the beach and in the surf" as erosion moves the shoreline westward. Eventually the beach will be destroyed. The panel of coastal science experts convened by NCDOT for Peer Exchange meetings recommended against this option.

Keep Our Beaches Safe!

The Environmental Assessment, recently released by NCDOT, acknowledges that a bridge on the current NC 12 easement is a public safety concern ("... In addition, the presence of bridge piles in areas where the bridge would be less than 150 feet from shore would be a safety hazard to surfers and other recreational ocean users."). However, the quoted sentence is the only mention of this hazard in the entire document. We are not experts on ocean/beach hazards, but we have observed swimmers, surfers and children playing on Mirro beach for many years. **This bridge will be a major hazard!** In the beginning, when the piles are on the beach close enough to be reached by shore break, the piles will be an "attractive nuisance." Children will play around them, boogie board up the beach toward them (often intentionally), etc. Knowing the force of those waves, it is likely that some children will be slammed into the piles, and head injuries are a real concern, along with broken bones, scrapes, and bruises. As the shoreline recedes further, and the piles are in the littoral trough and eventually on the sand bar, the hazard will become extreme. Waves will push surfers and swimmers into the piles, and scouring is likely to create unpredictable turbulence and exacerbate rip current dangers.

What should we do?

Although it is clear that a bridge on the beach and in the surf is not a good solution, opinions differ about what solution is best. Those who are most concerned about preserving the natural character of the Outer Banks and maintaining property values feel that beach nourishment is best. Building a bridge means abandoning northern Rodanthe to erosion and inlet formation, such as occurred with Hurricanes Irene and Sandy. Those who are most concerned with environmental issues and protecting NC 12 against erosion and inlet formation favor a bridge in Pamlico Sound, such as the proposed New Location alternative.

For more information and to sign an online petition opposing a Rodanthe Bridge the Current NC 12 Easement visit

<http://beachesnotbridges.org>

Beaches Not Bridges is a grassroots organization whose primary goal is to facilitate realistic solutions to erosion problems on the Outer Banks of North Carolina that balance environmental, social, and economic objectives. We look for common ground among the diverse set of stakeholders who care about the fate of the Outer Banks, and provide objective analyses of the trade-offs involved in any proposed solutions.

COMMENT SHEET

NC 12 – Rodanthe Beach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County

NAME: Jeff Dawson
ADDRESS: 46586 Hwy 2 Buxton NC
E-MAIL: Reasonj84@yahoo.com

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
 Bridge on New Location Alternative
 Other: Beach stabilization
 No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

Nothing is being done to address the loss of the island's oceanfront! Geo synthetic tubes can prevent erosion. We need to protect the beach. Building bridges and abandoning the island is not good for the people of nature.

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

Trying to ask CARA to allow us to IR.

(This comment sheet continues on the other side.)

COMMENT SHEET

NC 12 – Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County

NAME: Don DeMarco
ADDRESS: 22169 Sea Gull St Rodanthe, NC 27968
E-MAIL: dfdemarco@gmail.com

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
- Other: NO BRIDGES
- Bridge on New Location Alternative
- No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

Rodanthe Breach Long term Improvements
I am a ocean front property owner in Mirlo Beach and if either of the proposed bridges were built it would negatively affect my property value by hundreds of thousands of dollars. So many homeowners in NC have lost a tremendous amount of equity already over the last 5 years with the economic downturn that will take many years to recoup. This in itself has created a hardship for many of us. Beach nourishment should be given a chance, vacationers come to the outer banks to see the beach not to see a bridge.

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

Beaches not Bridges

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

If you abandon the oceanfront it will become a daisy zone. We will lose harbor island and the tax revenue it produces for the state. You cannot tell us to let nature take its course and continue to dredge at BTH ends of the island.
I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:
Stabilize the beaches! It solves all the problems. Protecting the beaches helps nature, the tax payers, and the people.

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
* NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
Phone: (919) 707-6077 FAX: (919) 212-5785
Email: PublicInvolvement2@ncdot.gov

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(This comment sheet continues on the other side.)

COMMENT SHEET



NC 12 - Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase III)
Public Hearing
TIP No. B-2500B
Dare County

NAME: JOHN BRIGGERS
ADDRESS: PO Box 364 Buxton
E-MAIL: JHARRY@YAHOO.COM

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
- Bridge on New Location Alternative
- No preference

NO BRIDGE: HIGH SPEED FERRYS

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

WEATHER: RAIN, FOG, WIND
BREAK DOWNS: GAS - TIRES
WRECKS
BRING IN DIFFERENT TOURIST CLASS WHO CARE

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

CO OPERATION TO TURN HATTERAS INTO
WHAT IT COULD & SHOULD BE... SOME OF
THESE "FAT" CATS NEED TO SHARE...
TO MAKE IT BETTER FOR US ALL!!!
NOW THAT "WYNDHALW" IS COMING QUALITY

(This comment sheet continues on the other side.)

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

ON ALL LEVELS WILL IMPROVE. BUT
SOME THINGS ARE GONNA GET STEPPED
ON-

NO BRIDGE !!!

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

LET THE OCEAN DO WHAT
NEEDS TO BE DONE.

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598

Phone: (919) 707-6077 FAX: (919) 212-5785
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COMMENT SHEET

NC 12 – Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County

NAME: JOHN & NANCY FLEISCHER
ADDRESS: P.O. BOX 321 RODANTHE 27968
E-MAIL: NANCY.NIF@gmail.com

MY PREFERRED ALTERNATIVE IS:
 Bridge within Existing NC 12 Easement Alternative
 Bridge on New Location Alternative
 Other: _____
 No preference

THE REASONS FOR MY PREFERENCE ARE:
(It will help NCDOT's decision-making process if you are as specific as possible.)
Main concern is for something to be done.
The emergency ferry system is dependable &
will merged but still add @ 3 hours each
way on any trip north.

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

(This comment sheet continues on the other side.)

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
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COMMENT SHEET

**NC 12 – Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County**

NAME: Patricia Fort
ADDRESS: 27972 Hwy 12, Salvo, NC
E-MAIL: fortpa@gmail.com

MY PREFERRED ALTERNATIVE IS:
 Bridge within Existing NC 12 Easement Alternative
 Bridge on New Location Alternative
 Other: _____
 No preference

THE REASONS FOR MY PREFERENCE ARE:
(It will help NCDOT's decision-making process if you are as specific as possible.)
A bit relative in distance.
Foundation of ground for support.

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:
60 mph speed limit instead of 55

(This comment sheet continues on the other side.)

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

Too expensive
Larger distance

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

Thank you for all of your hard work and continuous efforts to fix the highway.

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
Phone: (919) 707-6077 FAX: (919) 212-5785
Email: PublicInvolvement2@ncdot.gov

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Joyner, Drew

From: gj15@cox.net
Sent: Friday, January 10, 2014, 2:25 PM
To: Service Account - Public Involvement 2
Subject: NC12 proposed new bridge

It is amazing how fast money becomes available for things politicians want, whether or NOT the public as a whole want it!!

NC Teachers haven't had a decent raise in six years. Many, like our daughter, have 3 jobs just to survive. While the highway might be worthwhile for long range planning, even though the cost is prohibitive, it is NOT TIMELY AND SHOULD WAIT IT'S TURN!!!!

COMMENT SHEET

**NC 12 – Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County**

NAME: Harry W. Gilbert III
ADDRESS: 371 Silver Lake Dr. Curcote, NC 27960
E-MAIL: info@theanchorageinn.com

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
- Bridge on New Location Alternative
- Other:
- No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

(1) NCDOT already owns the Right of Way
(2) I believe permitting and construction would be faster using the existing location.

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

Beginning construction in the near future

(This comment sheet continues on the other side.)

COMMENT SHEET

NC 12 – Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County

NAME: Leslie Gilbert

ADDRESS: PO box 850 Peracote NC 27960

E-MAIL: lnlgilbert@hotmail.com

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
- Other: _____
- Bridge on New Location Alternative
- No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

believe permit accessing would be quicker for this alternative.

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

(This comment sheet continues on the other side.)

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

Permitting Concerns (re: Flw acquisition)

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

This access (NC 12) is critical for our live by hood and access for supplies, medical issues, etc. I would love to see something resolved as soon as possible

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COMMENT SHEET

NC 12 - Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County



NAME: LEE HALVER

ADDRESS: 58094 NC 12 HWY FORTSIO NC 27536

E-MAIL: LEE HALVER 10 @ GMAIL.COM

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
- Bridge on New Location Alternative
- Other:
- No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

I BELIEVE THE OCEAN WILL BE ENCROACHING ON THE NORTH END OF RODANTHE AND BOUNDING THE BRIDGE THERE IS NOT A GREAT IDEAL, I ALSO BELIEVE THE SOUND LOCATION OF THE BRIDGE WILL BE LESS OFFENSIVE TO NEARBY RESIDENTS AND SHOULD BE A MATTER OF CHOICE FOR THE BRIDGE.

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

STABILIZING THE BEACHES OF NORTHERN RODANTHE AND THE PRESERVE WITH SOFT STRUCTURE TECHNIQUES & PROVIDE ACCESS/PARKING AT THE NORTHERN END OF THE BRIDGE FOR PEOPLE TO ACCESS THE PRESERVE AND BEACHES

(This comment sheet continues on the other side.)



MY CONCERNS WITH OTHER ALTERNATIVES ARE:

BUILDING WITHIN THE EXISTING ROW WILL BE RECEIVED FOR TROUBLE WITH THE OCEAN FOR THE LIFETIME OF THE BRIDGE

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

HELP! WE NEED VIABLE ACCESS ALONG HWY 12 ASAP! THANK YOU FOR ALL YOUR HARD WORK TO DATE ON THIS PROJECT

Lee Halver

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
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Email: PublicInvolvement2@ncdot.gov

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J o y n e r , D r e w

From: Ted Hamilton <tedsalvo@earthlink.net>
Sent: Monday, December 16, 2013 7:51 PM
To: Service Account – Public Involvement 2
Subject: Comments on Rodanthe Breach Area Preferred Alternative

Assuming the preferred alternative (Bridge Within Current ROW) is finally approved.

Why can the Southern terminus of this alt not be moved slightly North so as to preserve the Island Convenience/Liberty Gas Station (Mac's Store to many of us).

This is the only year round convenience store / gas station in the Tri-Villages. This will cause folks during the period from just after Thanksgiving to early May to have to travel, at a minimum, to Avon for such items, thus greatly increasing the cost to them. In addition it is the only such business in the Tri-Villages that can accommodate large tractor-trailer type vehicles in the number you usually see there.

I'd like to see a detailed rationale on exactly why the Southern terminus of this alt must take out this business

Cheers Ya'll

Ted A. Hamilton
(aka Salvo Jimmy)
Salvo NC / Hampton VA

J o y n e r , D r e w

From: Ted Hamilton <tedsalvo@earthlink.net>
Sent: Tuesday, December 17, 2013 7:04 AM
To: Service Account – Public Involvement 2
Subject: Adding to Previous Comments on Rodanthe Breach Area Preferred Alternative

Having looked at the new 2060 erosion predictions in App D (blue line), it appears my suggestion could be done with little of the Southern terminus within the 2060 erosion prediction, just some of the East side feeder road being within the predicted erosion line.

Besides looking at the Pea Island replacement bridge location, it appears most, if not all, of the North and South termini where they join the existing road are within the 2060 erosion prediction in order to stay within the current road ROW.

-----Original Message-----

>From: Ted Hamilton <tedsalvo@earthlink.net>
>Sent: Dec 16, 2013 7:51 PM
>To: Publicinvolvement2@ncdot.gov
>Subject: Comments on Rodanthe Breach Area Preferred Alternative

> >Assuming the preferred alternative (Bridge Within Current ROW) is finally approved.

> >Why can the Southern terminus of this alt not be moved slightly North so as to preserve the Island Convenience/Liberty Gas Station (Mac's Store to many of us).

> >This is the only year round convenience store / gas station in the Tri-Villages. This will cause folks during the period from just after Thanksgiving to early May to have to travel, at a minimum, to Avon for such items, thus greatly increasing the cost to them. In addition it is the only such business in the Tri-Villages that can accommodate large tractor-trailer type vehicles in the number you usually see there.

> >I'd like to see a detailed rationale on exactly why the Southern terminus of this alt must take out this business.

> >Cheers Ya'll

> >Ted A. Hamilton
> >(aka Salvo Jimmy)
> >Salvo NC / Hampton VA

Cheers Ya'll

Ted A. Hamilton
(aka Salvo Jimmy)
Salvo NC / Hampton VA

COMMENT SHEET

NC 12 - Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County

NAME: JIM HARPER
ADDRESS: 92 S. DOGWOOD TR

E-MAIL: CONICASTER@CHARLTER.NET

MY PREFERRED ALTERNATIVE IS:
 Bridge within Existing NC 12 Easement Alternative
 Bridge on New Location Alternative
 Other: _____
 No preference

THE REASONS FOR MY PREFERENCE ARE:
(It will help NCDOT's decision-making process if you are as specific as possible.)
NEED A REALIABLE ROAD

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

(This comment sheet continues on the other side.)

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:
THE LIGHTING OF THE ROADWAY/BRIDGE WILL AFFECT NIGHT ACTIVITY. THE BRIDGE DECK NEEDS TO BE LIT WITH DIRECTED LIGHT

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
Phone: (919) 707-6077 FAX: (919) 212-5785
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COMMENT SHEET

NC 12 - Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County



NAME: MICK HARRIS
ADDRESS: 27203 PARK RD. SALVO 27972
E-MAIL: MICKSTUFF@GMAIL.COM

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
- Bridge on New Location Alternative
- Other: _____
- No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

THE SOUND BRIDGE WILL IMPACT LESS PEOPLE FROM CONSERVATION OF PROPERTY AND ALSO IMPACT LESS HOMES VISUALLY. THE NC 12 BRIDGE WILL BE AN EYE SORE TO ALL THE HOMES ON EAST SIDE OF MARLORO AS WELL AS THE OCEAN FRONT ALONG THIS STRAIGHT

~~MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:~~

AS THE OCEAN MOVES WEST TO FOOD UNDER THE HWY 12 BRIDGE THE PILING WILL BECOME A HAZARD TO BEACH PEOPLE - SWIMMERS & SURFERS. I'M PART OF THE WATER RESCUE TEAM AND OVER THE YEARS WE HAVE HAD MANY RESCUES & ONE DROWNING FROM HOMES THAT WERE IN THE OCEAN AT HIGH TIDE. THE DROWNING WAS CAUSED WHEN A

(This comment sheet continues on the other side.)

WADY, KICKER IN UTTER, AND I'VE HUNDED DEWIDEN HAVE SETS AND SHE GOT CAUGHT. I CAN SEE THE SAME THING HAPPENING WHEN THE HWY BRIDGE

~~MY CONCERNS WITH OTHER ALTERNATIVES ARE:~~

STARTS BECOMING FLOODED AT HIGH TIDES. ITS STATED THE HWY BRIDGE WILL COST LESS THAN THE SOUND BRIDGE. HAS CONSTRUCTION DELAYS DUE TO HWY FLOODING FROM N. EASTERS OR ANOTHER HURRICANE BEEN FACTORED IN? WHAT ABOUT FUTURE MAINTENANCE COST OF A BRIDGE BATTERED BY OCEAN WAVES AS APPOSED TO THE CALM OF THE SOUND

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

SOME ARE CONCERNED ABOUT THE SOUND BRIDGE SHADOW AFFECTING HABITAT. AT 17' HIGH THIS WILL BE NEGLIGIBLE TO NAME. BESIDES IN A FEW YEARS MARINE GROWTH ON BRIDGE PILING WILL OFFER FISH HABITAT

THE SOUND BRIDGE WILL OFFER A MORE ATTRACTIVE ENTRY TO THE ISLAND THAN AN ELEVATED HIGHWAY ON A FISHING WALKWAY FROM PART OF THE SOUND BRIDGE FROM RODANTHE WOULD BE A NICE ADDITION & TOURIST ATTRACTION

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598

SEVERAL LOCAL FISHERMAN LOVE THE
106A

Phone: (919) 707-6077 FAX: (919) 212-5785

Email: PublicInvolvement2@ncdot.gov

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Public Hearing
TIP No. B-2500B
Dare County

NAME: MICK HARRIS



ADDRESS: 27203 PARK RD. SALVO

E-MAIL: MICKSTAFF@GMAIL.COM

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12
- Easement Alternative
- Bridge on New Location Alternative
- Other:
- No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

I SENT YOU A FORM WITH MANY REASONS FOR CHOOSING THE NEW LOCATION SOUND BLOBBE. THIS FORM IS TO ADD ONE COMMENT. TALKING TO FOLKS IN FAVOUR OF THE HWY 12 BRIDGE USE AS AN EXAMPLE THE BLOBBES IN THE

~~MY PREFERRED ALTERNATIVE~~ COULD BE IMPROVED BY: FLORIDA KEYS. I USED TO LIVE IN THE KEYS AND THE BLOBBES THERE ARE PROTECTED BY AN OFFSHORE REEF & SO ARE NOT EXPOSED TO EVEN HIGH WAVES. LIKE A HWY 12 BRIDGE WILL BE IN A EVEN HEAR OF SURFERS COME TO THE KEYS FOR SURF? NO - BECAUSE THERE IS NO SURF IN THE KEYS.

(This comment sheet continues on the other side.)

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
Phone: (919) 707-6077 FAX: (919) 212-5785
Email: PublicInvolvement2@ncdot.gov

Tonight, you also may drop written comments into the comments box or provide oral comments. Feel free to attach additional pages to this form if you need more space to present your comments.

Joyner, Drew

From: Sheila Higdon <sfhigdon@gmail.com>
Sent: Friday, January 24, 2014 4:26 PM
To: Service Account – Public Involvement 2
Cc: Richard Higdon
Subject: Comment on Rodanthe Bridge Proposals

Dear Mr. Joyner,

Thank you for the opportunity to provide our perspective and comment on the proposed Rodanthe bridges.

In 2007 we purchased a home in Mirlo Beach with the intention of retiring here. It is not a rental, but is our home; the one we envisioned living in and sharing with our children and grandchildren for generations to come. We have invested considerable money in our home to bring our dream to fruition. The proposed bridges, especially the bridge on the existing Route 12 easement, shatter much more than just beautiful view and beaches - - they destroy the future.

We understand and appreciate that there needs to be safe and reliable access from Hatteras Island to and from the main land, and we fully appreciate that the livelihoods and lives of all of the Island residents need to be considered. But, we believe that beach nourishment, as was accomplished in Nags Head, is a more reasonable option for all concerned.

To our knowledge, alternate options that may provide safe and reliable access have not been fully vetted. For instance, has a short bridge, similar to the one at the new inlet, been considered at the S-curve? Other East Coast beaches have successfully stopped beach erosion by creating some type of jetty or underwater barrier reef to protect the shoreline. While we realize there may be environmental concerns with this option, it is one that could also provide long term resolution without destroying the beaches.

We are extremely concerned that the Mirlo Beach community has been essentially "written off" by NCDOT, other government officials, and by some island residents. Mirlo Beach has been in existence for more than 30 years, and over time has generated significant dollars in revenue and taxes that have benefitted the entire island, Dare County and the State of North Carolina. It just does not make sense to write-off a proven revenue source. The bridge over Rt 12 would do just that! Mirlo Beach, its homeowners and residents, deserve the chance to continue to enjoy their homes and bring considerable value to all of our neighbors.

Sincerely,
Richard Kirk and Sheila Higdon

Joyner, Drew

From: PHowan3623@aol.com
Sent: Thursday, January 23, 2014 8:24 PM
To: Service Account – Public Involvement 2
Subject: beach replenishment rodanthe NC

I support beach replenishment in Rodanthe NC. I feel this is the only way to save the beaches and maintain the highway
Pat Howanitz

COMMENT SHEET

**NC 12 – Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County**

NAME: AROLD S. HOWELL
ADDRESS: 23172 CORBINA DR WEST RODANTHE NC
E-MAIL: GLENN-SANDY-HOWELL@MSN.COM

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
- Bridge on New Location Alternative
- Other: _____
- No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

DISRUPTED VIEW.

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
Phone: (919) 707-6077 FAX: (919) 212-5785
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to present your comments.

(This comment sheet continues on the other side.)

COMMENT SHEET

NC 12 - Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County

NAME: Wes Hutchinson
ADDRESS: 23002 Cross of Haven, Rodanthe, NC
E-MAIL: juhutch@wharton.upenn.edu

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
- Bridge on New Location Alternative
- Other: or beach nourishment
- No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

The bridge on the current easement causes the greatest harm in terms of public safety (injury & drownings), environmental damage (the beach will be destroyed), property-values (more homes near the bridge all worth Rodanthe properties suffer substantial damage).

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY: Visual impact waiting to see the results of the emergency nourishment. If it works, it could be less harmful and less costly.

(This comment sheet continues on the other side.)

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

The bridge on the current easement is a safety hazard, will destroy the beach, causes greatest economic damage, is opposed by the NCDOT panel of coastal scientists.

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
Phone: (919) 707-6077 FAX: (919) 212-5785
Email: PublicInvolvement2@ncdot.gov

Tonight, you also may drop written comments into the comments box or provide oral comments. Feel free to attach additional pages to this form if you need more space to present your comments.

Joyner, Drew

From: Hutchinson, Wes <jwhutch@wharton.upenn.edu>
Sent: Friday, January 24, 2014 5:32 AM
To: Service Account – Public Involvement 2
Cc: Sinyre, Elizabeth A
Subject: Hutchinson comments on the Rodanthe bridge alternatives
Attachments: Hutchinson comment on Rodanthe bridges.pdf

Dear Mr. Joyner,

I am a property owner in northern Rodanthe, NC (23002 Cross of Honor Way, Mirlo Beach). Since we built our home in 2000, I have spent about 50 days every year in Rodanthe. More important, almost every day I have been there I have taken a long walk with my wife along the S-curves hot spot area, and also returned to the beach several times a day to go surfing or fishing or just observe the waves and the people. Additionally, our home borders the Pea Island Refuge in the middle of the island with direct views of the beach, island, and sound, including NC 12, so I have observed most of the major overwash events and damage to NC 12. Thus, I honestly believe I have personally observed the planned bridge area more than any person on the planet.

Also, over the past 5 years, I have been in regular and extended communication with a number of people who are very knowledgeable about different aspects of the situation (including Stan Riggs, Spencer Rogers, Tim Kana, Mike Bryant, Dennis Stewart, Warren Judge, and a number of local residents and retailers). Finally, I am the Stephen Heyman Professor and Professor of Marketing at the Wharton School of Business, University of Pennsylvania, which only means that I have some degree of expertise in the areas of consumer behavior and financial decision making. I should also mention that I have been the Vice President of the Mirlo Beach Homeowners Association for a number of years, but I hasten to add that I am writing to communicate my personal beliefs, not to represent MBHOA.

I am writing mainly to strongly oppose the currently preferred bridge on the Current NC 12 Easement. I support nourishment for the next 5 to 10 years from a purely financial perspective, but if it must be a bridge "right now" (for pragmatic political reasons), then I favor the New Location bridge in Pamlico Sound.

As requested in the public information sessions, the reasons for my opinions are provided below.

Reasons against a bridge on the Current Easement:

1. This bridge is designed to rapidly be on the beach and in the surf. This will destroy all normal uses of the beach by humans, plants, and animals. Migratory bird food sources will survive, but bird and turtle nesting behavior will be

negatively affected. Human visitors will have reduced access to and enjoyment of the area.

2. As acknowledged in the Environmental Assessment, concrete bridge piles on the beach and in the surf will create a public safety hazard. Having observed human behavior on the beach and in the surf, and as an expert on consumer behavior (including recreational tourism), my opinion is that this is not a negligible risk. Most beach users will avoid such hard structures, but many children and adults, surfers, boogie boarders, and swimmers will find these structures attractive and entertaining. Serious injuries and drowning fatalities will increase because of the power of the waves (which is unexpected to most vacationers) and the fact that scouring around the piles and stable, deepened rip currents will create unexpected hazards. Outer banks beaches are unprotected by lifeguards, and I observe very poor decision making by parents, children and beginner-level surfers all the time. Changes in these risk factors will be difficult to measure on a short term basis, but over the 50-year lifetime of the bridge, serious injury and fatalities will increase. I challenge you to find any credible expert who will offer an opinion that this bridge will decrease these risks or leave them the same as now. Failing such evidence, what is the value you are willing to place on human lives, which are merely statistical now but will be very real to the families unlucky enough to suffer the consequences. If this were a cancer risk, this option would have been ruled out long ago.

3. By design, this bridge removes all protection that property owners have against both erosion and inlet formation. Erosion is predictable and expected. Inlet formation is commonplace over long time horizons, but hard to predict. A major inlet at this location will gradually move south and destroy all properties (i.e., 100 - 150 homes) along the length of the bridge. Over and above this probabilistic risk, the negative effect on property value is virtually certain. A small number of citizens will be needlessly required to suffer large economic losses (approximately \$100,000 per owner, much more for those immediately adjacent to the bridge). This violates any common sense definition of fairness. Real estate sales have been a highly promoted driver of economic growth in this area for a long time. While it might be argued that high erosion rates were common knowledge, realtors and public officials seldom, if ever, disclosed the likelihood of loss of protective government services via the use of bridge alternatives to address erosion. Thus, the likelihood of class action, inverse eminent domain lawsuits is high, possibly ex ante and certainly ex post.

4. As described in the Environmental Assessment, a bridge on the Current Easement will disrupt or destroy the visual and cultural characteristics of the Outer Banks or North Carolina in this area. Perhaps worse, this area is the visitor entrance to all of Hatteras Island and for many years it will have the appearance of a "New Jersey interstate ghetto." Houses will be continually dropping into the sea, creating debris and a "war zone" appearance, such as we experienced after hurricanes Irene and Sandy. However, unlike those natural disasters, local property owners will not be inclined to invest in cleanup and rebuilding. The Outer Banks brand image will be irrevocably harmed (and recent Chamber of Commerce studies have confirmed that this image is a major asset of the Outer Banks and North Carolina).

compared to the Current Easement bridge are small. At most, the cost would be a delay of a few months or maybe a year or two delay for an irrevocable decision about a bridge with a 50+ year lifespan. The benefits of the New Location bridge far outweigh this small cost of delay.

Thank you for your consideration of my concerns and the concerns of all stakeholders.

Sincerely,

Wes Hutchinson

P.S. A .pdf file of this comment is attached for your convenience.

Wes Hutchinson
Stephen J. Heyman Professor and Professor of Marketing
Faculty Director, Wharton Behavioral Laboratory
Marketing Dept., 746 Jon M. Huntsman Hall
The Wharton School, University of Pennsylvania
Philadelphia, PA 19104-6340

office: (215) 898-6450
fax: (215) 898-2534

5. The entire panel of coastal science experts assembled by NCDOT strongly opposes this bridge alternative. NCDOT and the merger team was eager to listen to these experts to "rule out" beach nourishment. But with regards to the bridge on the Current Easement, it appears that these expert opinions do not suit their purposes.

6. The major arguments in favor of a bridge on the current easement are weak. The two I have heard most frequently are that NCDOT can proceed without approval of other stakeholders, especially agencies that must issue permits, and that the funding is available now and might disappear in the current political climate and as a result of the new Strategic Transportation Investments (STI) legislation. Although expedient, this is not governance to be proud of. It is short-sighted and not in the best interests of the public: residents, visitors, and North Carolinians in general.

A simple financial analysis of Beach Nourishment:

7. Although the Peer Exchange panel of coastal science experts recommended against nourishment as a long term solution, they admit in private that this opinion is based on general knowledge of beach erosion and not on empirical data from this particular beach. This would be the best information available were it not for the fact that Emergency Nourishment of this hot spot will commence this Spring, and we will have solid evidence of cost effectiveness soon thereafter, in a year or two. From a purely financial perspective, \$200 million would be better used as an endowment to support nourishment (e.g., \$8 million per year at 4% return rate, which more than pays for the 3-year expected life of emergency nourishment) until solid data is available to make the best long term decision. Of course, as an endowment, the \$200 million would always be available in the future to build a bridge if nourishment fails to be sustainable, or if there is an unanticipated natural disaster. This type of real options approach to long term strategic planning is the dominant best practice in the private sector (at least for large corporations). I realize that things are different in the public sector, but still ... that is no excuse.

If it must be a bridge, then a bridge in Pamlico Sound is best:

8. Although the New Location bridge also unfairly burdens the citizens of northern Rodanthe with the costs of providing access to Hatteras Island (see #3 above), it does preserve the beach and indeed returns it to its "natural state" (insofar as a natural state exists in modern times) and does not destroy the beach (#1 above). It creates a much smaller public safety hazard (#2 above), although serious kite-boarders might be tempted to jump the bridge. Homes will be destroyed (#4 above) but this will be less visible to visitors, and the visual and cultural impact will be less. Some (but not all) coastal science experts prefer this bridge (#5 above); others prefer non-bridge or different-bridge alternatives). Permitting of this bridge might be slower, but it is not in doubt. Certainly USFWS has now stated in an Ecological Services report that they favor this bridge and the Refuge Manager indicates that the easement is likely to be deemed a minor modification. Thus, the "pragmatic costs" of this option

Mr. Drew Joyner
NCDOT, Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598

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Joyner, Drew

From: Jodie Kamins <jkamins@hotmail.com>
Sent: Friday, January 24, 2014, 9:15 AM
To: Service Account – Public Involvement 2
Subject: Beach nourishment is the way to go.

Thank you for this opportunity to comment.

My family has always been beach oriented. My primary home is in Maryland. I'm originally from New Jersey and grew up going down the shore to the NJ beaches. My husband is from Long Island, New York and grew up going to and working at beach clubs. When we discovered the Hatteras Island beaches back in 1980 when our kids were 4 and 11 weeks old, that was IT for us.

We've come back to northern Hatteras Island every year since as renters, and eventually homeowners (Rodanthe) and business owners (Waves). We bring our friends and our kids' friends. One son was married there. The quality of experience offered the visitor to Hatteras Island is what has kept us and hundreds of thousands of folks coming back year after year. The revenue return to the state and local businesses is no small issue. Beach nourishment, not a bridge in Rodanthe, is what will keep folks coming back years into the future.

I appreciate this opportunity to present my opinion that beach nourishment should be both the short-term and long-term game plan for maintaining beach and community integrity. While other eastern beach communities have grasped the value of beach nourishment, for some reason, Hatteras Island has been left out of that discussion. Now is the time. Bridges on the beach and in the surf really are not acceptable.

Looking at successes in other beach communities (Miami Beach is notable but Ocean City, Maryland is a local example for me), it seems reasonable to believe that sand nourishment can stop the erosion and preserve beach access and habitat. This is the fundamental quality of our Hatteras Island beaches. Beach nourishment should at least be given a chance before the integrity of the HI northern beaches is destroyed with a bridge. If after nourishment and study it turns out that the science and economics don't support nourishment as a best practice with reasonable ROI, you can move on with other options. I urge you not to rush past beach nourishment. Let's not rush to pave paradise and put up a parking lot.

Sincerely,
Jodie A. Kamins
Silver Spring, MD and Rodanthe, NC

Sent from Windows Mail

A simple financial analysis of Beach Nourishment:

7. Although the Peer Exchange panel of coastal science experts recommended against nourishment as a long term solution, they admit in private that this opinion is based on general knowledge of beach erosion and not on empirical data from this particular beach. This would be the best information available were it not for the fact that Emergency Nourishment of this hot spot will commence this Spring, and we will have solid evidence of cost effectiveness soon thereafter, in a year or two. From a purely financial perspective, \$200 million would be better used as an endowment to support nourishment (e.g., \$8 million per year at 4% return rate, which more than pays for the 3-year expected life of emergency nourishment) until solid data is available to make the best long term decision. Of course, as an endowment, the \$200 million would always be available in the future to build a bridge if nourishment fails to be sustainable, or if there is an unanticipated natural disaster. This type of real options approach to long term strategic planning is the dominant best practice in the private sector (at least for large corporations). I realize that things are different in the public sector, but still ... that is no excuse.

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8. Although the New Location bridge also unfairly burdens the citizens of northern Rodanthe with the costs of providing access to Hatteras Island (see #3 above), it does preserve the beach and indeed returns it to its "natural state" (insofar as a natural state exists in modern times) and does not destroy the beach (#1 above). It creates a much smaller public safety hazard (#2 above), although serious kite-boarders might be tempted to jump the bridge. Homes will be destroyed (#4 above) but this will be less visible to visitors, and the visual and cultural impact will be less. Some (but not all) coastal science experts prefer this bridge (#5 above); others prefer non-bridge or different-bridge alternatives). Permitting of this bridge might be slower, but it is not in doubt. Certainly USFWS has now stated in an Ecological Services report that they favor this bridge and the Refuge Manager indicates that the easement is likely to be deemed a minor modification. Thus, the "pragmatic costs" of this option compared to the Current Easement bridge are small. At most, the cost would be a delay of a few months or maybe a year or two delay for an irrevocable decision about a bridge with a 50+ year lifespan. The benefits of the New Location bridge far outweigh this small cost of delay.

Thank you for your consideration of my concerns and the concerns of all stakeholders.

Sincerely,



Wes Hutchinson

Joyner, Drew

From: Matthew <mjkamins@live.com>
Sent: Friday, January 24, 2014 10:08 AM
To: Service Account - Public Involvement 2; jkamins@hotmail.com
Subject: Rodanthe

To whom it may concern:

My wife and I are both business owners and residents of Hatteras Island. The purpose of this email is to provide our support for beach nourishment north of Rodanthe (The "S-Curves") and throughout the Tri-Villages (Rodanthe, Salvo and Waves) with particular emphasis on Rodanthe and the Mirlo Beach community.

Along the Atlantic Coast (quite frankly wherever in the world there are viable beach communities) beach nourishment has been the choice of intervention when storms have impacted the sustainability of the beach. It is time for beach nourishment to be implemented on Hatteras Island. In my opinion, backed by science, beach nourishment is the least costly, most environmentally friendly, and least disruptive to the community.

The residents and business owners in Miami Beach and Fort Lauderdale, Florida; Charleston, SC; Ocean City, MD; Rehoboth and Dewey Beach, DE; and along the shores of New Jersey and Long Island, New York have all benefited and sing the praises of beach nourishment. Only when this option is implemented will there be clear and irrefutable evidence of its effectiveness.

I urge you to consider and immediately implement beach nourishment as the only practicable approach.

Matthew J. Kamins

COMMENT SHEET

**NC 12 – Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County**

NAME: WALTER A. KAMINS
ADDRESS: 22194 Blue Sea Rd. 8533 Newburg Rd. MAIL ADDRESS: RODANTHE, NC 28586
E-MAIL: jkamins@live.com NEWBURG, PA 17240

MY PREFERRED ALTERNATIVE IS:
 Bridge within Existing NC 12 Easement Alternative
 Bridge on New Location Alternative
 Other: _____
 No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

The proposed project on Rte 12 easement through Mirlo Beach is an untested engineering feat. No one on either side of the beach is in a dynamic danger such as Mirlo. It seems logical that the beach will threaten to destabilize the area sooner than later. The other alternative through the sound in marsh country would seem the wisest - most logical way to go -

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

the aesthetics of the sound bridge are more acceptable; the build would be more manageable and the longevity of the project would seem more rational. With a number of examples of a bridge in the area with up to 50' waves at times, if the project had a 20' - 30' process order the diminished contribution reduced property values will give you a (This comment sheet continues on the other side.)

COMMENT SHEET

**NC 12 - Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County**

NAME: Tom Kluge

ADDRESS: 22194 Blue Sea Rd

E-MAIL: TKLUGGE@GMAIL.COM

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
- Bridge on New Location Alternative
- 1. Other: Beach Nourishment
- 2. No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

Beyond the obvious problems associated with a bridge in the violent surf, the existing new bridge would destroy natural and the property values, rental income & my life.

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

Delaying any bridge to test beach nourishment.

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

I would favor nourishment over a bridge any day.

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

We have a home on Blue Sea Rd. My husband wanted to buy his "beach house". Our current "nest" is the "view" of the surf. Our view will become the side of the bridge; the easement takes the front of our property as the diminished rental income will impact us greatly. The aesthetics of a sand bridge would certainly be less impact. Then one of our front decks I would accept the loss of property to nature. The loss because it is "easier" seems

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

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NCDOT - Human Environment Section
1598 Mail Service Center
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leggy and Wilson@ncdot.gov

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Tonight, you also may drop written comments into the comments box or provide oral comments. Feel free to attach additional pages to this form if you need more space to present your comments.

(This comment sheet continues on the other side.)

Joyner, Drew

From: Gary Langner <glangner27968@gmail.com>
Sent: Friday, January 24, 2014 11:43 AM
To: Service Account – Public Involvement 2; LT Governor
Subject: Rodanthe Bridge on Hatteras Island, NC

Dan and Drew

I'm writing to express my concern over both options provided the public as solutions to the on-going over-wash in the Mirlo Ct area that I know both of you have visited recently. I have two major concerns.

1) we are rushing into this project without all the current pieces in place. In the 10 years I've been living in NC there has been talk about replacing of Bonner Bridge and likely some before that. To date it's still in hold and no action has been started on that project although we are rushing by making plans to turn the outer banks into a series of short bridges. I think we need a wait-see approach to this project since it may not even be necessary after the beach reclamation which I'm hearing should start soon. Even if the building wouldn't start for several year a decision at this point would impart may financial decisions to be made by individuals up and down the island. Taxes are in place for the funding of this project. I understand and should allow for it's continuation of beach nourishment if that is what those monies are ear marked for. I hate to see million dollars wasted on an eyesore of a bridge that we are unsure there is even a need for. The local power cooperative is taking the same mistaken approach by moving their right of way to the West in the Rodanthe area. They should also be stopped until it's ascertained this move is absolutely necessary after the beach is revitalized.

2) Hwy 12 was recently distinguished as national scenic road and building a series of bridges would likely discourage many people from visiting this part of NC and be a severe impact on important revenue for the state. This scenery is duplicated no place else in the world and it would be a shame to deprive future generations from enjoying this national treasure. We need to think seriously about how we alter this area with man's architectural influences that may not even be appropriate decisions.

Thanks for taking this under consideration and putting this project on hold for the next several years while we examine beach reclamation that many countries around the world are finding plausible alternatives to keeping areas aesthetically pleasing and safe for public use.

Gary Langner
913 205 5823

Technology will not replace teachers but teachers who do not use technology will be replaced. ~ Dr. Ray Clifford

COMMENT SHEET

**NC 12 – Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County**

NAME: Gerry Lebing
ADDRESS: PO 462
25962 NC Hwy 12 Waves NC 27982

E-MAIL: gerry@wmi.org

MY PREFERRED ALTERNATIVE IS:
 Bridge within Existing NC 12 Easement Alternative
 Bridge on New Location Alternative
 Other: _____
 No preference

THE REASONS FOR MY PREFERENCE ARE:
(It will help NCDOT's decision-making process if you are as specific as possible.)
Less environmental impact
lower cost
less impact on sound side watersports

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:
starting work ASAP

(This comment sheet continues on the other side.)

COMMENT SHEET

NC 12 – Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County

NAME: Karen Lebing
ADDRESS: 25962 NC Hwy 12
E-MAIL: klinlebing@gmail

MY PREFERRED ALTERNATIVE IS:
 Bridge within Existing NC 12 Easement Alternative
 Bridge on New Location Alternative
 Other:
 No preference

THE REASONS FOR MY PREFERENCE ARE:
(It will help NCDOT's decision-making process if you are as specific as possible.)

low environmental impact;
lower cost
lower impact on kitesurfing

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598

Phone: (919) 707-6077 FAX: (919) 212-5785
Email: PublicInvolvement2@ncdot.gov

Tonight, you also may drop written comments into the comments box or provide oral comments.
Feel free to attach additional pages to this form if you need more space
to present your comments.

(This comment sheet continues on the other side.)

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

NCDOT has done an excellent job
of presenting the alternatives and
should be complimented on it's effort

COMMENT SHEET

NC 12 - Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County

NAME: Scott Leggat

ADDRESS: P.O. Box 183

E-MAIL: nateye@yahoo.com

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
- Bridge on New Location Alternative
- Other: _____
- No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

I feel the long term ~~other~~ interests are best served with the bridge out in the sound. It will provide better views, a better drive and infrastructure for fish and other aquatic life.

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

impact on the Sound wildlife;
Access to the bird refuge

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

Thank you for allowing us to comment.

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
Phone: (919) 707-6077 FAX: (919) 212-5785
Email: PublicInvolvement2@ncdot.gov

Tonight, you also may drop written comments into the comments box or provide oral comments. Feel free to attach additional pages to this form if you need more space to present your comments.

(This comment sheet continues on the other side.)

Joyner, Drew

From: Lewis, Robert W
Sent: Thursday, January 09, 2014 10:38 PM
To: <irenen@mindspring.com>
Cc: Service Account – Public Involvement 2; Charbonneau, Mike R
Subject: Re: Visualizations of Phase IIb alternatives

Do you mean hearing maps or the rendering that was presented at formal hearing Wednesday night?
Sent from my iPhone

On Jan 9, 2014, at 7:19 PM, "IRENE C NOLAN" <irenen@mindspring.com> wrote:

Folks,

I can't seem to find the visualizations of the two alternatives on the website? That's the artists' or graphic artists' interpretation of what they might look like. Are they somewhere I'm not looking? Thanks.

Irene

IRENE NOLAN
Editor
The Island Free Press
www.islandfreepress.org
252-995-5323
Post Office Box 414
Buxton, N.C. 27920
editor@islandfreepress.org
irenen@mindspring.com

Email correspondence to and from this sender is subject to the N.C. Public Records Law and may be disclosed to third parties.

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

Putting an LA Freeway raised structure through Rodanthe will take a beautiful community with unparalleled ocean views and turn it into ugly chunks of concrete filled with graffiti. We don't need to turn Rodanthe into L.A.

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

Does our opinion really have an influence on the outcome?

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
Phone: (919) 707-6077 FAX: (919) 212-5785
Email: PublicInvolvement2@ncdot.gov

Tonight, you also may drop written comments into the comments box or provide oral comments. Feel free to attach additional pages to this form if you need more space to present your comments.

Joyner, Drew

From: David Lund <actsouth@embarqmail.com>
Sent: Friday, January 10, 2014 3:35 PM
To: Joyner, Drew
Cc: Service Account – Public Involvement 2
Subject: The Bonner Bridge problems at Oregon Inlet

Drew Joyner
NCDOT Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
E-Mail: djoyner@ncdot.gov; or PublicInvolvement2@ncdot.gov
Ph: 877-368-4908; or 919-707-6077

Dear Mr. Joyner:

There was an interesting article today in the Virginia Pilot in the Hampton Roads section on Page 3 regarding a number of problems in the Outer Banks that need solutions. Since we live about 90 minutes from the Outer Banks and visit there on occasion as well as going fishing out of Oregon Inlet on occasion, I thought I would try to help at least with the problems with the Bonner Bridge over Oregon Inlet. The basic problems appear to be sand erosion by some of the bridge supports and shifting sands affecting boat traffic through the inlet. When I saw a previous article, I decided to try to contact our wonderful Governor Pat McCrory via E-Mail on his Web-Site on 12/29/2013. To date I have never received any response, so I thought I would contact you based on the article.

My basic concern is the plan to build a new bridge at the cost of about \$200 million. That is a lot of money to spend if there are far less expensive solutions that might work and the money difference could be spent on other projects which might not have been done as a result.

This is what I sent to our Governor:

Dear Governor McCrory:

I was looking at the solution to fixing the current problems with the Bonner Bridge by Oregon Inlet. Rather than building a new bridge, how about widening and deepening the supports to the bridge so that the scouring can't weaken the bridge supports. Another option would be to build another support next to the ones that are encountering the worst scouring using the same technique. This would cost far less than building a whole new bridge.

After sending this to the Governor, I had another idea to share with him and you:

With all of the shifting sands caused by the waters in the inlet, how about making the sides of the inlet go further out into the ocean with large rocks so that there is less impact on the inlet and its affect on boats as well as perhaps the scouring issues?

Joyner, Drew

From: Joyner, Drew
Sent: Friday, January 24, 2014 10:46 AM
To: David Lund
Subject: RE: The Bonner Bridge problems at Oregon Inlet

Mr. Lund,

I am sorry for the delayed response. We receive a large volume of comments during our open comment period and typically address comments after the comment deadline at a meeting with the project team.

We really appreciate your input and will discuss it with the project team.

Sincerely,
Drew Joyner

From: David Lund [<mailto:actsouth@embarqmail.com>]

Sent: Wednesday, January 22, 2014 3:38 PM
To: Joyner, Drew
Cc: PublicInvolvement@ncdot.gov
Subject: Fw: The Bonner Bridge problems at Oregon Inlet

Dear Mr. Joyner:

No response back from you or any of your associates in almost 2 weeks. I guess you and the Governor aren't interested in saving the people of our wonderful state a couple of hundred million dollars which could be spent on something else. I would appreciate a response from you.

Thank you,

David Lund
----- Original Message -----
From: David Lund
To: djoyner@ncdot.gov
Cc: PublicInvolvement2@ncdot.gov
Sent: Friday, January 10, 2014 3:35 PM
Subject: The Bonner Bridge problems at Oregon Inlet

Drew Joyner
NCDOT Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
E-Mail: djoyner@ncdot.gov; or PublicInvolvement2@ncdot.gov
Fax: 919-212-5785
Ph: 877-368-4908; or 919-707-6077

Dear Mr. Joyner:

There was an interesting article today in the Virginia Pilot in the Hampton Roads section on Page 3 regarding a number of problems in the Outer Banks that need solutions. Since we live about 90 minutes from the Outer Banks and visit there on occasion as well as going fishing out of Oregon Inlet on occasion, I thought

I would try to help at least with the problems with the Bonner Bridge over Oregon Inlet. The basic problems appear to be sand erosion by some of the bridge supports and shifting sands affecting boat traffic through the inlet. When I saw a previous article, I decided to try to contact our wonderful Governor Pat McCrory via E-Mail on his Web-Site on 12/29/2013. To date I have never received any response, so I thought I would contact you based on the article.

My basic concern is the plan to build a new bridge at the cost of about \$200 million. That is a lot of money to spend if there are far less expensive solutions that might work and the money difference could be spent on other projects which might not have been done as a result.

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After sending this to the Governor, I had another idea to share with him and you:

With all of the shifting sands caused by the waters in the inlet, how about making the sides of the inlet go further out into the ocean with large rocks so that there is less impact on the inlet and its affect on boats as well as perhaps the scouring issues?

I sincerely hopes this helps. I would appreciate hearing back from you regarding your thoughts and if it helps.

David Lund
115 Cashie Drive
Hertford, NC 27944
Ph: 252-426-2303

I sincerely hopes this helps. I would appreciate hearing back from you regarding your thoughts and if it helps.

David Lund
115 Cashie Drive
Hertford, NC 27944
Ph: 252-426-2303

Joyner, Drew

From: Marcia Lyons <marcialyons0@gmail.com>
Sent: Tuesday, January 21, 2014 9:55 PM
To: Service Account – Public Involvement 2
Subject: Phase 2b comment

The preferred alternative buys some time but will still leave a transportation link vulnerable over time. Moving the road out over the sound is more realistic when considering coastal processes and sea level rise.

Marcia Lyons
Buxton, NC
Sent from my iPad

COMMENT SHEET

NC 12 – Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County

NAME: Marcia Lyons
ADDRESS: 2369d Hwy 1d - Rodanthe
E-MAIL:

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
- Bridge on New Location Alternative
- Other:
- No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

I prefer the bridge over the sound - looks natural + farther away from Ocean.

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

(This comment sheet continues on the other side.)

Joyner, Drew

From: James P Meyer <James.Meyer@revapharm.com>
Sent: Friday, January 24, 2014 4:23 PM
To: Service Account – Public Involvement 2
Cc: Hutchinson, Wes; Sheila Higdon; Shelley; Paula Babin; Thomas Kligge
Subject: Rodanthe Bridge Options

Mr. Joyner,
I am writing to you as a non resident homeowner of Hatteras Island and as President of the Miro Beach Home Owners Association. I want to express my objection to either of the bridge options and I ask you (NCDOT, NC, etc) to support or embrace the position of giving beach replenishment a chance. As you know, emergency nourishment has been approved for the S-turn and northern Rodanthe area. I would ask that any decision would be delay until the effects of this nourishment are evaluated for viability for a long term solution. "Beaches not Bridges"

- In my opinion either bridge option would be:
- Too expensive and in the long term not cost effective
 - Would expose the homes (particularly ocean side properties) to accelerated erosion and eventual destruction
 - Significant and immediate property value decline especially those properties along Rt 12 and Sound Front
 - Significant loss of business to existing business owners (Island Convenience, Rodanthe Surf Shop, Midgette Realty)
 - Significant negative and irreversible environmental impact on Pamlico Sound and Pea Island Wildlife refuge
 - Significant safety risk to swimmers, surfers, kite boarders, wind surfers and boaters

These objections are just a few of my overall concerns and I would appreciate your efforts to have these concerns entered into the public record. Thank you

Sincerely
Jim Meyer
23006 Chicamacomico Ct
Rodanthe NC
610 766 2057
Meyer998@me.com

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Joyner, Drew

From: Brenda J Morris <brexmor@optionline.net>
Sent: Friday, January 24, 2014 3:08 PM
To: Service Account – Public Involvement 2
Subject: Rodanthe Bridge Options

To whom it may concern,

[NOURISH NOW, BRIDGES NO!](#)

Due to the negative impact in terms of recreation, tax base, property value and public safety, a bridge in Rodanthe is a very bad idea.

Pumping the sand back on the beach, where it belongs, and maintaining a proper beach width is the most natural and cost effective way of providing both public beaches, which is the main reason that people reside and visit Hatteras Island, and maintaining protection for Route 12, the main road into Hatteras Island.

Please note: Beach Nourishment is by far the most common practice on the East Coast and has been successful for over 100 years!

Remember that pumping sand is nearly a continuous operation to keep the Oregon Inlet open. It just makes sense to provide this same service to save the coastline and Route 12.

Respectfully,

Robert R. Morris
29 White Birch Rd.S.
Pound Ridge, NY 10576
(914) 7644056



This email is free from viruses and malware because [avast!](#) Antivirus protection is active

Joyner, Drew

From: Willie Morris <williemorris@comcast.net>
Sent: Wednesday, January 22, 2014 3:39 PM
To: Service Account – Public Involvement 2
Cc: Wm-27936
Subject: comments regarding NC12 long term improvement

Mr. Drew Joyner-

Thank you and your associates for the informative presentations and hand-out materials.

Both my wife and I are in favor of the Bridge on New Location Alternative because we presume it will be safer from storms and island migration than the existing easement alternative, and therefore have a longer service period for return on investment.

I have been affiliated with Hatteras Island since 1954 when the initial NC12 road was opened and a ferry transported cars across Oregon Inlet. My family has been a property owner in Frisco since 1966. The shoreline on the oceanfront has migrated southwest approximately 1/3 of a mile in my 60 years knowing the island. The existing NC12 easement will be in the Atlantic in just a few years. We believe that a bridge structure in the Pamlico Sound will have a better prospect of survival and service availability than a similar bridge structure that exists in the more dynamic Atlantic surf.

Thank you for this opportunity of comment.

Regards,

William & Thereza Morris
PO Box 625
Frisco, NC 27936
804-833-3207

G-61

Joyner, Drew

From: Nicole Muller <jimmuller38@yahoo.com>
Sent: Wednesday, January 15, 2014 9:53 AM
To: Service Account – Public Involvement 2
Subject: Rodanthe Bridge

I support building the bridge thru the current right of way ASAP.

Thanks

COMMENT SHEET

**NC 12 – Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County**

NAME: TOM Murphy
ADDRESS: PO Box 147 Rodanthe
E-MAIL: _____

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
- Bridge on New Location Alternative
- Other: _____
- No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

- gets it away from the beach -
- will not need to be so high over the land
- less maintenance & local traffic
- projected height & concrete allow sunlight at angles & minimize impact on submerged vegetation

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

A 8' high "fence" over the sand -

(This comment sheet continues on the other side.)

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

25-30' height with existing
highway will be fairly insurmountable
make local traffic difficult -

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
Phone: (919) 707-6077 FAX: (919) 212-5785
Email: Publicinvolvement2@ncdot.gov

Tonight, you also may drop written comments into the comments box or provide oral comments. Feel free to attach additional pages to this form if you need more space to present your comments.

Joyner, Drew

From: Morris Neuman <neuman@speechsoft.com>
Sent: Friday, January 24, 2014 10:19 AM
To: Service Account – Public Involvement 2
Cc: Jer Mehta
Subject: Rodanthe Bridges

I believe that beach nourishment is the only practical and cost effective solution to maintaining highway 12 in Rodanthe. It has been proven to work in Nag head to stabilize the beach and halt erosion.

Either bridge choice does not address beach erosion which will eventually undermine either bridge option even other sections of highway 12 in Rodanthe.

All along the entire East coast of the USA every managing entity has determined that beach nourishment is required to maintain the most valuable resource a coastal area has, its beaches.

NC DOT should consider the entire bigger picture of the state it is serving not just 50 ft wide strip of blacktop. By working together with the state and federal agencies NCDOT could save hundreds of millions of dollars that I'm sure could be used at other sites where there are no other viable options.

I would at least propose that any decision is delayed until after the emergency nourishment is done to protect the S curves and monitor the situation and determine if in fact nourishment is a viable option.

It doesn't make sense to spend so much if there are lower cost options that can benefit so many more and the state as a whole.

Thanks
Morris Neuman
Speechsoft, Inc.
www.speechsoft.com
neuman@speechsoft.com
914-273-5560 x170

Joyner, Drew

From: Joseph F. Noce, CPA <lakeviewtax@comcast.net>
Sent: Monday, January 13, 2014 11:46 AM
To: Service Account – Public Involvement 2
Subject: NC 12 - Rodanthe Beach LT Improves comments
Attachments: 2014-01-13 NC 12 Beach Improvements Comments.pdf

Attention: Mr. Drew Joyner

Thank you for the opportunity to express my comments & concerns (see attachment).

Very truly yours,



Joseph F. Noce, CPA/PFS, ATA, ATP, ARA, CFP®
CERTIFIED PUBLIC ACCOUNTANT
PERSONAL FINANCIAL SPECIALIST
ACCREDITED TAX ADVISOR®
ACCREDITED TAX PREPARER®
CERTIFIED RETIREMENT ADVISOR®
CERTIFIED FINANCIAL PLANNER™

COMMENT SHEET

NC 12 - Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County

NAME: JOSEPH F. NOCE
ADDRESS: 714 HARDING HWY, CAROLYS POINT, NC 28529
E-MAIL: joenocce@hotmail.com

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
 Bridge on New Location Alternative
 Other: _____
 No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

- ① NC 12 BRIDGE WOULD FRAGMENT RODANTHE, ESPECIALLY MIRLA BEACH & CORONA SHORES COMMUNITIES.
- ② SOUND BRIDGE WOULD ENCOUNTER LESS RESISTANCE FROM ENVIRONMENTAL GROUPS & NORTH RODANTHE RESIDENTS & BUSINESS. FAR LESS IMPACT ON BUSINESSES & HOME OWNERS.
- ③ SOUND BRIDGE COULD EVENTUALLY BE EXTENDED/EXPANDED SHOULD ADDITIONAL BRACHES OCCUR BETWEEN BONNER BRIDGE & RODANTHE

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

OPEN END DESIGN ALLOWING EXTENDING BRIDGE AS OUTLINED IN
③ ABOVE

(This comment sheet continues on the other side.)

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

BRIDGE WITHIN RT 12 EASEMENT DESTROYS "S" CURVES ATTRACTION, MIRLO BEACH, DOZENS OF HOMES, SEVERAL BUSINESSES & WOULD CREATE A HOST OF NEW PROBLEMS. THE AREA UNDER THE BRIDGE COULD ATTRACT CRIME, DRUG TRAFFIC ETC DUE TO THE "OFF-THE-BEATEN-PATH" LOCATION.

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
Phone: (919) 707-6077 FAX: (919) 212-5785
Email: PublicInvolvement2@ncdot.gov

Tonight, you also may drop written comments into the comments box or provide oral comments
Feel free to attach additional pages to this form if you need more space
to present your comments.

COMMENT SHEET

**NC 12 - Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County**

NAME: Jerry Norris
ADDRESS: P.O. Box 106, Salvo, N.C. 27972

E-MAIL: jerrywnorris@earthlink.com

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
- Bridge on New Location Alternative
- Other:
- No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

Less impact on existing houses

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

intersecting with Hwy 12 on northern end of bridge should be extended further NORTH to alleviate the overpass to sand cover we experience

(This comment sheet continues on the other side.)

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

There would be a devastating impact on the existing properties with a bridge within the existing Hwy 12 Easement

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
Phone: (919) 707-6077 FAX: (919) 212-5785
Email: PublicInvolvement2@ncdot.gov

Tonight, you also may drop written comments into the comments box or provide oral comments. Feel free to attach additional pages to this form if you need more space to present your comments.

Joyner, Drew

From: Stephen Novak <wildlawnc@gmail.com>
Sent: Friday, January 24, 2014 6:39 PM
To: Service Account - Public Involvement 2
Subject: NCDOT Rodanthe Bonner Bridge Phase 2b comments
Attachments: mirlo bridge comments.docx

Please find attached and pasted in below my comments on the proposed Rodanthe Breach long-term improvements. Thanks.

January 24th, 2014

Mr. Drew Joyner (via email at: PublicInvolvement2@ncdot.gov)

To Whom it May Concern:

Please accept these comments on the NCDOT proposal to address the Rodanthe "hot spot", also known as Rodanthe Breach Long-Term Improvements (Bonner Bridge -Phase II b).

As a preliminary matter, I applaud the NCDOT for a thorough review and analysis of the complicated issue of how to handle the Mirlo Beach/Rodanthe area. A long history of overwash, flooding, and proximate private development all contribute to the complexity of a continued reliable presence for NC 12 along this stretch of the Outer Banks.

Of the two build options presented for review--construction within the existing right of way (preferred by DOT) or bridge in new location--I would support the bridge in new location. While neither option is ideal, the real-life issues and changeable environment in the area dictate quick action. The build in existing alternative appears, especially after viewing the projections in the EA and those presented at the series of open houses, to present too great a change to the character of the human environment in the Rodanthe/Mirlo Beach area. A bridge/elevated roadway of that height seems out of keeping and simply incompatible with the existing area.

However, the terminus of the bridge in new location alternative, currently projected for the Liberty Gas station, needs to be revisited. Under the current planning the station would have to be removed. That gas station and store and restaurant is a valuable resource in the area for both summer visitors and year-round residents. Every effort should be made to create a design scenario where the station is allowed to remain and serve the visitors and residents of the Rodanthe area.

Additionally, I am concerned about what will happen to the north end of Rodanthe/Mirlo Beach after construction of the new bridge. In the current EA, should this alternative be selected, NCDOT anticipates ceding control of the existing right of way from Mirlo Beach boundary north to the beginning of the new bridge, a distance of several miles. It is my understanding that this would be sort of a trade-off in hopes of getting Pea Island National Wildlife Refuge (PINWR) and the Department of Interior (DOI) to agree to the new right of way acreage that would be required for construction of this alternative.

While I understand how this type of give-and-take is necessary in these types of construction projects dealing with multiple federal agencies, **I request that you consider keeping a short stretch of the NCDOT easement heading north from Mirlo beach.** This area has long been culturally and socially significant to both visitors and local residents. Surfing, fishing, simply hanging out on the beach are all popular uses in this area. While the unfortunate overwash and erosion of the past few years have hampered this somewhat, the potential is still there for much public recreational opportunities. **I request that NCDOT create a parking area at the northern end of town to provide the needed access to this area.** Access to the homes in Mirlo Beach will already be in the plans, and a new parking area would not be too much of an added expense or burdensome considering the hefty price tag for this project. **Further, up to a mile of existing right of way could be maintained in some fashion for access to this vibrant section of Pea Island.** This would help alleviate the limited beach access and parking in the Rodanthe area and help build good-will to NCDOT after making the tough decisions required for this project. Regardless of which alternative you choose, somebody is going to be mad.

In the alternative, should NCDOT select to build in the existing right of way, I would again request some sort of parking area in the northern area of Rodanthe be created. Locating parking under the proposed roadway and/or near the planned frontage roads would seem to be an efficient use and beneficial to the public for their use and enjoyment. Further, should this alternative be selected, creating and maintaining some sort of access to the stretch of bridged area in PINWR is essential. This area has historically seen some of the highest use by visitors and residents, and as it currently is planned, that would disappear. The only way to access this area would be to slog along the beach either north from Rodanthe (where there will be no parking) or south for the beginning of the new bridge. **Some accounting for this significant loss of recreational access is necessary, does not appear anywhere in the EA, and is a deficiency that must be remedied before plans are finalized for this important project.**

Thank you for allowing me to comment. Please feel free to contact me if necessary, and keep me informed of future updates to the project. I can be contacted at:

Stephen Novak, PO Box 1193, Nags Head, NC 27959. Email: wildlawnc@gmail.com

Sincerely,



Stephen H. Novak

Stephen Novak
wildlawnc@gmail.com

January 24th, 2014

Mr. Drew Joyner (via email at: PublicInvolvement2@ncdot.gov)

To Whom it May Concern:

Please accept these comments on the NCDOT proposal to address the Rodanthe "hot spot", also known as Rodanthe Breach Long-Term Improvements (Bonner Bridge – Phase II b).

As a preliminary matter, I applaud the NCDOT for a thorough review and analysis of the complicated issue of how to handle the Mirlo Beach/Rodanthe area. A long history of overwash, flooding, and proximate private development all contribute to the complexity of a continued reliable presence for NC 12 along this stretch of the Outer Banks.

Of the two build options presented for review--construction within the existing right of way (preferred by DOT) or bridge in new location--I would support the bridge in new location. While neither option is ideal, the real-life issues and changeable environment in the area dictate quick action. The build in existing alternative appears, especially after viewing the projections in the EA and those presented at the series of open houses, to present too great a change to the character of the human environment in the Rodanthe/Mirlo Beach area. A bridge/elevated roadway of that height seems out of keeping and simply incompatible with the existing area.

However, the terminus of the bridge in new location alternative, currently projected for the Liberty Gas station, needs to be revisited. Under the current planning the station would have to be removed. That gas station and store and restaurant is a valuable resource in the area for both summer visitors and year-round residents. Every effort should be made to create a design scenario where the station is allowed to remain and serve the visitors and residents of the Rodanthe area.

Additionally, I am concerned about what will happen to the north end of Rodanthe/Mirlo Beach after construction of the new bridge. In the current EA, should this alternative be selected, NCDOT anticipates ceding control of the existing right of way from Mirlo Beach boundary north to the beginning of the new bridge, a distance of several miles. It is my understanding that this would be sort of a trade-off in hopes of getting Pea Island National Wildlife Refuge (PINWR) and the Department of Interior (DOI) to agree to the new right of way acreage that would be required for construction of this alternative.

While I understand how this type of give-and-take is necessary in these types of construction projects dealing with multiple federal agencies, **I request that you consider keeping a short stretch of the NCDOT easement heading north from Mirlo beach.** This area has long been culturally and socially significant to both visitors and local residents. Surfing, fishing, simply hanging out on the beach are all

popular uses in this area. While the unfortunate overwash and erosion of the past few years have hampered this somewhat, the potential is still there for much public recreational opportunities. **I request that NCDOT create a parking area at the northern end of town to provide the needed access to this area.** Access to the homes in Mirlo Beach will already be in the plans, and a new parking area would not be too much of an added expense or burdensome considering the hefty price tag for this project. **Further, up to a mile of existing right of way could be maintained in some fashion for access to this vibrant section of Pea Island.** This would help alleviate the limited beach access and parking in the Rodanthe area and help build good-will to NCDOT after making the tough decisions required for this project. Regardless of which alternative you choose, somebody is going to be mad.

In the alternative, should NCDOT select to build in the existing right of way, I would again request some sort of parking area in the northern area of Rodanthe be created. Locating parking under the proposed roadway and/or near the planned frontage roads would seem to be an efficient use and beneficial to the public for their use and enjoyment. Further, should this alternative be selected, creating and maintaining some sort of access to the stretch of bridged area in PINWR is essential. This area has historically seen some of the highest use by visitors and residents, and as it currently is planned, that would disappear. The only way to access this area would be to slog along the beach either north from Rodanthe (where there will be no parking) or south for the beginning of the new bridge. **Some accounting for this significant loss of recreational access is necessary, does not appear anywhere in the EA, and is a deficiency that must be remedied before plans are finalized for this important project.**

Thank you for allowing me to comment. Please feel free to contact me if necessary, and keep me informed of future updates to the project. I can be contacted at:

Stephen Novak, PO Box 1193, Nags Head, NC 27959. Email: wildlawnc@gmail.com

Sincerely,



Stephen H. Novak

Joyner, Drew

From: BILL OLANDER <wolojobo@ameritech.net>
Sent: Monday, January 13, 2014 5:58 PM
To: Service Account - Public Involvement 2
Subject: NC 12 - Rodanthe Breach Long Term Improvements
Attachments: NC 12- Rodanthe Breach Comment Sheet.pdf

Dear Mr. Joyner,
Please accept my comments for this very important project. Access to Hatteras Island cannot be lost.
Thank you,

BILL OLANDER

COMMENT SHEET

**NC 12 – Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)**

Public Hearing
TIP No. B-2500B
Dare County

NAME: WILLIAM OLANDER
ADDRESS: 48191 SERENITY CIRCLE, JUNCTION, NC 27920
E-MAIL: wolojobo@ameritech.net

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
- Bridge on New Location Alternative
- Other: _____
- No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

- 1) LESS DISTURBANCE TO NATURAL SHORELINE PROCESSES
- 2) LESS IMPACT TO ISLAND ACCESS DURING CONSTRUCTION
- 3) LONGER TERM STABILITY OF SURROUNDING AREA

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

PROVISIONS FOR PUBLIC USE PULL-OFF AREAS IN THE PANLICO SOUND FOR VISTAS OR RECREATION

(This comment sheet continues on the other side.)

COMMENT SHEET

NC 12 - Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County

NAME: Wesley S. Payne, AIA, NCARB

ADDRESS: 2241 Seacull St., Rodanthe, NC, 27968

E-MAIL: Wesley.S.Payne@architectofreanthe.com

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
- Bridge on New Location Alternative

Other: BRIDGE W/ BEACH NOURISHMENT
 No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

EXISTING NC12 OPTION WILL DESTROY MILES BEACH, COMPLETELY IMPROVED PUBLIC SAFETY W/ RESPECT TO BEACH PATRONS & SURFERS AND ULTIMATELY PREVENT THOSE OF US ON SEACULL ST. FROM EVER MOVING OUR HOUSES AS A RESULT OF BEACH EROSION

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

PROVIDING SOME LEVEL OF BEACH NOURISHMENT AT THE NORTHERN END OF RODANTHE TO PRESERVE THE MILD BEACH AREA AND MAINTAIN THE "TURN-AROUND" IN THE PREFERRED ALTERNATIVE

(This comment sheet continues on the other side.)

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

- 1) TOO CLOSE TO THE ATLANTIC
- 2) NOISE AND OBSTRUCTIONS IN RODANTHE

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

EITHER OPTION IS A HIGH PRIORITY BEFORE ISLAND ACCESS IS LOST. FERRY SERVICE IN THE SHALLOW WATERS OF THE PARADISE SOUND IS IMPRACTICAL AND UNDEFENDABLE.

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
 NCDOT - Human Environment Section
 1598 Mail Service Center
 Raleigh, NC 27699-1598
 Phone: (919) 707-6077 FAX: (919) 212-5785
 Email: PublicInvolvement2@ncdot.gov

Tonight, you also may drop written comments into the comments box or provide oral comments. Feel free to attach additional pages to this form if you need more space to present your comments.

Joyner, Drew

From: Charles Peele <cepeele46@gmail.com>
Sent: Friday, January 10, 2014, 6:02 PM
To: Service Account - Public Involvement 2
Subject: Rodanthe Phase II/B

Thank you for conducting the meeting in Buxton this week and for inviting opinions for all citizens.

I live in Frisco and have to travel NC 12 for most everything I need. I support the bridge option that can be completed the quickest.

I built my retirement home in Frisco in 2004. It is the only home I have. It represents a substantial part of my net worth. I am 67 years old now. Within the next ten years I will need to sell my home and move to an assisted living center where I already have a reservation for my wife and me. If transportation to Hatteras Island is not improved, it will make it impossible to sell my home. Who would want to live here. The people of Rodanthe are not the only citizens who have property investments that will be influenced by the outcome of the NC 12 improvements. Every citizen of Hatteras Island and Ocracoke Island are risking their property values on the NC 12 improvements. I feel sorry for the residents who must look at the bridge, but I didn't hear anyone speak up for those of us downstream that can be financially ruined by the failure of access to our properties.

Bridges in the FL Keys are beautiful. Windmills are pretty to me but others object. If we needed a lighthouse in Buxton, it could never be rebuilt because some groups would object. Let's move on. Build use a road system please.

Charles and Susan Peele
50033 Live Oak Lane
PO Box 369
Frisco, NC 27936

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

1) BRIDGE UNDER CONSTANT WAVE ACTION WHICH HAS NEVER BEEN TAKEN WHAT IF THE ENGINEERS ARE WRONG?
2) WE WILL NOT BE ABLE TO RELOCATE OUR HOMES OFF OF SEASIDE ST.

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

1) YOU ARE DESTROYING OUR PROPERTY VALUES.
2) YOU ARE ENDANGERING PUBLIC SAFETY AND WEARE
3) YOU ARE PROHIBITING US FROM RELOCATING OUR HOMES.

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
Phone: (919) 707-6077 FAX: (919) 212-5785
Email: PublicInvolvement2@ncdot.gov

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COMMENT SHEET

**NC 12 - Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County**

Joyner, Drew

From: petemi21 <pgricards@msn.com>
Sent: Tuesday, January 21, 2014 8:27 PM
To: Service Account - Public Involvement 2
Subject: Beach Nourishment for Rodanthe

Please save our beach. This is a wise investment for the state of North Carolina. Sincerely, Peter and Charlene Ricards- homeowners

NAME: JAMES F. + VICKI W. PERSON

ADDRESS: P.O. BOX 195, OCHOCORE NORTH CAROLINA 27960
~~EMMIE~~ RETURNED TO OCHOCORE 6 YEARS AGO FROM RICHMOND VIRGINIA + WASHINGTON D.C TO ENJOY THE BEAUTY

MY PREFERRED ALTERNATIVE IS: OF TAKE OUTER BANKS + ESPECIALLY OCHOCORE. ITS TIME TO GET
 Bridge within Existing NC 12 Easement Alternative
 Bridge on New Location Alternative
 No preference

THE REASONS FOR MY PREFERENCE ARE:
(It will help NCDOT's decision-making process if you are specific as possible.)

Let me first say that the amount of time spent on this project is appalling. This should have been addressed 25 yrs ago. The claim is the best alternative for solving the problem for future generations. Patch work (S-curve) doesn't work, neither do the other alternatives.

MY COMMENTS FROM BACKSIDE OF POSTER:

MY PREFERRED ALTERNATIVE-COULD BE IMPROVED BY:

When Hwy 12 is closed another large problem is medical transportation. How a first responder + volunteer fireman in Hatteras is out when about 100 people by ambulance to the Outer Banks (best in N. Carolina) is a huge expense. We have to fly people to Greenville-NC (best low cost airport Va (NIGHTLY) at a cost of \$1,000.00 to be put on the island is totally unacceptable. But most patients + operators could care less.

(This comment sheet continues on the other side.)

COMMENT SHEET

NC 12 – Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County

NAME: Jack Painter
ADDRESS: PB 250 Avon NC 27915 (39355 Tanager Dr)
E-MAIL: jesandjacktwo@earthlink.net

- MY PREFERRED ALTERNATIVE IS:
- Bridge within Existing NC 12 Easement Alternative
 Bridge on New Location Alternative
 Other: _____
 No preference

THE REASONS FOR MY PREFERENCE ARE:
(It will help NCDOT's decision-making process if you are as specific as possible.)
The definition of insanity is to do the same thing over & over again, expecting a different result. Move the road away while you still can!

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:
Ensure that property access is maintained as long as humanly possible

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:
Mr. Drew Joyner
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
Phone: (919) 707-6077 FAX: (919) 212-5785
Email: PublicInvolvement2@ncdot.gov

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(This comment sheet continues on the other side.)

Joyner, Drew

From: bob rensch <renschbob49@gmail.com>
Sent: Friday, December 20, 2013 6:40 PM
To: Service Account – Public Involvement 2
Subject: Hatteras Island Preferred alternative The bridge on new location alternative)

Please bridge the new location (2.6 mile bridge in Pamlico Sound bypassing a portion of northern Hatteras Island)..... My husband and I own a lot of property on Hatteras Island and need to be able to get to it....my ancestors came to the island 400+ years ago.....it is terrible what the SELC has gotten away with for the past 20+ years.....I would really prefer the 17 mile bridge in the sound for the future (because of the cost to keep the road open on the northern part of the island) - but I would be happy for now with the 2.6 mile bridge. Carol Hooper Rensch,1506 Walnut Ave.,,Chesapeake, Va.23325

Joyner, Drew

From: KIMBERLY ROBERTSON <peaisland@embarqmail.com>
Sent: Saturday, January 11, 2014 11:05 AM
To: Service Account – Public Involvement 2
Subject: Bridge options for Hatteras~

Hi Drew,
I attended both meetings on Hatteras last Wed. and I met a woman, Elise that I was hoping to be able to e-mail. Can you forward my e-mail to her or let me know what her e-mail is? She was extremely helpful in understanding the potential projects under consideration. Thanks~Kim Robertson~ Salvo resident and business owner

CenturyLink Webmail

peaisland@embarqmail.com

Bonner Bridge Replacement Project Phase 1b~Rodanthe

Fri, Jan 24, 2014 03:52 PM

From : KIMBERLY ROBERTSON <peaisland@embarqmail.com>
Subject : Bonner Bridge Replacement Project Phase 1b~Rodanthe
To : peaisland <peaisland@embarqmail.com>

Kim Robertson
27766 HWY 12
Salvo, NC
Resident and Business Owner~Pea Island Art Gallery

Phase 1b- My Preference is bridge on New Location (Sound) :

Public Safety #11 I don't think having a bridge that is fully intended to be in the surf zone is reasonable. There is no other place that I know of that has the same conditions as this part of Hatteras. Lives/livelihoods are at stake. We cannot afford to be guinea pigs. Once the bridge is in the ocean it could be difficult and expensive to maintain and potentially unsafe for maintenance workers. It is likely to be an attractive public nuisance that will endanger the lives of people who choose to recreate around that area. It could also endanger the people who have to make rescue attempts. The Sound alternative could eliminate most of these issues as the Sound does not have the forceful wave action that occurs at the S-Curves area. I feel the aesthetics of having an elevated bridge at the proposed height will be detrimental to the properties of Mirlo Beach and also the overall experience of a person visiting the area. It is a monolithic structure that is not in keeping with the traditional Hatteras seashore experience and although the Sound bridge would also affect that I believe it would be to a much lesser degree and may actually offer a viewpoint on the drive in that would give a lovely vantage point. Of the two options it appears that business and residences/rentals would be impacted overall to a much lesser negative degree with the Sound bridge. I am a windsurfer and I have many friends who do watersports and the discussion has been that windsurfing would be only slightly to not at all affected while kite surfing would be more heavily impacted. In my opinion there are so many places on Hatteras to do these sports that the effect would be negligible. It may affect sound side rentals in that area for kiting in particular. The bridge is going to affect the sunset view but I don't think it will necessarily be negatively. It will be so far out in the sound that it probably won't be a major issue except for those homes that are close to where it approaches land to reconnect again with HWY 12.

The small trade off of land on the Northern end of the Sound bridge alternative for the Pea Island Wildlife Refuge sounds like a win for them. They will get so much more in return when that road is taken up from S-Curves back to the Northern terminus where it reconnects with the existing HWY 12. I also believe in letting Mother Nature take her course in this area. It's going to happen anyway and I believe wash troughs will allow water to do it's dance and potentially avoid future "tub filling" experiences like we had during Irene that caused so much damage/destruction! I spoke with a professional fisherman here and think fishing will be great near the bridge once the aquatic life returns which should happen rather quickly. All kinds of things grow on the piles and attract fish. Though it disturbs the area during construction it sounds like the net gain will be great in a short period of time. I think the general flow of traffic back to the Mirlo Beach area with the bridge in the Sound is much better for everyone and doesn't take out Liberty Gas Station which has been a huge business out here and is our only year round gas/beach items/foodstuffs combo store in the area. I think residents and renters alike would be happy to see them remain in business. We need to get the bridges in place for everyone's sake! Visually, safety wise, maintenance wise, cost wise in the long haul, I think the bridge in the Sound offers the most net benefits with the least impact for the over all greater good. I don't believe in beach re-nourishment here. Thanks for your time and efforts. It is greatly appreciated.
Kim :)

COMMENT SHEET

NC 12 - Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County

NAME: Leslie J Robinson
ADDRESS: Po Box 62

E-MAIL: lesliejanrobinson@hotmail.com

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
- Bridge on New Location Alternative
- Other:
- No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

- ① The existing Rt 12 bridge is ugly.
- ② We need to keep our one year round gas station

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

- ① Maybe add a hump to the bridge for kite boarders + boats to go under

(This comment sheet continues on the other side.)

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

We could probably use another small parking lots North of the new new inlet bridge. The existing parking lot is currently used by a lot of tourists. If there isn't enough parking the side of the road will be used all summer.

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
Phone: (919) 707-6077 FAX: (919) 212-5785
Email: PublicInvolvement2@ncdot.gov

Tonight, you also may drop written comments into the comments box or provide oral comments. Feel free to attach additional pages to this form if you need more space to present your comments.

Joyner, Drew

From: Peter Romeyn <romeyn71@gmail.com>
Sent: Saturday, December 21, 2013 8:17 PM
To: Service Account – Public Involvement 2
Subject: Bonner bridge

I support the new location alternative for the Bonner bridge. Even better would be to simply accept the fact that the outer banks will always shift location and continue to use the ferry. Take the money for the new bridge and give it to the public schools.
Peter Romeyn
4116 Talcott Drive
Durham, NC

From: Orville Scarborough [<mailto:orvilles@outerbeaches.com>]
Sent: Thursday, January 16, 2014 4:22 PM
To: Service Account – Public Involvement 2
Subject: Mirlo Beach Long Tern Improvements

Hello Mr. Joyner,

Thank you for the presentation in Buxton concerning the long term improvements at Mirlo beach. I am in favor of keeping the bridge in the existing right of way. I believe this will be the fastest means of getting safe access on and off of the island for residents and visitors alike. This situation is no longer a problem of convenience but a safety issue. We need the bridge built now!

After the meeting I had spoken with you about the possibility of getting the slide show that you had used. Would it be possible for you to email that to me? I would like to use it to educate coworkers and other members of the community.

Thank you in advance for the help. I greatly appreciate everything that you and the other members of the NCDOT have done for the residents of Hatteras Island.

Best Regards,

Orville

Orville Scarborough
Assistant Manager, Waves Office

Outer Beaches Realty 800 627-3150 x3409
PO Box 420 252-987-2803 (Fax)
Waves, NC 27982

OrvilleS@outerbeaches.com
www.outerbeaches.com

My normal days off are Thursday and Friday. If you are contacting me during this time, I will respond to you as soon as I return to the office.

COMMENT SHEET

**NC 12 – Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County**

NAME: Diane Shepherd
ADDRESS: P.O. Box 438 Rodanthe NC 27968
E-MAIL: Shepherd.sherpherd@gmail.com

MY PREFERRED ALTERNATIVE IS:
 Bridge within Existing NC 12 Easement Alternative
 Bridge on New Location Alternative
 Other:
 No preference

THE REASONS FOR MY PREFERENCE ARE:
(It will help NCDOT's decision-making process if you are as specific as possible.)
I just want it done as quickly as possible
we need this to improve our economy.

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

(This comment sheet continues on the other side.)

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
Phone: (919) 707-6077 FAX: (919) 212-5785
Email: PublicInvolvement2@ncdot.gov

Tonight, you also may drop written comments into the comments box or provide oral comments.
Feel free to attach additional pages to this form if you need more space
to present your comments.

Joyner, Drew

From: Scott Starsman <SStarsman@avineon.com>
Sent: Friday, January 24, 2014, 8:43 AM
To: Service Account – Public Involvement 2
Cc: Smyre, Elizabeth A
Subject: Nourishment Vs. Bridges in Rodanthe

Mr. Joyner,

I'm Scott Starsman, a property owner in Mirlo Beach in Rodanthe, NC and hold a certificate in Coastal Engineering from ODU. As you know, our access to and from Hatteras Island has been difficult over the last two years and I understand NCDOT is working with various federal agencies to develop a solution in the form of either a bridge or nourishment.

As a coastal engineer and property owner in Rodanthe, nourishment is, by far, the superior solution in technical, cost, and environmental factors. The effectiveness of nourishment in protecting coastal structures has been well-documented and demonstrated locally in the nourishment projects in Virginia Beach and Nags Head. The lifecycle cost of nourishment is also much less than that of bridges. Nourishment can often be completed for \$1-3 M per mile (without litigative interference) of beach with renourishment projects being necessary anywhere from 3-10 years, depending on the erosion rates. A replacement bridge would be vastly more expensive over its lifecycle and ultimately be as exposed to ocean effects as the current road. Environmentally, nourishment is an excellent solution. Studies have shown that bird and turtle nesting activity increases linearly with the dry beach width. Nourishment provides precisely that and ocean life fares very well on nourished beaches.

I ask that you consider nourishment as a permanent solution to the Mirlo Beach road issue. It is the best solution by nearly every scientific and financial measure.

Thanks,
Scott

R. Scott Starsman, PhD
Avineon
Director, Defense Systems
sstarsman@avineon.com
(w) 703-671-1900 x286
(m) 757-232-7043

Joyner, Drew

From: Brittany Stoltz <bertleigh@gmail.com>
Sent: Monday, January 06, 2014, 1:41 PM
To: Service Account – Public Involvement 2
Subject: Taxes

Hello,

My family and I live in one of the houses in the plans for the beltway. Our address is 4948 Davis Rd Winston Salem 27105, and I believe we're in section C of the plans. I was talking with a real estate agent the other day, and he said that in 2008 the property taxes of the beltway properties was lowered to 10%. Currently my husband and I are paying 50%, so I wanted to check and see if we have been over paying these 5 years.

If you have an answer for me that would be wonderful, or if you could direct me to someone who could help us out, I'd appreciate it!

Thanks,
Brittany Stoltz

COMMITTEE SHEET

NC 12 - Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing

TIP No. B-2500B
Dare County

NAME: Eric D. Stump
ADDRESS: 26248 Hwy 12 Salvo N.C. 27972
E-MAIL: stumpbugz@earthlink.net

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
- Bridge on New Location Alternative

Other: Abolishment First/New Location Last/Revert
 No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

Abolishment First this will not only stabilize the road but help the area all the way south of the campground that are in trouble. No need for a bridge if the ocean front of the village continues to deteriorate. Much less impact than construction.

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

If a bridge must be built the sound "New location" being would be the lesser of the two evils. No one has talked about listening to the tires hitting the gaps in the bridge all day every day.

(This comment sheet continues on the other side.)

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

If a bridge is built the existing Portion of Hwy 12 should be left similar to the way old 64 sections remain for recreation/access/parking. This 2 1/2 mile stretch is where a lot of people that

HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

come to recreate in Rodanthe go to. future plans are to eliminate this area, old new in lot parking lot and the ocean side parking lot. All 3 of these areas cannot be accessed from one location. Those people that pull off the road are a large draw to this Island keep that in mind. Thanks

Eric Stump

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
 NCDOT - Human Environment Section
 1598 Mail Service Center
 Raleigh, NC 27699-7598

Phone: (919) 707-6077 FAX: (919) 212-5785
 Email: PublicInvolvement2@ncdot.gov

Tonight, you also may drop written comments into the comments box or provide oral comments to present your comments.
 Feel free to attach additional pages to this form if you need more space

**NC 12 - Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)**

**Public Hearing
TIP No. B-2500B
Dare County**

NAME: Valerie H. Stump
ADDRESS: P.O. Box 88, Rodanthe, NC 27968
Mail: P.O. Box 88, Rodanthe, NC 27968
E-MAIL: Vstump8388@gmail.com

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
 Bridge on New Location Alternative

Other: Bridge on New Location A.H. with Beach Nourishment

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

I am concerned about the effects on wildlife, as well as the unappealing view of the bridge in the ground level. I think it is the least detrimental of the three options. I chose this option because I strongly dislike the bridge coming directly into Minto Beach.

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

Implementing beach nourishment in my opinion, is an essential key to that livelihood and prosperity of Hatteras and Curacoke islands, regardless of which bridge is built.

(This comment sheet continues on the other side.)

Joyner, Drew

From: Stephanie Sweeney <sjsweeneydmd@gmail.com>
Sent: Friday, January 24, 2014, 8:39 PM
To: Service Account - Public Involvement 2
Subject: Beaches not bridges

I would like to voice my opinion that the livelihood of Hatteras Island is based on tourism to our beaches. Take away Pea Island & Miro beach as public access beaches and you will hurt the hardworking people of the island, not to mention all the home owners in Northern Rodanthe which will be affected by either bridge. A majority of the tourism in Rodanthe, Waves & Salvo is based on kiteboarding and windsurfing groups vacationing here. These bridges will ruin the area for these sports. What is now the premier destination in the continental US for these growing sports will be gone. These are not in expensive sports either. Kitesurfing gear is easily \$5,000 to get in to the sport. Many kite surfers vacationing here are doctors, lawyers, & other professionals. These are exactly the clientele that allow Dare county such a large tax revenue. These vacationers will not return once these bridges are built. Instead it will be a destination for the trailer park set alone. NC will lose money if tourism reverts back to that. Please consider the alternative. Many of the Northeastern states beaches have used beach nourishment for the long term survival of their beach towns. Please reconsider beach nourishment as an option or at least delay making any decisions until we see the success or failure of the temporary beach nourishment.

Thank you for your consideration,
 Dr. Stephanie Sweeney

Joyner, Drew

From: Roseann Verrecchio <Roseann.B.Verrecchio@gsk.com>
Sent: Wednesday, January 22, 2014 9:12 AM
To: Service Account – Public Involvement 2
Subject: Public Comment>>>>>>Bridges in Rodanthe

Importance: High

- 1. More is at stake than one or two bridges.** This decision will (a) irreversibly change the outer banks of North Carolina and (b) will become the precedent for future decisions about erosion hot spots. Beach nourishment, in the short run, buys needed time to make a fully informed decision of this magnitude.
- 2. It is premature to rule out beach nourishment.** As you may know, from others at NCDOT or from visiting our website (<https://sites.google.com/site/mirlobeach/home>), the MBHOA is a strong proponent of beach nourishment, and specifically the need to conduct the research necessary to get the science and economics right about nourishment. With all due respect to the experts consulted by the merger team, their opinions are just that -- opinions. With the exception of Wimble Shoals, there is little hard data about sand sources (such as Platt Shoals), nor is there data about the effectiveness of nourishment on Hatteras Island (unless there is unreleased data from the small scale nourishment project at S-curves several years ago). We will have good data about Nags Head in a year or two. But right now, the science is weak at the local level of this "hot spot" -- in contrast to what is known at larger scales of time and geography. It is the local data that is critical.

- 3. The FEIS acknowledges that bridges in North Rodanthe will cause economic damage, but the extent of this damage has not been fully quantified and is an underestimate.** The FEIS quantified three types of economic damage: tax base, access to Pea Island, and disrupted access to all of Hatteras Island. The tax base estimate is a gross underestimate because it considered only the properties acquired for bridge construction. The much greater loss to the tax base will be due to the inevitable reduction in all property values in North Rodanthe (approximately 150 properties, inclusive of undeveloped lots). No quantification of this loss was included. Even qualitatively the only discussed damage to North Rodanthe was disrupted views of ocean, island, and sound (which are substantial). The destruction of the beach itself was not considered (see #4 below). Moreover, by changing the experience of entering Hatteras Island and reducing access to the island by visitors and local residents, the damage may be much more enduring and extensive than reduced rental and property value in North Rodanthe. It may reduce the attractiveness of Hatteras Island as a whole. The FEIS estimated that a breach of NC 12 that cut off Hatteras Island would result in an economic loss of \$110 million. Thus, as a crude estimate, if the long term reduction in the attractiveness of Hatteras Island was 10%, the economic loss would be \$11 million annually (or \$550 million over 50 years, undiscounted). All of these damages could and should have been quantified by appropriate economic and marketing analyses; however, this has not been done.

- 4. The 35' bridge alternative that uses the current NC 12 easement in North Rodanthe will irrevocably destroy the beach.** This is likely to happen rapidly, beginning almost immediately in the Refuge and spreading north and south, depending on storms and erosion rates, as the shoreline migrates westward. According to Beth Smyre, it is expected that (without nourishment) the bridge will be "in the surf" for most of its 50 year lifetime. Thus, the beach itself is being sacrificed, and this is the most extreme form of economic and environmental damage. Moreover, plings on the beach and in the surf will create major threats to the safety of swimmers. This type of beach destruction is discussed the FEIS, mainly as a threat to wildlife, but seems to not carry as much weight as it should. If this is the precedent for the future, the legacy of this decision will literally be the destruction of a large portion of outer bank beaches over the next 10 to 100 years (during which time erosion and sea level change are expected to create similar threats to NC 12 at many other locations).

The above was provided by Wes Hutchinson, Vice President of the Mirlo Beach Homeowners Association.

Thank you for this opportunity to provide comment.

Roseann B Verrecchio
Resident Mirlo Beach Homeowner

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From: Roseann Verrecchio [<mailto:Roseann.B.Verrecchio@gsk.com>]
Sent: Wednesday, January 22, 2014 10:35 AM
To: Smyre, Elizabeth A
Subject: Public Comment>>>>>>Bridges in Rodanthe
Importance: High

The following was provided by Wes Hutchinson, Vice President of the Mirlo Beach Homeowners Association and bears repeating.

- 1. More is at stake than one or two bridges.** This decision will (a) irreversibly change the outer banks of North Carolina and (b) will become the precedent for future decisions about erosion hot spots. Beach nourishment, in the short run, buys needed time to make a fully informed decision of this magnitude.
- 2. It is premature to rule out beach nourishment.** As you may know, from others at NCDOT or from visiting our website (<https://sites.google.com/site/mirlobeach/home>), the MBHOA is a strong proponent of beach nourishment, and specifically the need to conduct the research necessary to get the science and economics right about nourishment. With all due respect to the experts consulted by the merger team, their opinions are just that -- opinions. With the exception of Wimble Shoals, there is little hard data about sand sources (such as Platt Shoals), nor is there data about the effectiveness of nourishment on Hatteras Island (unless there is unreleased data from the small scale nourishment project at S-curves several years ago). We will have good data about Nags Head in a year or two. But right now, the science is weak at the local level of this "hot spot" -- in contrast to what is known at larger scales of time and geography. It is the local data that is critical.
- 3. The FEIS acknowledges that bridges in North Rodanthe will cause economic damage, but the extent of this damage has not been fully quantified and is an underestimate.** The FEIS quantified three types of economic damage: tax base, access to Pea Island, and disrupted access to all of Hatteras Island. The tax base estimate is a gross underestimate because it considered only the properties acquired for bridge construction. The much greater loss to the tax base will be due to the inevitable reduction in all property values in North Rodanthe (approximately 150 properties, inclusive of undeveloped lots). No quantification of this loss was included. Even qualitatively the only discussed damage to North Rodanthe was disrupted views of ocean, island, and sound (which are substantial). The destruction of the beach itself was not considered (see #4 below). Moreover, by changing the experience of entering Hatteras Island and reducing access to the island by visitors and local residents, the damage may be much more enduring and extensive than reduced rental and property value in North Rodanthe. It may reduce the attractiveness of Hatteras Island as a whole. The FEIS estimated that a breach of NC 12 that cut off Hatteras Island would result in an economic loss of \$110 million. Thus, as a crude estimate, if the long term reduction in the attractiveness of Hatteras Island was 10%, the economic loss would be \$11 million annually (or \$550 million over 50 years, undiscounted). All of these damages could and should have been quantified by appropriate economic and marketing analyses; however, this has not been done.

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Thank you for this opportunity to provide comment.

**Roseann B Verrecchio
Resident Mirlo Beach Homeowner**

Email correspondence to and from this sender is subject to the N.C. Public Records Law and may be disclosed to third parties.

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Joyner, Drew

From: Service Account – Public Involvement 2
Tuesday, January 21, 2014, 5:34 PM
To: The Justice Firm; Service Account – Public Involvement 2
Subject: RE: Project B-2500B (Rodanthe Breach)

Ms. Walker,
I received your voicemail, as well. I hope this email will sufficiently address your questions. If not, feel free to contact me again.

The hearings for the project were held on January 7th, 8th, and 9th. We have not purchased right of way for the project. Our current schedule is to let the project to a design-build team this spring. The team would then complete the final design, purchase right of way and construct the project. I do not have a more detailed schedule at this time.

Sincerely,
Drew Joyner



From: The Justice Firm [mailto:admin@thejusticefirm.com]
Sent: Monday, January 20, 2014 4:26 PM
To: Service Account – Public Involvement 2
Subject: Project B-2500B (Rodanthe Breach)

Good Afternoon Mr. Joyner,

I was on the NCDOT website and noticed there is an upcoming public hearing meeting for the above referenced project. Can you tell me if the right-of-way acquisition has begun for this particular project? If so, what stage are they in....Beginning, Middle, End?

Thanks,

Lafisha N. Walker, M.B.A.

Joyner, Drew

From: George Waterman <gwaterman@cox.net>
Sent: Friday, January 24, 2014 2:08 PM
To: Service Account - Public Involvement 2
Subject: Rodanthe bridge public input

To whom it may concern:

As a Rodanthe property owner, I wish to publicly enter my specific opposition to the sound-side bridge alternative at the Rodanthe "S-Curve".

I am an advocate of the **Beach Nourishment** technique. With each severe storm there will remain multiple other HOT SPOTS along the island to the north of Rodanthe that will require this type of treatment along with the associated equipment to make these types of repairs. **Any bridge of the types suggested will not alleviate the necessity for beach nourishment activities along the NC12 corridor.**

As much as an elevated bridge over the existing road at the "S-curve" makes some kind of sense, I doubt very much the state will incur the expense. Although beach nourishment may cost more to implement over decades, at any one yearly budget the cost will be significantly less than a bridge of any size in this part of the world when the maintenance costs are factored in. Couple in the apparent ineptitude and endless delays experienced to date with the Bonner bridge replacement project, any bridge at Rodanthe will certainly cost substantially more than the current estimates may indicate.

Regarding the sound-side proposal, you must agree that a bridge located over marsh and shallow water will cost significantly more to build and maintain. Furthermore, I am dissatisfied with the traffic pattern proposed at the return to RT12 in Rodanthe. The proposed arrangement will cause a severe bottleneck and further needlessly impede traffic especially during periods of emergency evacuation. Elevate the highway if you must, but I find no advantages that significantly promote the sound based bridge over the elevated highway bridge, should such funds become available.

Respectfully submitted

George Willis Waterman
23028 Cross of Honor
Mirlö Beach
Rodanthe, NC

5 Fox Run
Jamestown, RI 02835

401-423-2205

COMMENT SHEET

NC 12 – Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County

NAME: Ronald R. Watkins

ADDRESS: P.O. Box 419
Rodanthe, NC 27968

E-MAIL: _____

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
- Bridge on New Location Alternative
- Other: _____
- No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

Use of existing right of ways,
Lower construction costs.

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

(This comment sheet continues on the other side.)

Joyner, Drew

From: shelley <sweisberg@cox.net>
Sent: Monday, January 13, 2014 2:30 PM
To: Service Account – Public Involvement 2
Subject: public opinion

Dear Mr. Joyner,

I am writing you to enlist your support for beach nourishment rather than bridges. Please realize that using bridges to solve the situation is short sighted and not cost effective. The cost of building and maintaining the bridge will far exceed a long term beach nourishment plan.

You are in the unique position of making a positive impact for years to come. Review of recent Nags Head Beach nourishment project and the USACE data warrants long-term beach nourishment.

Truly appreciate the dialogue and public opinion transparency on this issue. Please advise how one accesses.

Sincerely,

shelley kruger-weisberg
6 captain's court
wmbg,va 23185
ph. 757.229.1750
c.757.870.4570

G-86

Joyner, Drew

From: Shelley Weisberg <shelley.weisberg@gmail.com>
Sent: Friday, January 24, 2014 11:15 AM
To: Service Account – Public Involvement 2
Subject: Albatross

Dear Mr Joyner,

The economic costs associated with building & maintaining a bridge will be an albatross around our necks for eternity. Please do the responsible aesthetic environmentally correct nourishment of our beaches .
Shelley & Jeffrey Weisberg

Sent from my iPhone

COMMENT SHEET

NC 12 - Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)
Public Hearing
TIP No. B-2500B
Dare County

NAME: Joe Wells

ADDRESS: 26285 Hwy 12 Salvo

E-MAIL: NCAOK@aol.com

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
- Bridge on New Location Alternative
- Other:
- No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

(This comment sheet continues on the other side.)

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

① Put a weight limitation on current Bonner Bridge
② How Governor declare a state of emergency to bypass the stalemate to building of new Bonner Bridge.
EX. Bay Bridge ~~that~~ - San Francisco to Oakland stuck five that could overtop failure in early 2000's (year)

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
Phone: (919) 707-6077 FAX: (919) 212-5785
Email: PublicInvolvement2@ncdot.gov

Tonight, you also may drop written comments into the comments box or provide oral comments. Feel free to attach additional pages to this form if you need more space to present your comments.

Joyner, Drew

From: Doug West <dougwest@gmail.com>
Sent: Wednesday, January 15, 2014 9:39 PM
To: Service Account – Public Involvement 2
Subject: Comments on Bonner Bridge- Phase IIb Options
Attachments: NC 12 Phase IIb Comments.docx

January 15, 2014

Dear NCDOT Project Team Members,

First I'd like to thank you for being proactive in addressing the "problem" spots on NC 12. I attended the Open House in Rodanthe on January 8. The two options for Phase IIb were well explained and presented. Of these two options, the "bridge on new location" (Sound option) is clearly the better option for the following reasons:

1. Easements and right of ways. The Sound option only impacts one property owner in Rodanthe. The owners are willing to sell enough land for the road to come ashore from the Sound and meet back up with NC 12. The bridge within the existing NC 12 easement would require additional land from all property owners adjacent to NC 12 from the gas station to the Park. I can guarantee that these property owners will fight tooth and nail. Not only will they be losing their front yards, but their views will be wiped out by the elevated road. I am reminded of the trouble the Power Company had when they tried to move their easement in this area. This will create a long, drawn out battle that will severely delay the project. Everyone thinks their property is worth more than it is and you are stepping into a hornets nest with these property owners.
2. The Park Easement. The Sound option would drastically reduce the NC 12 footprint in the Park. Approximately two miles of the Park would become road free. This would make an ideal habitat for the birds and animals in the area. Once completed, the impervious surface, in the park, would be almost eliminated.
3. The bridge over the sound would help protect this vulnerable area from further erosion. It would create a wind and wave barrier that would significantly reduce damage from winds and waves from the West, as in Hurricane Irene. The roadway would also be far enough off shore to minimize the impact on the view from Sound front properties.
4. For all these reasons, the Bridge on New Location is the best option. It will have the least opposition and thus will be able to move forward to completion, in a timely manner. I am reminded of the fact that presently funds are available for this project, but these funds may disappear if construction is not started soon.

I urge you to consider all these facts, as you deliberate, and proceed with the Best option for all concerned, Bridge on New Location. Thank you for your time. Sincerely,
Doug West.

Please find attached my comments on the Best option for this project. Thanks, Doug.

FAX

To: 919-212-5785

Mr. Drew Joyner
NCDOT Human Environment Section

From: Susan West

Jan. 22, 2014

I attended the public hearing held in the Rodanthe Community center on Jan. 8 and was able to view and understand the very informative pictures of the 2 options of NC 12 Rodanthe Breach improvements. After careful consideration, I feel the bridge on New Location would be the Best option for many reasons:

- A) The Sound option will impact only one property owner in Rodanthe, & the owners are willing to sell enough land for the road to come ashore and connect again with NC 12.
- B) The bridge within the NC 12 easement would require additional land from all the property owners adjacent to N.C. 12 from the Park to the Liberty Gas Station. I know these property owners will contest this with all their might. They will be losing their views and their front yards with an elevated bridge. No property owner is going to settle for that.
- C) The option of putting the bridge in the Sound would mean 2 miles less road in the park! This increases the habitat for our birds & animals.
- D) The bridge over the Sound would be off shore far enough to minimize the impact on the view from Sound Front properties.
The bridge on new location is by far the best option. I feel it will be able to progress on with less opposition.

COMMENT SHEET



**NC 12 – Rodanthe Breach Long-Term Improvement
(Bonner Bridge Replacement Project Phase II)
Public Hearing
TIP No. B-2500B
 Dare County**

NAME: Frederic B. Westervelt
ADDRESS: 25 Howard Street, PO Box 505, Ocracoke NC 27960
E-MAIL: fwesterve1r31@gmail.com

MY PREFERRED ALTERNATIVE IS:
 Bridge within Existing NC 12 Easement Alternative
 Other: Beach re-nourishment facilitated by breakwater, jetty or other
 Bridge on New Location Alternative
 No preference

THE REASONS FOR MY PREFERENCE ARE:
(It will help NCDOT's decision-making process if you are as specific as possible.)
This alternative would be quick to accomplish, low in short term cost compared to bridges, would preserve the ambience of Hatteras and would successfully preserve NC 12 with no sacrifice of existing property or businesses.
The very creation of the Outer Banks was by a process of accretion and depletion. To prohibit our mimicking this to our advantage is folly.

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:
The incessant drumbeat of environmental opposition to any mere human solutions to littoral problems must be curbed. These zealots have, in essence, veto power over any actions that seek to preserve or protect our way of life.

(This comment sheet continues on the other side.)

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

The several proposed bridges are expensive, slow in accomplishment and grotesques and in my opinion are not suitable for Hatteras Island.
Further, these would not forestall the gradual disappearance of north Rodanthe.

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

The evident surrender of the Park Service to environmental demands is regrettable NCDOT should not follow suit.
It has been said the NCDOT has not pursued the re-nourishment proposal because of uncertainty that (it) would not be compatible with the mission and purpose of the Refuge. Such timidity may prove to be correct, but the premise should be put to the test and defended vigorously. Capitulation gets us nowhere.

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
Phone: (919) 707-6077 FAX: (919) 212-5785
Email: Publicinvolvement2@ncdot.gov

Tonight, you also may drop written comments into the comments box or provide oral comments
Feel free to attach additional pages to this form if you need more space
to present your comments.

COMMENT SHEET



**NC 12 - Rodanthe Breach Long-Term Improvement
(Bonner Bridge Replacement Project Phase II)
Public Hearing
TIP No. B-2500B
Dare County**

NAME: Rev. Benjamin Whit
ADDRESS: 41827 Methodist Church Rd., Po Box 829, Avon, NC 27915
E-MAIL: bwhit@ncdot.org

MY PREFERRED ALTERNATIVE IS:

- Bridge within Existing NC 12 Easement Alternative
- Bridge on New Location Alternative
- Other: _____
- No preference

THE REASONS FOR MY PREFERENCE ARE:

(It will help NCDOT's decision-making process if you are as specific as possible.)

1. This option seems more sustainable. Recently the posted environmental studies experts seem united in their belief that the bridge within the existing easement will soon be in the ocean, threatening the structure & appeal of the beach.
2. This option seems to affect the community less. Since it's further in the sand, there is less visual impact. It also affects less tourism & seems to help protect the business & community resource of the gas station.

MY PREFERRED ALTERNATIVE COULD BE IMPROVED BY:

Working with other agencies to help have Beach Nourishment to protect N. Rodanthe.

(This comment sheet continues on the other side.)

MY CONCERNS WITH OTHER ALTERNATIVES ARE:

1. Visual/Aesthetic impact of the bridge very close to houses in N. Rodanthe.
2. Proximity to ocean threatening structure.
3. Loss of Micro Beach because existing coastal bridge on the beach.

I HAVE THE FOLLOWING ADDITIONAL COMMENTS AND QUESTIONS:

A speed solution is critical. If DOT thinks the bridge on New Location would face excessive level challenges while the bridge on existing wouldn't, pursue existing.

Is there any way to make groups like SELC run to the to gain their support?

Thank you for all your work.

Comments may be mailed, faxed, or e-mailed by January 24, 2014 to:

Mr. Drew Joyner
NCDOT - Human Environment Section
1588 Mail Service Center
Raleigh, NC 27699-1598

Phone: (919) 707-6077 FAX: (919) 212-5785
Email: PublicInvolvement2@ncdot.gov

Tonight, you also may drop written comments into the comments box or provide oral comments. Feel free to attach additional pages to this form if you need more space to present your comments.

Joyner, Drew

From: Hutchinson, Wes <jwhutch@wharton.upenn.edu>
Sent: Friday, January 24, 2014 6:37 AM
To: Service Account – Public Involvement 2
Cc: Smyre, Elizabeth A
Subject: Petitions about the Rodanthe bridge alternatives
Attachments: Opposition to the Current Easement Bridge.pdf; Support for Beach Nourishment.pdf

Dear Mr. Joyner,

Attached are copies of current signatures for two online petitions (which are ongoing on change.org).

The first petition opposes the bridge on the current easement and currently has 269 signatures: <http://chn.ge/1IzbagD>

The second petition supports beach nourishment and currently has 208 signatures: <http://chn.ge/1Izbb6NR>

Wes Hutchinson

Stephen J. Heyman Professor and Professor of Marketing Faculty Director, Wharton Behavioral Laboratory Marketing Dept., 746 Jon M. Huntsman Hall The Wharton School, University of Pennsylvania Philadelphia, PA 19104-6340

office: (215) 898-6450
fax: (215) 898-2534

change.org

Recipient: NC Governor Pat McCrory and NC Department of Transportation
Letter: Greetings,

Save Hatteras Island Beaches! No Bridges on the Beach and in the Surf!

Signatures

Name	Location	Date	Name	Location	Date
John Wesley Hutchinson	Wallingford, PA	2014-01-07	Sarah Brandt	Elkridge, MD, United States	2014-01-14
Mary Artley	Durham, NC, United States	2014-01-07	Paul Higdon	Sykesville, MD, United States	2014-01-14
Thomas Kligge	Newburg, PA, United States	2014-01-07	Kathleen Jillson	Catonsville, MD, United States	2014-01-14
Beth Hutchinson	Rockville, MD, United States	2014-01-07	Emily Cugle	Westminster, MD, United States	2014-01-14
Ra Kligge	Shippensburg, PA, United States	2014-01-07	Leslie Schinella	Ellicott City, MD, United States	2014-01-14
Janet Ligge	Rodanthe, NC, United States	2014-01-07	Christopher Smith	Reston, VA, United States	2014-01-15
Deborah Upchurch	Durham, NC, United States	2014-01-07	kathy kruger	Ellicott City, MD, United States	2014-01-15
benjamin reynolds	lutherville, MD, United States	2014-01-08	William Jillson	Catonsville, MD, United States	2014-01-15
Melissa r	State College, PA, United States	2014-01-08	Keisha Curtright	Wynnewood, PA 19096, OH, United States	2014-01-15
Phyllis Bass	Durham, NC, United States	2014-01-08	Barbara Kahn	philadelphia, PA, United States	2014-01-15
cathy portwood	bahama, NC, United States	2014-01-08	Richard Higdon	Rodanthe, NC, United States	2014-01-16
mick harris	salvo, NC, United States	2014-01-08	Jan Richards	Baden, PA, United States	2014-01-16
Concerned Citizen	New City, NY, United States	2014-01-09	Robert Belyea	mt Jackson, VA, United States	2014-01-16
Edward Laurson	Denver, CO, United States	2014-01-09	Margo Higdon	Sykesville, MD, United States	2014-01-16
Annette Rogers	Williamston, NC, United States	2014-01-10	Duane Bell	Pennsville, NJ, United States	2014-01-16
Eric Bradlow	Ardmore, PA, United States	2014-01-10	Bea Southworth	Elizabeth City, NC, United States	2014-01-16
Alix Barasch	Philadelphia, PA, United States	2014-01-10	Victoria Roberson	Colonial Beach, VA, United States	2014-01-17
John William Hutchinson	Astor, FL, United States	2014-01-10	Mark Fleming	Metamora, MI, United States	2014-01-17
Yeonjin Jung	Philadelphia, PA, United States	2014-01-10	Alvin Southworth	Elizabeth City, NC, United States	2014-01-17
Barbara Mellers	Philadelphia, PA, United States	2014-01-10	Dilip Soman	Toronto, Canada	2014-01-17
Kate Molt	Lafayette Hill, PA, United States	2014-01-10	Melissa Rock	State College, PA, United States	2014-01-17
Gal Zauberman	Merion Station, PA, United States	2014-01-11	Michael Scott	Durham, NC, United States	2014-01-17
Joy Lu	San Ramon, CA, United States	2014-01-12	Pengchuan Chen	Taiwan,	2014-01-17
shelley weisberg	rodanthe, NC, United States	2014-01-12	Jo Ann Brady	Greensboro, NC, United States	2014-01-17
katherine kelley	wallingford, PA, United States	2014-01-12	Judi Rock	Las Vegas, NV, United States	2014-01-17
ANNEMARIE DALLAGO	Aston, PA, United States	2014-01-13	Robert Singer	Union City, CA, United States	2014-01-17
Richard Kessler	Havertown, PA, United States	2014-01-13	Mary frances Luce	Chapel Hill, NC, United States	2014-01-17
Sheila Higdon	Rodanthe, NC, United States	2014-01-14	Nick Luce	Chapel Hill, NC, United States	2014-01-17
James Kruger	Ellicott City, MD, United States	2014-01-14	Mary Marissen	Swarthmore, PA, United States	2014-01-17
Jennifer Jillson	Parkville, MD, United States	2014-01-14	Catarine Verdi	Porto Alegre, Brazil	2014-01-17
			Kevin Finnegan	Louisville, KY, United States	2014-01-17
			Christopher Jillson	Westminster, MD, United States	2014-01-17

Name	Location	Date	Name	Location	Date
Kim Jillson	Westminster, MD, United States	2014-01-17	Allison Higgins	college park, GA, United States	2014-01-22
Ben Hutchinson	Newark, NJ, United States	2014-01-17	L Wagenseil	Dallas, TX, United States	2014-01-22
Bridget Hughes	Media, PA, United States	2014-01-18	Beatriz Roque	Miami, FL, United States	2014-01-22
Joanna Wilson	Wallingford, PA, United States	2014-01-18	Clara Lander	Colorado Springs, CO, United States	2014-01-22
Katherine White	Media, PA, United States	2014-01-18	Angel Estrada	Sunnyside, WA, United States	2014-01-22
Kevin Hughes	Media, PA, United States	2014-01-18	Greg Hjeltn	Caldwell, ID, United States	2014-01-22
Carolyn Costley	Hamilton New Zealand, New Zealand	2014-01-18	James Devine	Raleigh, NC, United States	2014-01-22
LaRiena Ralph	Philadelphia, PA, United States	2014-01-18	Marshall Stovall	N R H, TX, United States	2014-01-22
George Knox	Tilburg, NB, Netherlands	2014-01-18	jennifer ellis	berkeley, CA, United States	2014-01-22
Jessica Anderson	Media, PA, United States	2014-01-18	Dasi Bhaktivedanta	Tempe, AZ, United States	2014-01-22
Rachel Hughes	Media, PA, United States	2014-01-18	Jennifer Newsom	Anchorage, AK, United States	2014-01-22
Emily Bunting	Media, PA, United States	2014-01-18	Jessie Scott	Fairborn, OH, United States	2014-01-22
weisberg jeffrey	williamsburg, VA, United States	2014-01-18	Glenda Zachary	Decatur, GA, United States	2014-01-22
Joe Dobkin	Philadelphia, PA, United States	2014-01-18	Jon Anderson	Kannapolis, NC, United States	2014-01-22
Julia Sibley	Westminster, MD, United States	2014-01-20	Jesse Hughes	NA, RI, United States	2014-01-22
Kathy Hillcock	Westminster, MD, United States	2014-01-20	James DiMarco	Jackson, TN, United States	2014-01-22
Jonathan Sibley	Westminster, MD, United States	2014-01-20	Penny Nelson	Fairview, OR, United States	2014-01-22
Becky Higdon	Columbia, MD, United States	2014-01-20	Patricia Greiss	Carlisle, PA, United States	2014-01-22
Bette Sibley	Baltimore, MD, United States	2014-01-21	Nicole hamm	chandler, AZ, United States	2014-01-22
John Thompson	Shaker Heights, OH, United States	2014-01-21	Jessica Mensing	Warwick, RI, United States	2014-01-22
Sharon Redfield	Fredonia, NY, United States	2014-01-21	Rodney Dean	Buckhannon, WV, United States	2014-01-22
Maureen Paris	Rodanthe, VA, United States	2014-01-22	Shana Powers	Tampa, FL, United States	2014-01-22
peter ricards	Lowell Township, MI, United States	2014-01-22	German R Perez	Whittier, CA, United States	2014-01-22
Carole Weinstein	Virginia beach, VA, United States	2014-01-22	Howard Malpass	Columbia, SC, United States	2014-01-22
Steve Levy	Colts Neck, NJ, United States	2014-01-22	marni nacheff	sonoma, CA, United States	2014-01-22
Jacqueline Toungett	Virginia Beach, VA, United States	2014-01-22	robert knox	quincy, MA, United States	2014-01-22
Dawn Waters	Richmond, VA, United States	2014-01-22	Rebecca Nimmons	Bellevue, WA, United States	2014-01-22
RICHARD T. MEADOWS	SO. DAYTONA, FL, United States	2014-01-22	Robert Whitehead	Green River, WY, United States	2014-01-22
Constance Anders	Alexandria, VA, United States	2014-01-22	Sarah S. Malino	Greensboro, NC, United States	2014-01-22
Laura Fallazola	Lawrence, MA, United States	2014-01-22	Diana Fisher	Niceville, FL, United States	2014-01-22
Chloe Chou	AnOnYmous, CA, United States	2014-01-22	Justin Maggiore	West Haven, CT, United States	2014-01-22
Danika Hines-Barnett	Norman, OK, United States	2014-01-22	Monica Spriggs	Odenton, MD, United States	2014-01-22

Name	Location	Date	Name	Location	Date
Daniel Brown	San Francisco, CA, United States	2014-01-22	Joshua Gentile	Palos Hills, IL, United States	2014-01-22
George Matkovits	eden Prairie, MN, United States	2014-01-22	Michelle Jordan	Ashland, OR, United States	2014-01-22
Judith Koppersmith	New York, NY, United States	2014-01-22	Patricia Seitz	Lomita, CA, United States	2014-01-22
Franklin Wallace	Philadelphia, PA, United States	2014-01-22	Claire, John and Caitlin North	Geneva, FL, United States	2014-01-22
Beverly Adams	Mpls, MN, United States	2014-01-22	Dana Hollinger	Cleveland, OH, United States	2014-01-22
Matt Maras	Cincinnati, OH, United States	2014-01-22	Ivette Mendez	Miami, FL, United States	2014-01-22
xochitl carbajal	Oakland, CA, United States	2014-01-22	Sheila Dillon	Willmar, MN, United States	2014-01-22
Gretchen Johnson	Burnsville, MN, United States	2014-01-22	Walter Hoesel	Duvall, WA, United States	2014-01-22
Lydia Hammesley	Clinton, NY, United States	2014-01-22	Denise Breton	St Paul, MN, United States	2014-01-22
Adri Ayala	Albuquerque, NM, United States	2014-01-22	Mary Ann De La Cruz	Oxnard, CA, United States	2014-01-22
Corinne Vallis	Murfreesboro, TN, United States	2014-01-22	Elizabeth Davidson	claremont, CA, United States	2014-01-22
Kim Mott	McCall, ID, United States	2014-01-22	sherry weiland	arlington, MA, United States	2014-01-22
Kevin Price	Saugus, CA, United States	2014-01-22	Tenley Gillett	Buzzards Bay, MA, United States	2014-01-22
Armando Ramirez	Chicago, IL, United States	2014-01-22	Toni Iacovelli	Blackwood, NJ, United States	2014-01-22
Alan Patterson	Portland, OR, United States	2014-01-22	Sam Lerman-Hahn	Berkeley, CA, United States	2014-01-22
kurt kriese	Indianapolis, IN, United States	2014-01-22	Julius Ames	Nampa, ID, United States	2014-01-22
Donna Oswald	Oak Park, IL, United States	2014-01-22	Ann Ford	Boise, ID, United States	2014-01-22
Arta Benzie-Youssef	Alameda, CA, United States	2014-01-22	Sage Herman-Joy	Mill Valley, CA, United States	2014-01-22
Tracy Holthaus	kansas city, MO, United States	2014-01-22	Mary Menefee	Albuquerque, NM, United States	2014-01-22
Barbara Glowaski	Palm Harbor, FL, United States	2014-01-22	Corrine Stanley	Hudson, MI, United States	2014-01-22
Wendy Campos	Vancouver, WA, United States	2014-01-22	Bonnie Burton	Dade City, FL, United States	2014-01-22
Luis Castano	Miami, FL, United States	2014-01-22	John Fadeley	Newbury, OH, United States	2014-01-22
Raphael Meyer	Ann Arbor, MI, United States	2014-01-22	Jessica Penque	Yuma, AZ, United States	2014-01-22
Donovan McCall	Wichita, KS, United States	2014-01-22	Matthew Baker	Ketchikan, AK, United States	2014-01-22
Lynn kueppers	macomb, MI, United States	2014-01-22	Judith A. Hugo	Fort Collins, CO, United States	2014-01-22
lisa nobrega	acushnet, MA, United States	2014-01-22	Erica McNealy	Jacksonville, FL, United States	2014-01-22
Jonell Malone	Silver Spring, MD, United States	2014-01-22	karen miles	Citrus Heights, CA, United States	2014-01-22
deb mecchi	providence, RI, United States	2014-01-22	Mike Kelly	Newark, DE, United States	2014-01-22
sherida cohen	philadelphia, PA, United States	2014-01-22	Janick Burton	United States	2014-01-22
Jeffrey Misa	Port Saint John, FL, United States	2014-01-22	gail burgtorf	Ellicott City, MD, United States	2014-01-22
Saveena Mandadi	Coppell, TX, United States	2014-01-22	Jesse James	auslin, TX, United States	2014-01-22
Justin Mebane	Wilmington, NC, United States	2014-01-22	JC Honeycutt	Charlotte, NC, United States	2014-01-22

Name	Location	Date	Name	Location	Date
Laura Goldstein	Miami, FL, United States	2014-01-22	Justin Rice	smyrna, TN, United States	2014-01-23
renee mcollum	eastlake, OH, United States	2014-01-22	Gene Golden	Laguna Niguel, CA, United States	2014-01-23
robert cote	kankakee, IL, United States	2014-01-22	Ramon Gonzalez	San Antonio, TX, United States	2014-01-23
Mary Beckman	Greenwood lake, NY, United States	2014-01-22	Samantha Kochman	Port Jefferson, NY, United States	2014-01-23
Lori Baugh	Pine Apple, AL, United States	2014-01-22	Jeff Oakley	De Forest, WI, United States	2014-01-23
Jennifer Wallisch	Detroit, MI, United States	2014-01-22	KERRY DAVIS	Auburn, AL, United States	2014-01-23
Vladimir Enlow	Nashville, TN, United States	2014-01-22	Barbara Mango	Kewanee, IL, United States	2014-01-23
Frances Jean Nelson	Anacortes, WA, United States	2014-01-22	Amy Snyder	Charlotte, NC, United States	2014-01-23
Keri Smith	Washington Township, NJ, United States	2014-01-22	gabriela sanchez	Pullman, WA, United States	2014-01-23
Brenda Silkman	Waite Park, MN, United States	2014-01-22	Dianora Niccolini	New York City, NY, United States	2014-01-23
Jacqueline Geoffroy	Port St Lucie, FL, United States	2014-01-22	Laurie Fisher	Tigard, OR, United States	2014-01-23
Jennifer Compton	ann arbor, MI, United States	2014-01-22	Kiana Richard	Valrico, FL, United States	2014-01-23
Gordon Ackland	Walkersville, MD, United States	2014-01-22	Lynnette Anderson	Seattle, WA, United States	2014-01-23
Roseann Verrecchio	Rodanthe, NC, United States	2014-01-22	Mary Alice Butkofsky	Lancaster, PA, United States	2014-01-23
Paula Babin	Rodanthe, NC, United States	2014-01-22	Lisa Linthner	Hailey, ID, United States	2014-01-23
Lewis Philip Edwards	Rodanthe, NC, United States	2014-01-22	naurlene canterman	tucson, AZ, United States	2014-01-23
Joan DeVito	Boynton Beach, FL, United States	2014-01-22	Rhonda Woodfine	El Segundo, CA, United States	2014-01-23
PATRICIA PUGH	WARSAW, VA, United States	2014-01-22	David Weissman	rochester, NY, United States	2014-01-23
John Adam Artley	Waynesville, NC, United States	2014-01-22	david holmes	west palm beach, FL, United States	2014-01-23
Linda Stanley	Grifton, NC, United States	2014-01-22	Ruthanne Berry	Richmond, VA, United States	2014-01-23
Marjorie Powell	Fairfax Station, VA, United States	2014-01-22	Norman Bonin	Haverhill, MA, United States	2014-01-23
Scott Starsman	Rodanthe, NC, United States	2014-01-22	Mauro Ferrero	Los Angeles, CA, United States	2014-01-23
Christine Hutchinson	Wallingford, PA, United States	2014-01-23	Rebecca Best	New York, NY, United States	2014-01-23
Lee Weinstein	Virginia Beach, Va, VA, United States	2014-01-23	danny grantham	biloxi, MS, United States	2014-01-23
Louann Smith	Plano, TX, United States	2014-01-23	Gabe Freund	Oakland Park, FL, United States	2014-01-23
Mark Sauer	Dayton, OH, United States	2014-01-23	Noah Pardo-Friedman	Albuquerque, NM, United States	2014-01-23
Carolyn Watkinson	Atwater, CA, United States	2014-01-23	Renee gardner	costa Mesa, CA, United States	2014-01-23
Susan Antoniewicz	Yorktown, VA, United States	2014-01-23	Cheyenne Russo	Cape Coral, FL, United States	2014-01-23
Eilyn Sutton	Spokane, WA, United States	2014-01-23	Pedro Rodriguez	Miami, FL, United States	2014-01-23
Michael Carney	Runnemedade, NJ, United States	2014-01-23	lorenz steinger	Germany	2014-01-23
Grace Jin	McLean, VA, United States	2014-01-23	Nathan Zimmer	Glendale, AZ, United States	2014-01-23
Vera Sadkovsky	Modesto, CA, United States	2014-01-23	Robin Keller	Cary, NC, United States	2014-01-23

Recipient: NC Governor Pat McCrory and NC Department of Transportation
 Letter: Greetings,
 Give sand a chance! Support beach nourishment in Rodanthe!

Name	Location	Date
Judy Dufficy	Skokie, IL, United States	2014-01-23
Steve Sacharoff	Rockville, MD, United States	2014-01-23
Ann Hamblet	Evanston, IL, United States	2014-01-23
Shane Cringle	Newport Beach, CA, United States	2014-01-23
Thomas Bain	Webster, NY, United States	2014-01-23
Phyllis T Albritton	Blacksburg, VA, United States	2014-01-23
Lori Caudill	Los Osos, CA, United States	2014-01-23
Jaimee Gano	St.Helens, OR, United States	2014-01-23
Cynthia Goins	Reseda, CA, United States	2014-01-23
David Lively	Urbanna, VA, United States	2014-01-23
David Finnegan	Henrico, VA, United States	2014-01-23
Harold Brennan	Rodanthe, NC, United States	2014-01-24
E Paul Howanitz	Centerville, IN, United States	2014-01-24
Patrick Brennan	Newtown, CT, United States	2014-01-24
Shawn Brennan	hartsdale, NY, United States	2014-01-24

Signatures

Name	Location	Date	Name	Location	Date
John Wesley Hutchinson	Wallingford, PA	2014-01-08	Barry Stripp	Malibu, CA, United States	2014-01-15
gary taylor	clayton, NC, United States	2014-01-08	kathy kruger	Ellicott City, MD, United States	2014-01-15
shelley weisberg	rodanthe, NC, United States	2014-01-08	Richard Higdon	Rodanthe, NC, United States	2014-01-15
Theodore Kruger	Norfolk, VA, United States	2014-01-08	andrea schinella	Catonsville, MD, United States	2014-01-15
John William Hutchinson	Astoria, FL, United States	2014-01-10	William Jillson	Catonsville, MD, United States	2014-01-15
Eric Bradlow	Ardmore, PA, United States	2014-01-10	Keisha Cutright	Wynnwood, PA, United States	2014-01-15
Alix Barasch	Philadelphia, PA, United States	2014-01-10	Barbara Kahn	philadelphia, PA, United States	2014-01-15
Barbara Meilers	Philadelphia, PA, United States	2014-01-10	Craig Baader	New Bern, NC, United States	2014-01-15
Yeonjin Jung	Philadelphia, PA, United States	2014-01-10	Donna Hay	Newport News, VA, United States	2014-01-15
jonah berger	durham, NC, United States	2014-01-10	Robert Belyea	Mt Jackson, VA, United States	2014-01-16
Thomas Kligge	Rodanthe, NC, United States	2014-01-10	Margo Higdon	Sykesville, MD, United States	2014-01-16
Kate Molt	Lafayette Hill, PA, United States	2014-01-10	Mary Powers	Catonsville, MD, United States	2014-01-16
Concerned Citizen	New City, NY, United States	2014-01-11	Duane Bell	Pennsville, NJ, United States	2014-01-16
Gal Zauberman	Merion Station, PA, United States	2014-01-11	Keith Orr	greensburg, PA, United States	2014-01-16
Joy Lu	Philadelphia, PA, United States	2014-01-12	Aubrey Ruffner	Fairfax, VA, United States	2014-01-16
Katherine Kelley	Wallingford, PA, United States	2014-01-12	brian tevis	pottstown, PA, United States	2014-01-17
Jim Meyer	Pottstown, PA, United States	2014-01-13	Kevin Finnegan	Louisville, KY, United States	2014-01-17
Amy Fan	Philadelphia, PA, United States	2014-01-14	Kim Jillson	Westminster, MD, United States	2014-01-17
Louis Levert	Gatineau, Canada	2014-01-14	Christopher Jillson	Westminster, MD, United States	2014-01-17
Sheila Higdon	Rodanthe, NC, United States	2014-01-14	Julia Sibley	Westminster, MD, United States	2014-01-20
Real Bonnier	Gatineau, Canada	2014-01-14	Kathy Hillock	Westminster, MD, United States	2014-01-20
James Kruger	Ellicott City, MD, United States	2014-01-14	Jonathan Sibley	Westminster, MD, United States	2014-01-20
Jennifer Jillson	Catonsville, MD, United States	2014-01-14	Bette Sibley	Baltimore, MD, United States	2014-01-21
Sarah Brandt	Elkridge, MD, United States	2014-01-14	Maureen Paris	Rodanthe, VA, United States	2014-01-22
Paul Higdon	Sykesville, MD, United States	2014-01-14	Peter Ricards	Lowell, MI, United States	2014-01-22
Kathleen Jillson	Catonsville, MD, United States	2014-01-14	Carole Weinstein	Virginia beach, VA, United States	2014-01-22
Emily Cugle	Westminster, MD, United States	2014-01-14	Steve Levy	Colts Neck, NJ, United States	2014-01-22
Kenneth Cugle	Westminster, MD, United States	2014-01-14	Ronald Schinella	Ellicott City, MD, United States	2014-01-22
Leslie Schinella	Ellicott City, MD, United States	2014-01-14	Gordon Ackland	Walkersville, MD, United States	2014-01-22
Christopher Smith	Reston, VA, United States	2014-01-15	Roseann Verrecchio	Rodanthe, NC, United States	2014-01-22
			Lewis Philip Edwards	Rodanthe, NC, United States	2014-01-22
			Marjorie Powell	Fairfax Station, VA, United States	2014-01-22

Name	Location	Date	Name	Location	Date
Don DeMarco	Silver Spring, MD, United States	2014-01-22	Raquel Candanedo	San Antonio, TX, United States	2014-01-22
Laura Saxon	morrison, FL, United States	2014-01-22	Shelley Williams	Endwell, NY, United States	2014-01-22
rocky reuter	greensboro, NC, United States	2014-01-22	Ed Vieira	Staten Island, NY, United States	2014-01-22
MICKEY OHAHER	PORT ELIZABETH, IA, United States	2014-01-22	Ramon Sandoval	littlerock, CA, United States	2014-01-22
Meredith Gold	Glendale, CA, United States	2014-01-22	Stephen Kleykamp	Mason, OH, United States	2014-01-22
portra sandra	dunkerque, FL, United States	2014-01-22	Ronit Hasson	Somerville, MA, United States	2014-01-22
Annie McMahon	Clarkdale, AZ, United States	2014-01-22	Marta Storer	New Vienna, OH, United States	2014-01-22
Cori Bowe	richfield, MN, United States	2014-01-22	Robin Powell	post falls, ID, United States	2014-01-22
VIRGINIA MCCOY	mimbres, NM, United States	2014-01-22	Adrian Landon	NY, NY, United States	2014-01-22
Mary Riker	Manistee, MI, United States	2014-01-22	Ran Zirasri	Bismarck, ND, United States	2014-01-22
Jill Litwack	lake worth, FL, United States	2014-01-22	Leon Anderson	Los Angeles, CA, United States	2014-01-22
Joshua Rockley	West Allis, WI, United States	2014-01-22	Stacey Hood-Marchig	Philadelphia, PA, United States	2014-01-22
Ali Shreve	Land O Lakes, FL, United States	2014-01-22	lyne gray	melbourne beach, FL, United States	2014-01-22
Breka Gunn	Columbia, SC, United States	2014-01-22	CHRIS GILL	GREENVILLE, SC, United States	2014-01-22
Cathy Wickham	San Francisco, CA, United States	2014-01-22	job fries	fredonia, NY, United States	2014-01-22
Elle Jordan	Cambridge, MA, United States	2014-01-22	Wanda Crawford	Bremerton, WA, United States	2014-01-22
john gordhamer	madison, SD, United States	2014-01-22	Hunter Hargis	Friendswood, TX, United States	2014-01-22
Alex Neal	Chattanooga, TN, United States	2014-01-22	Oscar Minjares	Santa Ana, CA, United States	2014-01-22
Kelly Ryan	Barryville, NY, United States	2014-01-22	maura mundici	modena, HI, United States	2014-01-22
John Bland	Las Vegas, NV, United States	2014-01-22	BONNIE VENTERS	FAIRBORN, OH, United States	2014-01-22
Denise Oliveira	East Providence, RI, United States	2014-01-22	kenneth gibson	riverside, CA, United States	2014-01-22
Iqan Kamal	Murphy, TX, United States	2014-01-22	Andrea Backus	Burlington, VT, United States	2014-01-22
Larry Heath Jr.	Winnetka, CA, United States	2014-01-22	MARYBETH VAN PELT	SENECA, SC, United States	2014-01-22
E. Diaz	Bx., NY, United States	2014-01-22	Calvin Bey	Fayetteville, AR, United States	2014-01-22
Kamilah Gilbert	Paterson, NJ, United States	2014-01-22	Margaret Viggiani	Seattle, WA, United States	2014-01-22
Deborah Parks	Auburndale, FL, United States	2014-01-22	Lee Booth	Ypsilanti, MI, United States	2014-01-22
Al Pollakusky	Amherst, NH, United States	2014-01-22	Cameron McAllister	Denver, CO, United States	2014-01-22
Yolanda Negron	Thonotosassa, FL, United States	2014-01-22	David Betz	Cupertino, CA, United States	2014-01-22
Alaine Salvati	Yorktown Heights, NY, United States	2014-01-22	Elizabeth Smock	Overland Park, KS, United States	2014-01-22
Joyce George	New Albany, IN, United States	2014-01-22	John Wolff	Jersey City, NJ, United States	2014-01-22
Jerry Matsui	Seattle, WA, United States	2014-01-22	Maija Fink	Waxhaw, NC, United States	2014-01-22
elizabeth plummer	West Chester, PA, United States	2014-01-22	gary cornwell	lincolnton, NC, United States	2014-01-22

Name	Location	Date	Name	Location	Date
Ann C. McGill	Brunswick, OH, United States	2014-01-22	sarah hudson	rensselaer, NY, United States	2014-01-22
Ginger Geronimo	Birmingham, AL, United States	2014-01-22	Lucy Kitchen	Detroit, MI, United States	2014-01-22
Barbara Smith	East Brunswick, NJ, United States	2014-01-22	Eliane Wilk	Los Angeles, CA, United States	2014-01-22
ron silver	Atlantic Beach, FL, United States	2014-01-22	Brian Watson	Wichita, KS, United States	2014-01-22
Tracey Schavone	Anahola, HI, United States	2014-01-22	Steven Pollmann	Edina, MN, United States	2014-01-22
Seth Richards	Carbondale, IL, United States	2014-01-22	CHRISTY DAVIS	kensett, AR, United States	2014-01-22
Deborah Hoffman	Lake Alfred, FL, United States	2014-01-22	meagan frame	beltsville, MD, United States	2014-01-22
Natalie Phillips	Phoenix, AZ, United States	2014-01-22	Bob Boyle	springfield, PA, United States	2014-01-22
Jack Sparks	Daly City, CA, United States	2014-01-22	Debra Siegersma	Jenison, MI, United States	2014-01-22
Lisa Brumby	Dudley, MA, United States	2014-01-22	Dr. L. Steele	Olathe, CO, United States	2014-01-22
Victoria Longo	Allentown, PA, United States	2014-01-22	Todd Waymon	Silver Spring, MD, United States	2014-01-22
Marcia de Oliveira	Newark, NJ, United States	2014-01-22	Robert Riley	Savannah, GA, United States	2014-01-22
Sarah Doyle	Saint Paul, MN, United States	2014-01-22	Jacqueline Moresi	San Francisco, CA, United States	2014-01-22
scott carrier	APQ, AP, United States	2014-01-22	Judy Ashway	Belmont, MA, United States	2014-01-22
rose dionne	windsor, CT, United States	2014-01-22	Misty Farrell	Murfreesboro, TN, United States	2014-01-22
Jean Conca	White Plains, NY, United States	2014-01-22	Phillip Smith	Damascus, MD, United States	2014-01-22
Angelika Tann	Spokane, WA, United States	2014-01-22	Elayne Feinsod	ACton, MA, United States	2014-01-22
Tiffany Moore	Terrell, TX, United States	2014-01-22	Sallie Rivers	Black Mountain, NC, United States	2014-01-22
Jennifer Sager	Dundalk, MD, United States	2014-01-22	Ronald Schindler	United States	2014-01-22
Susan Flynn	Aurora, CO, United States	2014-01-22	Matt Turek	Clinton Township, MI, United States	2014-01-22
Yvonne Townsley	Louisburg, NC, United States	2014-01-22	Bob Hammond	Salem, OR, United States	2014-01-22
erin boyd	jefferson, OH, United States	2014-01-22	Patricia Decker	northport, FL, United States	2014-01-22
Cynthia Molina	Norfolk, VA, United States	2014-01-22	figen erdogan	istanbul, TN, United States	2014-01-22
Timothy Byrd	Philadelphia, PA, United States	2014-01-22	Adhara Baker	Atlanta, GA, United States	2014-01-22
Robert Burns	Wheeler, OR, United States	2014-01-22	Marilyn Markley	Pahoa, HI, United States	2014-01-22
Cheryl Slate	Watertown, NY, United States	2014-01-22	Gina Paige	Glen Allen, VA, United States	2014-01-22
Lewis Gottesman	Raleigh, NC, United States	2014-01-22	Mary Lou Sheehan	Mesquite, TX, United States	2014-01-22
James Hellman II	Jefferson, OR, United States	2014-01-22	Kat Schutte	glendale, AZ, United States	2014-01-22
PATT YAMEN	chile, CA, United States	2014-01-22	jeff hurst	palmer, MA, United States	2014-01-22
Nancy Dota	Westford, MA, United States	2014-01-22	Judith Williamson	Lutz, FL, United States	2014-01-22
Peberlynn Moreta	Boston, MA, United States	2014-01-22	Ambar Alexatos	Houston, TX, United States	2014-01-22
Richard Sanderell	San Francisco, CA, United States	2014-01-22	Abbie Garrett	Midland, TX, United States	2014-01-22

Name	Location	Date
Colleen Kelly	Glenside, PA, United States	2014-01-22
Scott Starsman	Rodanthe, NC, United States	2014-01-22
Steve McGuire	Berwyn, IL, United States	2014-01-22
Rick Sabo	Gibsonia, PA, United States	2014-01-22
Osvaldo Ruiz	San Francisco, CA, United States	2014-01-22
Richard Han	Ann Arbor, MI, United States	2014-01-22
Bobbie Almy	Charlotte, MI, United States	2014-01-22
gaylan paige	sonoma california, CA, United States	2014-01-22
Annette Hamilton	Gibsonville., NC, United States	2014-01-22
David Judd	Eureka, MO, United States	2014-01-22
Christine Hutchinson	Wallingford, PA, United States	2014-01-23
Charles Higdon	Baltimore, MD, United States	2014-01-23
David Lively	Urbanna, VA, United States	2014-01-23
David Finnegan	Henrico, VA, United States	2014-01-23
Harold Brennan	Rodanthe, NC, United States	2014-01-24
E Paul Howanitz	Centerville, IN, United States	2014-01-24
Patrick Brennan	Newtown, CT, United States	2014-01-24
Shawn Brennan	hartsdale, NY, United States	2014-01-24



DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
Washington Regulatory Field Office
2407 West 5th Street
Washington, North Carolina 27888

IN REPLY REFER TO:

February 20, 2014

Regulatory Division

Subject: Action ID, SAW-2012-01153

Mr. Richard W. Hancock
Project Development and Environmental Analysis Unit
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Mr. Hancock:

Please reference your December 13, 2013, correspondence requesting our review and comments concerning the Environmental Assessment and Section 4(f) Evaluation for NC 12-Rodanthe Breach Long-Term Improvements Bonner Bridge Replacement Project Phase IIb, TIP No. 2500, Dare County, North Carolina. The purpose of the Environmental Assessment is to document changes to Phase IIb of the Parallel Bridge Corridor with NC 12 Transportation Management Plan Alternative since the 2010 ROD was issued. In response to your request we have the following comments:

1. Page 1-2, Section 1.1, **Purpose of the Environmental Assessment:** The stated purpose of this document is to address changes to the project area in Phase IIb of the Bonner Bridge Replacement Project (B-2500). This document is based on the 2010 ROD and other NEPA documents that describe impacts associated with other phases of the project. Because the changes to Phase I and Phase IIa are described in detail in the 2013 ROD for Phase IIa, we suggest that the discussion in this document be limited to changes in conditions, impacts and design within Phase IIb of the Bonner Bridge Replacement Project (B-2500).
2. Page 2-1, **Description of Phase IIb Alternatives Analysis:** Several alternatives were determined to be unreasonable because they do not meet the project purpose and need. Although the purpose and need are discussed in other NEPA documents, it would be helpful to include the purpose and need statement in this section.
3. Page 4-28, Section 4.2.5.3 **Wetland and Open Water Habitat:** Impact values in this section include fill associated with bridge construction and piling installation. The U.S. Coast Guard has jurisdiction for permitting bridges over navigable waters of the United States through Section 9

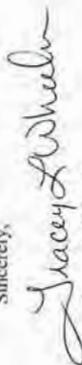
of the Rivers and Harbors Act of 1899 and the General Bridge Act of 1946. The Corps of Engineers does not have permit authority for these projects. Therefore, the US Army Corps of Engineers would not include impacts associated with bridge construction and piling installation when calculating impacts to jurisdictional waters and wetlands.

4. Page 4-45, Section 4.4 **Phase IIb Permits and Approvals:** US Army Corps of Engineers Permits: We agree that a Section 404 permit will be required to authorize discharges of dredged or fill material required for road construction. Please be aware that impacts associated with bridge construction and demolition would not be included in the Section 404 permits. Any application submitted for authorization should not include impacts associated with piling installation or bridge construction.

5. Page 7-1, **Conclusion:** Based on the information provided in the EA and the small amount of impact associated with road construction, we agree that changes identified in this document would not result in new significant impacts.

As a major permitting and cooperating agency, we appreciate the opportunity to coordinate with you prior to the finalization of the ROD. The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete the Customer Satisfaction Survey located at <http://per2.nwp.usace.army.mil/survey.html> to complete the survey online. If you have any questions regarding our comments, please do not hesitate to contact me at the Washington Regulatory Field Office, telephone (910) 251-4627.

Sincerely,



Tracey L. Wheeler
Regulatory Project Manager

Copies Furnished:

Renee Giedhill-Earley
North Carolina State Historic Preservation Office
4617 Mail Service Center
Raleigh, North Carolina 27699-4617

Mr. Doug Huggett
Division of Coastal Management
North Carolina Department of Environment, And Natural Resources
400 Commerce Avenue
Raleigh, North Carolina 28557-3421

Mr. Fritz Rohde
National Marine Fisheries Service
101 Pivers Island Road
Beaufort, North Carolina 28516

Mr. Chris Militscher
U.S. Environmental Protection Agency
Region 4 NEPA Program Office
61 Forsyth Street, SW
Atlanta Georgia 30303

Mr. Pete Benjamin
U.S. Fish and Wildlife Service
Fish and Wildlife Enhancement
Post Office Box 33726
Raleigh, North Carolina 27636-3726

Mr. Travis Wilson
Eastern Region Highway Project Coordinator
Habitat Conservation Program
1142 L-85 Service Road
Creedmoor, North Carolina 27522

Mr. Gary Jordan
U.S. Fish and Wildlife Service
Post Office Box 33726
Raleigh, North Carolina 27636-3726

Mr. David Wainright
North Carolina Division of Water Quality
1650 Mail Service Center
Raleigh, North Carolina 27699-1650

Mr. Clarence Coleman, PE Federal Highway Administration
310 New Bern Avenue, Suite 410
Raleigh, North Carolina 27601-1418



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
2837 13th Avenue South
St. Petersburg, Florida 33701-5505
<http://seero.nmfs.noaa.gov>

January 31, 2014

F/SER47:FR/pw

(Sent via Electronic Mail)

Richard W. Hancock, PE
Project Development & Environmental Analysis Manager
N.C. Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Attention: Beth Smyrce

Dear Mr. Hancock:

NOAA's National Marine Fisheries Service (NMFS) has reviewed the Environmental Assessment (EA) *NC 12 - Rodanthe Breach Long-Term Improvements Bomber Bridge Replacement Project Phase IIb* dated December 2, 2013, prepared by the North Carolina Department of Transportation (NCDOT) and Federal Highway Administration (FHWA). The EA evaluates two alternatives selected by the NCDOT Merger Team for what the EA refers to as the Rodanthe Breach Area between the southern end of the 2.1-mile section of highway in the southern half of the Pea Island National Wildlife Refuge (PINWR) and the highway's intersection with Myrna Peters Road (SR 1492) in Rodanthe: 1) Bridge within Existing NC Highway 12 Easement Alternative and 2) Bridge on New Location Alternative (extending through a 2.6-mile portion Pamlico Sound). EA Section 1.1 explains how this EA relates to previously completed environmental reviews, including the 2008 Final Environmental Impact Statement for replacement of the Rodanthe Breach Area. EA Section 3.3 identifies Bridge within Existing NC 12 Easement as the preferred alternative and EA Section 6.4 concludes this alternative falls within the range of environmental impacts considered in the previously completed environmental reviews, which included an essential fish habitat (EFH) consultation. As the nation's federal trustee for the conservation and management of marine, estuarine, and diadromous fishery resources, the following comments are provided pursuant to the authorities of the Fish and Wildlife Coordination Act and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

EA Section 6.4 summarizes the past EFH coordination for the project. Impacts to EFH from the Bridge within Existing NC 12 Easement Alternative were examined in the 2008 Final Environmental Impact Statement and its EFH Assessment. After examining environmental changes that have occurred since those assessments were completed, NCDOT and FHWA conclude the EFH Assessment for the Bridge within Existing NC 12 Easement Alternative does not require augmentation, and NMFS agrees with this conclusion. In contrast, the Bridge on New Location Alternative was not evaluated previously and is examined in EA section 4.2.5.5.

The Bridge within Existing NC 12 Easement Alternative is approximately 2.5 miles in length with the bridge portion approximately 2.3 miles long. This alternative would replace NC Highway 12 with a bridge over the entire portion of the Rodanthe Breach Area considered geologically susceptible to breaches and would not require a change in the existing easement that allows NC Highway 12 within PINWR. Under current conditions, this alternative does not impact EFH beyond what has been

previously evaluated; however with continual shoreline erosion, the bridge is expected to impact surf zone EFH eventually, but the timing remains uncertain.

The Bridge on New Location Alternative is approximately 3.0 miles in length with the bridge portion approximately 2.6 miles long. The proposed location of the bridge differs substantially from the route proposed when this alternative was first coordinated with the NMFS. The EA refers to this earlier route as Bridge South (EA Figure 4). The new route is shifted 930 to 950 feet further westward into Pamlico Sound to address safety issues and concerns raised by PINWR staff. This alternative would avoid the portion of NC Highway 12 considered geologically susceptible to breaches, would be less vulnerable to future shoreline erosion, and would result in a net reduction of the NC Highway 12 acreage within PINWR. This new alignment requires 2.79 acres of new easement in PINWR. To mitigate for impacts from new bridge piles and shading from the bridge deck in PINWR, NCDOT would remove the 1.8 miles of NC Highway 12 in the southern end of the refuge, which would result in a gain of 19.27 acres. Within Pamlico Sound, the entire footprint of the bridge would be over submerged aquatic vegetation (SAV) habitat with a permanent impact on 11.34 acres (stated as 11.23 acres on page 4-32). SAV surveys in 2013 documented that 88% of the plots contained SAV; 45% of the plots had 60% or greater coverage.

The EA on page 4-32 states "The bridge deck and pile presence impacts listed above would result in some loss of EFH (under the piles) and in changes in light levels of the area underneath the bridge and for some distance surrounding the bridge. These changes are expected to have a minimal adverse effect on EFH, managed species, and SAV functions because of the extensive distribution of SAV throughout the area and because the bridge would be over 15 feet above mean high water." NMFS strongly disagrees with this statement. In *Fishery Ecosystem Plan of the South Atlantic Region*, the South Atlantic Fishery Management Council (SAFMC) reviews the ecosystem services SAV habitat provides fishery species, and SAFMC identifies SAV as a Habitat Area of Particular Concern. The EA provides no justification for the conclusion reached by NCDOT and FHWA and proposes no compensatory mitigation for the 11.34 acres of SAV habitat impacts.

On September 17, 2013, representatives from NMFS, U.S. Army Corps of Engineers, North Carolina Division of Coastal Management, and North Carolina Division of Marine Fisheries met with NCDOT representatives to review the most recent SAV habitat maps and the proposed routes for Bridge South and the new route described in the EA. It was clearly evident then that pushing the location further out into Pamlico Sound greatly increased impacts to SAV habitat, and NMFS advised NCDOT during this meeting that while the closer-to-shore Bridge South alternative may be acceptable, NMFS was unlikely to accept the more western bridge alignment given the extensive impacts to SAV habitat. So while NMFS is relatively pleased to see NCDOT and FHWA identify Bridge within Existing NC Highway 12 Easement Alternative as the preferred alternative in the Draft EA, NMFS remains very concerned that the Final EA may revise this preference to one that would have significant, unacceptable impacts to SAV habitat.

EFH Conservation Recommendation

Section 305(b)(4)(A) of the Magnuson-Stevens Act requires NMFS to provide EFH conservation recommendations when an activity is expected to adversely impact EFH. Based on this requirement, NMFS provides the following:

EFH Conservation Recommendations

1. The Final EA shall identify the Bridge within Existing NC Highway 12 Easement Alternative as the selected alternative for the Rodanthe Breach Area.
2. All permanent and temporary impacts to SAV and salt marsh habitat shall be fully mitigated after project plans reflect all practicable avoidance and minimization. The impact avoidance and minimization measures must be approved by NMFS, and the compensatory mitigation must be approved by NMFS.





United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance

Richard B. Russell Federal Building
75 Spring Street, S.W., Suite 1144
Atlanta, Georgia 30303



ER 13/0786
9043.1

January 23, 2014

Section 305(b)(4)(B) of the Magnuson-Stevens Act and its implementing regulations at 50 CFR 600.920(k), requires the NCDOT and FHWA to provide a written response to the EFH recommendations within 30 days of receipt. If it is not possible to provide a substantive response within 30 days, an interim response should be provided to NMFS. A detailed response must then be provided prior to final approval of the action. The detailed response must include a description of measures proposed by NCDOT and FHWA to avoid, mitigate, or offset the adverse impacts of the activity. If the response from NCDOT and FHWA is inconsistent with the EFH conservation recommendations, the NCDOT and FHWA must provide a substantive discussion justifying the reasons for not following the recommendation. The detailed response should be received by the NMFS at least ten days prior to final approval of the action.

Thank you for the opportunity to provide these comments. Related questions or comments should be directed to the attention of Mr. Fritz Rohde at our Beaufort Field Office, 101 Pivers Island Road, Beaufort, North Carolina 28516-9722, or at (252) 838-0828.

Sincerely,

/ for

Virginia M. Fay
Assistant Regional Administrator
Habitat Conservation Division

Richard W. Hancock, PE
N.C. Department of Transportation
Project Development and Environmental Analysis
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Re: Comments and Recommendations on the NC-12 Rodanthe Breach Long Term Improvements (Bonner Bridge Replacement Project Phase IIb), Dare County, NC

cc:

- NCDOT, bsmyre@ncdot.gov
- FHWA, Ron.Lucas@dot.gov
- NCDENR, Cathy.Brittingham@ncdenr.gov
- NCDENR, Kevin.Hart@ncdenr.gov
- USACE, Tracey.L.Wheeler@usace.army.mil
- EPA, Militscher,Chris@epa.gov
- FWS, Gary_Jordan@fws.gov
- FWS, Pete_Benjamin@fws.gov
- SAFMC, Roger.Pugliese@safmc.net
- F/SER4, David.Dale@noaa.gov
- F/SER47, Fritz.Rohde@noaa.gov

Dear Mr. Hancock:

The United States Department of the Interior (Department) has reviewed the Environmental Assessment (EA) and Section 4(f) Evaluation for NC-12 Rodanthe Breach Long-Term Improvements (Bonner Bridge Replacement Project Phase IIb) in Dare County, North Carolina (TIP No. B25008) and we offer the following comments.

General Comments

While the North Carolina Department of Transportation (NCDOT) has studied a range of alternatives for this phase of the project, it is understood that only two detailed study alternatives remain under consideration at this time (1) bridge on new location and (2) bridge within existing NC 12 easement. We understand that the bridge within existing NC 12 easement is the NCDOT preferred alternative.

The alternative referred to as "bridge within existing NC 12 easement" would not require any new easement from the Pea Island National Wildlife Refuge (PINWR); however it would maintain approximately 1.8 miles of elevated road/bridge within the boundaries of the PINWR. Construction of this alternative would have the greatest adverse effects to federally threatened and endangered species. Despite the fact that the elevated road will be designed to allow natural coastal processes to occur (e.g. overwash and island migration), the presence of the structure will continue to affect other wildlife resources that the refuge manages. Also, the Department is concerned that once the elevated road/bridge is constructed, there will be perpetual pressure from local governments, the public, or others to continue beach nourishment projects. Perpetual beach

nourishment would continue to have long-term adverse effects on federally threatened and endangered species, migratory birds, and other wildlife species, especially on the portion of the project within PINWR.

Although the bridge on new location alternative would require 2.79 acres of new easement from PINWR, it would have the greater benefit of removing approximately 1.8 miles of NC 12 from within the refuge and restoring 19.27 acres of the habitat within PINWR (a net return of 16.48 acres to PINWR). This alternative would better allow for natural coastal processes to occur, would greatly minimize adverse effects to federally protected species, would allow PINWR staff to better manage wildlife resources unhindered by the presence of a road, and would remove the bridge from the direct hazards and complications created by the ocean environment. The Department prefers the bridge on new location alternative.

Activities on the barrier island ecosystem that have the potential to affect PINWF also have the potential to indirectly or cumulatively affect Cape Hatteras National Seashore.

Specific Comments

On page 2-16, the EA references Endangered Species Act Section 7 consultation between the U.S. Army Corps of Engineers (USACE) and the US Fish and Wildlife Service (Service) on the Rodanthe 'S' Curve interim beach nourishment project (a separate but related project addressed in other documents). Please note that only informal Section 7 consultation occurred. The USACE has not initiated formal Section 7 consultation. The USACE rendered a biological conclusion of "May Affect, Not Likely to Adversely Affect" for federally listed threatened and endangered species. The Department concurs with that conclusion only if the interim beach nourishment is completed by May 15, 2014. If the project continues beyond that date, there may be adverse effects to nesting sea turtles.

Section 2.6.2.2, states that the Rodanthe S-Curve beach nourishment project "is not part of the Bonner Bridge Replacement Project." While the funding stream and administrative process of the beach nourishment project differs from the rest of the Parallel Bridge Corridor/Transportation Management Plan (PBC/TMP), it is in a practical sense all part of the PBC/TMP. The beach nourishment is intended to provide interim protection for NC 12 while the Phase II Bridge is constructed. The EA should reflect that impacts to natural systems from the beach nourishment project are related to and cumulative with impacts from Phase IIb.

Section 3.1 there is a lack of detail in the discussion of the new PINWR easement for the alternative on new location. One point to include would be the acknowledgement by PINWR that such a proposed easement change could likely be considered a minor modification and could be found compatible with stipulations.

Section 3.1 states that existing NC 12 south of PINWR will be retained as a local access road, and Section 3.2 states that at-grade frontage roads will be constructed on each side of NC 12 within Rodanthe. The natural systems impacts analysis in Section 4.2.5 does not appear to address the specific impacts of these access roads and their future maintenance on the

environment. Will the retention of a portion of NC 12 or the frontage roads require perpetual dune construction/maintenance or beach nourishment?

Page 3-2 the bridge on new location alternative is described as having a bicycle safe bridge rail. Page 3-3 states that the bridge within existing NC 12 easement alternative will have bicycle safe bridge rails mounted on a 36-inch parapet to partially block headlights that otherwise could affect sea turtle nesting on the beach. The Department believes that the 36-inch parapet would also be necessary on a portion of the bridge on the new location alternative as well. At most, the bridge in the Pamlico Sound would only be approximately 0.75 mile from the beach, a distance where light from traffic could still adversely affect sea turtle hatchlings in their attempt to reach the ocean. At a minimum, the portion of this alternative that is directly west of the PINWR should utilize the 36-inch parapet. The 36-inch parapet would not be necessary for the portion of the alternative directly west of the village of Rodanthe due to the presence of existing lights. This comment also applies to page 5-18 in its discussion of mitigation for minimizing impacts to sea turtles.

Sections 4.1.6 and 4.2.5.4 address federally protected species. On September 30, 2013, the Department proposed to list the rufa red knot (*Calidris canutus rufa*) as a threatened species under the Endangered Species Act. This species is not addressed in the EA. Although the species does not nest in North Carolina, the project study area does contain potential wintering and foraging habitat. Rufa red knots are regularly observed along Cape Hatteras National Seashore and on the north and south portions of PINWR. The highest numbers of rufa red knots have been observed in April during the spring migration. During 2013, over 12,000 were documented at the Cape Hatteras National Seashore. The bridge within existing NC 12 easement alternative would likely have adverse effects on this species. Although the species is not currently protected by the Endangered Species Act, it will likely become protected prior to or during the construction of this project. To address this species and to provide for a potential incidental take statement, the Federal Highway Administration (FHWA) may opt to initiate a formal Section 7 conference. Formal conferences follow the same procedures as formal consultation. The opinion issued at the end of a formal conference is called a conference opinion. However, the incidental take statement provided with a conference opinion does not take effect until the Department adopts the conference opinion as a biological opinion after the species is listed. Since other phases of the Bonner Bridge Replacement Project will likely commence construction soon, we believe it is prudent that the rufa red knot be addressed comprehensively for all phases as soon as possible to avoid any delays or interruptions of construction.

Page 4-14 references future relocation of utilities along NC 12. The Department recommends collocating utilities on the new bridge to avoid impacts to wildlife habitat.

Page 4-23 states: "The visitor center is inherent to USFWS-Refuge's mission." This is inaccurate. While the visitor center undoubtedly enhances the Refuge's mission, the fish and wildlife resources and ecosystem integrity can be protected, managed and enhanced with or without the visitor center. The Department understands that the visitor center will likely have to be removed at some point in the future.

The agreement was not “up to 36 inches” but rather it was precisely 36 inches. This is an important distinction since anything less than 36 inches will allow more vehicle’s light to be seen from the beach, thus increasing adverse effects on sea turtles.

Page 7-1 states “...FHWA believes that the changes identified and assessed in this EA for the two Phase IIb detailed study alternatives...would not result in new, significant impacts not previously identified in the 2008 FEIS, 2010 EA, 2010 ROD, or Phase IIa EA”. The Department does not agree with this conclusion. The document does not address potential impacts to the recently proposed threatened rufa red knot. We believe that adverse effects to this species are likely to occur with the bridge within existing NC 12 easement alternative but likely avoided with the bridge on new location alternative.

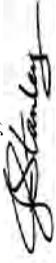
Section 4(f) Evaluation Comments

The Department does not concur with Section 4(f) approval of this project at this time. We would be pleased to reconsider this position upon receipt of material that includes adequate information and full discussion of measures to minimize harm.

In conclusion, we have worked in good faith with NCDOT and FHWA for many years in an effort to ensure the citizens of the county, state, and nation have dependable transportation along North Carolina’s Outer Banks. We remain committed to working with all parties to accommodate transportation needs within the confines and limits allowable by law, regulation and policy.

We appreciate the opportunity to review and provide comments on this project. If you have any questions regarding our response, please contact Gary Jordan with the U.S. Fish and Wildlife Service at (919) 856-4520 ext. 32 or Anita Barnett with the National Park Service at (404) 507-5706. I can be reached on (404) 331-4524 or via email at joyce_stanley@ios.doi.gov.

Sincerely,



Joyce Stanley, MPA
Regional Environmental Protection Specialist

cc: Christine Willis – FWS
Chester McGhee – BIA
Gary Lecain - USGS
Anita Barnett – NPS
Robin Ferguson – OSMRE
OEPC – WASH

The last sentence on page 4-23 is misleading. The analysis producing the 9% loss in refuge visitation is based upon tourists not having access. The loss of fishing access from the catwalk on the existing Bonner Bridge (or fishing pier after the new bridge is built) is a separate issue as there will still be access to PINWR. These two lines of thought should be separated, and the loss of fishing access from the catwalk should be dealt with independently to have an accurate assessment.

Page 4-29 references a technical memorandum on threatened and endangered species for Phase IIb. Although we have reviewed and responded to the technical memorandum for Phase IIa, we were unaware of such a document for Phase IIb.

Page 4-31 states that the Section 7 biological conclusions for sea turtles, piping plovers (*Charadrius melodus*) and seabeach amaranth (*Amaranthus pumilus*) remain unchanged from previous Section 7 consultation. We concur with this statement, but again state that the proposed threatened rufa red knot has yet to be addressed under Section 7.

On page 5-4 the Section 4(f) Evaluation considers PINWR as a historic property but continues to show a profound aversion to considering PINWR as a wildlife refuge, with the reason cited as “joint planning” in the same context as that which occurred with the Cape Hatteras National Seashore. It is unfortunate that, despite our previous comments on the issue, the FHWA still does not recognize the differences.

Although the Section 4(f) Evaluation contains a statement that no staging areas are planned for location within PINWR, there is no discussion of potential impacts from staging areas or borrow areas within the EA. These topics should be addressed in the document as they are likely to affect the human environment and natural resources somewhere on Hatteras Island.

Table 8 on page 5-16 renders a biological conclusion of “Not Likely to Adversely Affect protected species” for the bridge on new location alternative. We do not concur with that biological conclusion for sea turtles. The bridge would be at most 0.75 mile from the beach, light from vehicle headlights could have an adverse effect on sea turtle hatchlings trying to reach the ocean.

Page 6-6 states “As a part of finalizing the Phase II alternatives for implementation, including the Phase IIb project that is the subject of this EA, FHWA has consulted with the USFWS ...in compliance with Section 7 of the ESA of 1973.” This is incorrect. The FHWA has consulted for Phase IIa, but not Phase IIb.

Page 6-7 states “...the bridge rail commitment most likely would apply only to the Bridge within Existing NC 12 Easement alternative.” The 36-inch parapet with rails is needed for a portion of the bridge on new location alternative.

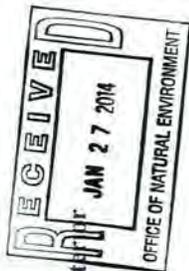
The last paragraph of page 6-8 states “The agencies agreed on a parapet design of 30 inches high for Phase I and up to 36 inches high for the bridge railing through the Refuge with Phase IIa...”



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27656-3726

January 9, 2014



Richard W. Hancock, PE
N.C. Department of Transportation
Project Development and Environmental Analysis
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Mr. Hancock:

This letter is in response to your December 13, 2013 letter which requested comments from the U.S. Fish and Wildlife Service (Service) on the Federal Environmental Assessment (FEA) and Section 4(f) Evaluation for NC-12 Rodanthe Breach Long-Term Improvements (Bonner Bridge Replacement Project Phase IIb) in Dare County, North Carolina (TIP No. B-2500B). These comments are provided in accordance with provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543). These comments cover the concerns of both the Raleigh Ecological Services Field Office and the Pea Island National Wildlife Refuge (PINWR).

General Comments

While the North Carolina Department of Transportation (NCDOT) has studied a range of alternatives for this phase of the project, it is understood that only two detailed study alternatives remain under consideration at this time – 1) bridge on new location and 2) bridge within existing NC 12 easement. We understand that the bridge within existing NC 12 easement is the NCDOT preferred alternative.

Although the bridge within existing NC 12 easement alternative would not require any new easement from the PINWR, it would maintain approximately 1.8 miles of elevated road/bridge within the boundaries of the PINWR. Construction of this alternative would have the greatest adverse effects to federally threatened and endangered species. Despite the fact that the elevated road will be designed to allow natural coastal processes to occur (e.g. overwash and island migration), the presence of the structure will continue to affect other wildlife resources that the refuge manages. Also, the Service is concerned that once the elevated road/bridge is constructed, there will be perpetual pressure from local governments, the public, or others to continue beach nourishment projects. Perpetual beach nourishment would continue to have long-term adverse effects on federally threatened and endangered species, migratory birds, and other wildlife species, especially on the portion of the project within PINWR.

Although the bridge on new location alternative would require 2.79 acres of new easement from PINWR, it would have the greater benefit of removing approximately 1.8 miles of NC 12 from within the refuge and restoring 19.27 acres of the habitat within PINWR (a net return of 16.48 acres to PINWR). This alternative would better allow for natural coastal processes to occur, would greatly minimize adverse effects to federally protected species, would allow PINWR staff to better manage wildlife resources unhindered by the presence of a road, and would remove the bridge from the direct hazards and complications created by the ocean environment. The Service prefers the bridge on new location alternative.

Specific Comments

On page 2-16, the FEA references Endangered Species Act Section 7 consultation between the U.S. Army Corps of Engineers (USACE) and the Service on the Rodanthe 'S' Curve interim beach nourishment project (a separate but related project addressed in other documents). Please note that only informal Section 7 consultation occurred. The USACE has not initiated formal Section 7 consultation. The USACE rendered a biological conclusion of "May Affect, Not Likely to Adversely Affect" for federally listed threatened and endangered species. The Service concurs with that conclusion only if the interim beach nourishment is completed by May 15, 2014. If the project continues beyond that date, there may be adverse effects to nesting sea turtles.

In Section 2.6.2.2, the FEA states that the Rodanthe S-Curve beach nourishment project "is not part of the Bonner Bridge Replacement Project." While the funding stream and administrative process of the beach nourishment project differs from the rest of the Parallel Bridge Corridor/Transportation Management Plan (PBC/TMP), it is in a practical sense all part of the PBC/TMP. The beach nourishment is intended to provide interim protection for NC 12 while the Phase IIb bridge is constructed. The FEA should reflect that impacts to natural systems from the beach nourishment project are related to and cumulative with impacts from Phase IIb.

In Section 3.1 there is a lack of detail in the discussion of the new PINWR easement for the alternative on new location. One point to include would be the acknowledgment by PINWR that such a proposed easement change could likely be considered a minor modification and could be found compatible with stipulations.

Section 3.1 states that existing NC 12 south of PINWR will be retained as a local access road, and Section 3.2 states that at-grade frontage roads will be constructed on each side of NC 12 within Rodanthe. The natural systems impacts analysis in Section 4.2.5 does not appear to address the specific impacts of these access roads and their future maintenance on the environment. Will the retention of a portion of NC 12 or the frontage roads require perpetual dune construction/maintenance or beach nourishment?

On page 3-2 the bridge on new location alternative is described as having a bicycle safe bridge rail. Page 3-3 states that the bridge within existing NC 12 easement alternative will have bicycle safe bridge rails mounted on a 36-inch parapet to partially block headlights that otherwise could affect sea turtle nesting on the beach. The Service believes that the 36-inch parapet would also be necessary on a portion of the bridge on the new location alternative as well. At most, the

bridge in the Pamlico Sound would only be approximately 0.75 mile from the beach, a distance where light from traffic could still adversely affect sea turtle hatchlings in their attempt to reach the ocean. At a minimum, the portion of this alternative that is directly west of the PINWR should utilize the 36-inch parapet. The 36-inch parapet would not be necessary for the portion of the alternative directly west of the village of Rodanthe due to the presence of existing lights. This comment also applies to page 5-18 in its discussion of mitigation for minimizing impacts to sea turtles.

Sections 4.1.6 and 4.2.5.4 address federally protected species. On September 30, 2013 the Service proposed to list the rufa red knot (*Calidris canutus rufa*) as a threatened species under the Endangered Species Act. This species is not addressed in the FEA. Although the species does not nest in North Carolina, the project study area does contain potential wintering and foraging habitat. The bridge within existing NC 12 easement alternative would likely have adverse effects on this species. Although the species is not currently protected by the Endangered Species Act, it will likely become protected prior to or during the construction of this project. To address this species and to provide for a potential incidental take statement, the Federal Highway Administration (FHWA) may opt to initiate a formal Section 7 conference. Formal conferences follow the same procedures as formal consultation. The opinion issued at the end of a formal conference is called a conference opinion. However, the incidental take statement provided with a conference opinion does not take effect until the Service adopts the conference opinion as a biological opinion after the species is listed. Since other phases of the Bonner Bridge Replacement Project will likely commence construction soon, we believe it is prudent that the rufa red knot be addressed comprehensively for all phases as soon as possible to avoid any delays or interruptions of construction.

Page 4-14 references future relocation of utilities along NC 12. The Service recommends collocating utilities on the new bridge to avoid impacts to wildlife habitat.

Page 4-23 states "The visitor center is inherent to USFWS-Refuge's mission." This is inaccurate. While the visitor center undoubtedly enhances the Refuge's mission, the fish and wildlife resources and ecosystem integrity can be protected, managed and enhanced with or without the visitor center. The Service understands that the visitor center will likely have to be removed at some point in the future.

The last sentence on page 4-23 is misleading. The analysis producing the 9% loss in refuge visitation is based upon tourists not having access. The loss of fishing access from the catwalk on the existing Bonner Bridge (or fishing pier after the new bridge is built) is a separate issue as there will still be access to PINWR. These two lines of thought should be separated, and the loss of fishing access from the catwalk should be dealt with independently to have an accurate assessment.

Page 4-29 references a technical memorandum on threatened and endangered species for Phase IIb. Although we have reviewed and responded to the technical memorandum for Phase IIa, we were unaware of such a document for Phase IIb.

Page 4-31 states that the Section 7 biological conclusions for sea turtles, piping plovers (*Charadrius melodus*) and seabach amaranth (*Amaranthus pumilus*) remain unchanged from previous Section 7 consultation. We concur with this statement, but again state that the proposed threatened rufa red knot has yet to be addressed under Section 7.

On page 5-4 the Section 4(f) Evaluation considers PINWR as a historic property but continues to show a profound aversion to considering PINWR as a wildlife refuge, with the reason cited as "joint planning" in the same context as that which occurred with the Cape Hatteras National Seashore. It is unfortunate that, despite our previous comments on the issue, the FHWA still does not recognize the differences.

Although the Section 4(f) evaluation contains a statement that no staging areas are planned for location within PINWR, there is no discussion of potential impacts from staging areas or borrow areas within the FEA. These topics should be addressed in the document as they are likely to affect the human environment and natural resources somewhere on Hatteras Island.

Table 8 on page 5-16 renders a biological conclusion of "Not Likely to Adversely Affect protected species" for the bridge on new location alternative. We do not concur with that biological conclusion for sea turtles. As previously stated, given the fact that the bridge would be at most 0.75 mile from the beach, light from vehicle headlights could have an adverse effect on sea turtle hatchlings trying to reach the ocean.

Page 6-6 states "As a part of finalizing the Phase II alternatives for implementation, including the Phase IIb project that is the subject of this EA, FHWA has consulted with the USFWS ...in compliance with Section 7 of the ESA of 1973." This is incorrect. The FHWA has consulted for Phase IIa, but not Phase IIb.

Page 6-7 states "...the bridge rail commitment most likely would apply only to the Bridge within Existing NC 12 Easement alternative." Again, we believe that the 36-inch parapet with rails is needed for a portion of the bridge on new location alternative.

The last paragraph of page 6-8 states "The agencies agreed on a parapet design of 30 inches high for Phase I and up to 36 inches high for the bridge railing through the Refuge with Phase IIa..." The agreement was not "up to 36 inches" but rather it was precisely 36 inches. This is an important distinction since anything less than 36 inches will allow more vehicle light to be seen from the beach, thus increasing adverse effects on sea turtles.

Page 7-1 states "...FHWA believes that the changes identified and assessed in this EA for the two Phase IIb detailed study alternatives...would not result in new, significant impacts not previously identified in the 2008 FEIS, 2010 EA, 2010 ROD, or Phase IIa EA". The Service does not agree with this conclusion. The document does not address potential impacts to the recently proposed threatened rufa red knot. We believe that adverse effects to this species are likely to occur with the bridge within existing NC 12 easement alternative (but likely avoided with the bridge on new location alternative). As previously stated, we believe that it is prudent that potential impacts to this species be addressed comprehensively for all phases of the Bonner Bridge Replacement Project.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY



REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-9980

In conclusion, we have worked in good faith with NCDOT and FHWA for many years in an effort to ensure the citizens of the county, state, and nation have dependable transportation along North Carolina's Outer Banks. We remain committed to working with all parties to accommodate transportation needs within the confines and limits allowable by law, regulation and policy.

The Service appreciates the opportunity to review this project. If you have any questions regarding our response, please contact Mr. Gary Jordan at (919) 856-4520, ext. 32.

Sincerely,

Pete Benjamin
Field Supervisor

Electronic copy:

- Tracey Wheeler, USACE, Washington, NC
- Chris Millscher, USEPA, Atlanta, GA
- Ron Lucas, FHWA, Raleigh, NC
- Mike Bryant, USFWS, Manteo, NC
- Scott Lanier, USFWS, Manteo, NC
- Dennis Stewart, USFWS, Manteo, NC
- Travis Wilson, NCWRC, Creedmoor, NC
- David Wainwright, NCDWR, Raleigh
- Cathy Brittingham, NCDCM, Raleigh

Date: January 23, 2014

Mr. Richard W. Hancock, P.E.
Manager, Project Development and Environmental
Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

SUBJECT: EPA Review Comments of the Federal Environmental Assessment for the Proposed NC 12 Rodanthe Breach Long-term Improvements, Bommer Bridge Replacement Project, Phase IIb; TIP No. B-2500B, Dare County, North Carolina

Dear Mr. Hancock:

The U.S. Environmental Protection Agency (EPA) has reviewed the subject document and is providing comments in accordance with Section 309 of the Clean Air Act and Section 102(2)(C) of the National Environmental Policy Act (NEPA). The North Carolina Department of Transportation (NCDOT) and the Federal Highway Administration propose to construct a new bridge south of the Pea Island National Wildlife Refuge to just north of the Rodanthe Historic District. The two detailed study alternatives include a bridge within the existing NC 12 easement and a bridge on new location that curves into Pamlico Sound and then reconnects with NC 12 near Rodanthe.

The NC 12/Bommer Bridge Replacement project is in the NEPA/Section 404 Merger process and EPA has been a participating member of this team including Phase II proposed projects. Section 1.0 of the Environmental Assessment (EA) includes the project history and relationship to other phases of the proposed project. NCDOT and FHWA have identified their preferred alternative as the Bridge within the Existing NC 12 Easement Alternative. EPA has provided specific technical review comments in an attachment to this letter (See Attachment A).

In summary, EPA has not identified an environmentally preferred alternative and from a direct impact standpoint both bridge alternatives evaluated by the transportation agencies are similar in jurisdictional impacts to wetlands. However, it was recognized by the NCDOT's Expert Panel that the Bridge on New Location DSA would allow for natural processes to occur in the vulnerable Rodanthe area without the potential need for additional interim actions to protect the existing NC 12 easement from shoreline erosion, storm events and future sea level rise. EPA will participate on the NEPA/Section 404 Merger team and work with NCDOT,

FHWA, and permitting and resources agencies on the selection of the Least Environmentally Damaging Practicable Alternative (LEDPA) for the Phase IIb project. Please feel free to contact Mr. Christopher Mifitscher of my staff at mifitscher.chris@epa.gov or 404-562-9512 should you have any questions concerning these comments.

Sincerely,

Heinz J. Mueller, Chief
NEPA Program Office
Office of Environmental Accountability

Attachment A

Cc: S. McClendon, USACE, w/attachments
A. Chapman, NCDENR, w/attachments

ATTACHMENT A
Technical Review Comments on Federal EA
Proposed NC 12 Rodanthe Breach Long-term Improvements, Bonner Bridge Replacement Project, Phase IIb
Dare County, North Carolina
TIP No.: B-2500B

Detailed Study Alternatives

The transportation agencies have identified two primary long-term detailed study alternatives (DSAs). Both alternatives involve a new bridge between the Pea Island National Wildlife Refuge (PINWR) and the town of Rodanthe. One alternative is on new location designed to the west into Pamlico Sound and re-approaching Rodanthe south of the Cross of Honor Way development (depicted on Figure 8). Figure 9 shows a photo-simulation of the other alternative which is within the existing NC 12 easement between PINWR and Rodanthe. Both DSAs were included in the general description of the Parallel Bridge Corridor with the PBC/TMP Alternative studied in the 2008 FEIS and 2010 EA. Other Phase IIb alternatives considered are identified in Figure 2 and include beach nourishment and bridges within the existing NC 12 easement and beach nourishment. Other alternatives, such as ferries, were generally considered during the scoping process but eliminated from further study in the Phase IIa 2010 EA.

The Bridge on New Location DSA is approximately 3.0 miles in length with 0.4 miles of that total being land approaches. The Bridge on Existing NC 12 Easement DSA is approximately 2.5 miles in total length with roadway approaches. The beach nourishment alternatives were eliminated for detailed study due to the concern for a suitable sand source over the project's estimated 50-year life.

Some refinements to the design of the bridge for both DSAs are discussed on Page 2-9 of the EA and include a reduction in the bridge height for both from the previous designs.

EPA notes that the NCDOT's approved panel of coastal experts (The "Panel") recommended that placing NC 12 on a bridge in Pamlico Sound (Bridge on New Location DSA) would be a better option than the Bridge within Existing Easement DSA because it would be less vulnerable to potential future changes in Hatteras Island resulting from shoreline erosion and breach formation (Page 2-13 of the EA). EPA recognizes that the Bridge on New Location DSA is also preferred by the U.S. Fish and Wildlife despite the potential additional direct impacts to PINWR. The NCDOT and FHWA prefer the Bridge on Existing NC 12 Easement DSA because it is entirely within the existing NC 12 easement, would require no new permanent easement within PINWR and avoids impacts to Pamlico Sound.

Section 2.6.2.2 of the EA addresses the U.S. Army Corps of Engineers (USACE) Rodanthe "S" Curve Interim Maintenance EA issued on October 15, 2003. This action includes approximately 11,300 feet of beach re-nourishment (1.7 million cubic yards of sand) within the Phase IIb project study area.

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

COUNTY: DARE

F02: HIGHWAYS AND ROADS

STATE NUMBER: 14-E-4220-0268
DATE RECEIVED: 12/18/2013
AGENCY RESPONSE: 01/13/2014
REVIEW CLOSED: 01/17/2014

MS CAROLYN PENNY
CLEARINGHOUSE COORDINATOR
CC&PS - DIV OF EMERGENCY MANAGEMENT
FLOODPLAIN MANAGEMENT PROGRAM
MSC # 4719
RALEIGH NC

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DENR LEGISLATIVE AFFAIRS
DEPT OF AGRICULTURE
DEPT OF CULTURAL RESOURCES
DEPT OF TRANSPORTATION

PROJECT INFORMATION

APPLICANT: N.C. Department of Transportation
TYPE: National Environmental Policy Act
Environmental Assessment

DESC: Proposal to replace the Herbert C. Romner Bridge - Phase IIB Rodanthe Breach
Long-Term Improvements TIP No. B-2500B

The attached project has been submitted to the N. C. State Clearinghouse for intergovernmental review. Please review and submit your response by the above indicated date to 1301 Mail Service Center, Raleigh NC 27699-1301.

If additional review time is needed, please contact this office at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED: NO COMMENT COMMENTS ATTACHED

SIGNED BY: John D. Burkholder

DATE: 06 JAN 2014

PREVIOUS COMMENTS ADDRESSED - RESPONDED.

Environmental Impacts

NCDOT updated the estimated acres of biotic communities within the Phase IIb project study from the 2008 FEIS to the 2012 existing levels on Table 2, page 4-9 of the EA. NCDOT also addressed changes to protected species from the 2008 FEIS in Section 4.1.6. The Bridge on New Location DSA would require 2.79 acres of new easement from PINWR but it would reportedly have the greater benefit by removing approximately 1.8 miles of NC 12 from within the refuge and potentially restoring 19.27 acres of the habitat within PINWR (a net return of 16.48 acres to PINWR).

Impacts to biotic communities including jurisdictional wetlands are shown in Table 4 of the EA. Impacts to jurisdictional wetlands for the Bridge on New Location DSA is estimated to be less than 1 acre and less than 0.1 of an acre for the Bridge on Existing NC 12 Easement DSA. Shading, temporary and other direct impacts to other biotic communities do not appear to be significantly different between the DSAs except for open water impacts associated with the Bridge on New Location DSA (Shading impacts expected to be approximately 11.23 acres).

Residential and business locations for the two DSAs are updated from the 2010 EA and included in Table 3 of the Phase IIb EA. The Bridge on New Location DSA has 2 residential relocations and 2 business relocations and the Bridge on Existing NC 12 Easement DSA has 5 residential relocations and 2 business relocations. The EA discusses on page 4-16 that the Bridge on Existing NC 12 Easement DSA would take the Liberty Gas Station/Island Convenience Store which is considered by locals to be an important part of the Rodanthe community.

Visual impacts to PINWR and the residences in Rodanthe are expected to be substantially lower for the Bridge on New Location DSA than with the Bridge on Existing NC 12 Easement DSA. Noise impacts from the Bridge on Existing NC 12 Easement DSA are expected to be greater than compared to the Bridge on New Location DSA (6 vs. 2).

EPA does not have an environmentally preferred alternative identified at this time. However, it was recognized by the NCDOT's expert Panel that the Bridge on New Location DSA would allow for natural processes to occur in the vulnerable Rodanthe area without the potential need for additional interim actions to protect the existing NC 12 easement from erosion and storm events. This alternative would also better allow for natural coastal processes to occur, would minimize potentially adverse effects to federally protected species, and would potentially lessen the bridge from the direct hazards and complications created by the proximity to the ocean and from future sea level rise. The Bridge on New Location DSA would also avoid the relocation of the Liberty Gas Station/Island Convenience Store.

CAROLINA STATE CLEARINGHOUSE
PARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

STATE NUMBER: 14-E-4320-0266
DATE RECEIVED: 12/18/2013
AGENCY RESPONSE: 01/13/2014
REVIEW CLOSED: 01/17/2014

F02: HIGHWAYS AND ROADS

COUNTY: DARE

MS RENEE SLEDEHILL-BARLEY
CLEARINGHOUSE COORDINATOR
DEPT OF CULTURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE
MSC 4617 - ARCHIVES BUILDING
RALEIGH NC



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DEPT OF CULTURAL RESOURCES
DEPT OF TRANSPORTATION

PROJECT INFORMATION
APPLICANT: N.C. Department of Transportation
TYPE: National Environmental Policy Act
Environmental Assessment

DESC: Proposal to replace the Herbert C. Bonner Bridge - Phase IIB Rodanthe Breach
Long-Term Improvements TIP No. B-2500B

The attached project has been submitted to the N. C. State Clearinghouse for
intergovernmental review. Please review and submit your response by the above
indicated date to 1301 Mail Service Center, Raleigh NC 27699-1301.

If additional review time is needed, please contact this office at (919) 807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED: NO COMMENT COMMENTS ATTACHED

DATE: 12/30/13

SIGNED BY: Renee Sledehill-Barley



North Carolina Department of Environment and Natural Resources
Division of Coastal Management

Pat McCorty
Governor
Braxton C. Davis
Director

John E. Swanda, III
Secretary

January 22, 2014

Lyn Hardison, Environmental Assistance Coordinator
N.C. Department of Environment and Natural Resources
Washington Regional Office
943 Washington Square Mall
Washington, NC 27889

RE: SCH NO. 14-0768, Environmental Assessment, Proposal to Replace the Herbert C. Bonner
Bridge - Phase IIB Rodanthe Breach Long-Term Improvements, TIP No. B-2500B, Dare County.

Dear Ms. Hardison:

The N.C. Division of Coastal Management (DCM) appreciates the opportunity to comment on the
Environmental Assessment (EA) for the above referenced project, Phase IIB Rodanthe Breach Long-
Term Improvements.

This project is being carried through the NEPA/404 Merger Process, and DCM is a member of the
NEPA/404 project team. It appears as though the information contained within the EA is consistent
with the information that has been provided to DCM, and upon which we have commented, through
the NEPA/404 Merger Process.

DCM understands that the transportation link that the Herbert C. Bonner Bridge and the connecting
NC Highway 12 provide between Rodanthe on Hatteras Island and Bodie Island is a critical
component in the safety of the residents and visitors of Hatteras Island and Ocracoke Island, and the
economic vitality of the Outer Banks. DCM is ready to continue to assist NCDOT in any way within
our authority to finalize and implement a permanent solution to this complicated and important
transportation need.

A formal DCM review of the project to determine consistency with the state's Coastal Management
Program will occur in conjunction with a review of the Coastal Area Management Act (CAMA) major
permit application. The CAMA major permit application will be circulated to the network of state
agencies that comprise North Carolina's Coastal Management Program. The statutes, rules and
policies of each of these agencies must be considered during the review of the CAMA major permit
application. This process will also include a determination of consistency with the enforceable policies
of the relevant CAMA land use plans.

During the CAMA major permit application review process, DCM may have additional comments, or raise additional concerns. DCM may also place conditions on any CAMA permit that is issued to further avoid, minimize and/or mitigate environmental impacts. The comments provided in this letter shall not preclude DCM from requesting additional information throughout the CAMA major permit application review process, and following normal permit processing procedures.

The following are especially pertinent sections of the CAMA statute and N.C. Administrative Code (NCAC) that will need to be carefully considered during the selection of a Least Environmentally Damaging Practicable Alternative (LEDPA) and development of a final project design.

- **Permanent Erosion Control Structures in an Ocean Shoreline [G.S. 113A-115.1(b)].** G.S. 113A-115.1(b) requires that no person shall construct a permanent erosion control structure in an ocean shoreline.

NCDDOT would need to demonstrate in the CAMA major permit application to DCM that any proposed retaining walls would only serve their defined purpose to keep approach fills within the existing NC 12 easement, and would not be constructed in a manner that would serve an additional purpose of acting as a permanent erosion control structure.

It is important to note that the Coastal Resources Commission (CRC) does not have the authority to issue a variance for compliance with a statute.

- **Erosion Setbacks for Oceanfront Construction [NCAC 15A 07H .0306(a)(2)].** These rules include erosion setbacks for oceanfront construction that are based on average long-term erosion rates that reflect changes in the North Carolina shoreline over nearly half a century.

It appears from the subject EA that based on current coastal conditions the Bridge on New Location alternative would meet the erosion setbacks for oceanfront construction, but that the Bridge within Existing NC 12 Easement alternative, including the associated frontage roads, would not meet the erosion setbacks for oceanfront construction. At the time of construction, the final project will need to adhere to the applicable oceanfront setbacks.

- **Public Trust Usage of Lands and Waters [15A NCAC 07H .0208(a)(2)(G)] and [15A NCAC 07H .0306(g)].** "Development shall not jeopardize the use of the waters for navigation or for other public trust rights in public trust areas including estuarine waters", and "Development shall not interfere with legal access to, or use of, public resources nor shall such development increase the risk of damage to public trust areas." Examples of navigation and other public trust rights that must be considered include, but are not limited to, commercial and recreational fishing vessels in Pamlico Sound and the Atlantic Ocean, fishing from the ocean and soundside shoreline, surfing, walking along the beach, swimming, etc.

DCM is concerned with the loss of recreational access to the oceans and sounds in the project area. The subject EA mentions that formal consultation with the National Marine Fisheries Service (NMFS) in 2013 yielded a new concern related to the effect of existing fishing at Oregon Inlet on protected turtles. The subject EA states that to satisfy NMFS concerns, "no fishing" signs will be installed on the catwalks of the existing Bonner Bridge during construction and on the portion of

the existing Bonner Bridge that will be left in place as a pier. NCDDOT should continue working with NMFS and the rest of the NEPA/404 project team to minimize the impacts of this project on public trust usage of lands and waters. All efforts should be made to reach an agreement to allow future fishing at Oregon Inlet.

- **Avoidance and Minimization of CAMA Areas of Environmental Concern [15A NCAC 07H .0208(a)(2)(A)].** 15A NCAC 07H .0208(a)(2)(A) states that: "The location, design, and need for development, as well as the construction activities involved shall be consistent with the management objective of the Estuarine and Ocean System AEC (Rule .0203 of this subchapter) and shall be sited and designed to avoid significant adverse impacts upon the productivity and biological integrity of coastal wetlands, shellfish beds, submerged aquatic vegetation as defined by the Marine Fisheries Commission, and spawning and nursery areas."

The Bridge on New Location alternative has been identified to impact approximately 11.23 acres of submerged aquatic vegetation (SAV) habitat. DCM looks forward to additional discussions with the NEPA/404 project team regarding additional avoidance and minimization of impacts to SAV. If the Bridge on New Location alternative is selected, then mitigation options for the SAV impacts should be included in future NEPA/404 project team discussions.

The Bridge within Existing NC 12 Easement alternative has been identified to impact approximately 11 acres of intertidal surf zone by the 2060 predicted shoreline. A bridge in the surf zone may negatively affect water quality, flow, sediment grain size, and topography. In addition to these impacts, long term maintenance will be needed while the bridge is in the surf zone. Although the NCDDOT has committed to an April 1 to July 15 moratorium for maintenance, there is some concern that this moratorium does not extend long enough to minimize impacts to fisheries resources. Generally in this location the moratorium extends from April 1 to July 31 to minimize turbidity when late summer and fall spawning larvae may be present (red drum, speckled trout, and silver perch). This longer moratorium may be requested depending on the maintenance activities required. Although these impacts may not immediately be present at the time of construction, they may be present over the lifetime of the bridge and should therefore be included in NEPA/404 project team discussions. DCM would welcome additional discussions with the NEPA/404 project team on this issue.

- **Imminently Threatened Structures, 15A NCAC 07H .0306(k) and Temporary Erosion Control Structures, 15A NCAC 07H .0308(a)(2)(B).** 15A NCAC 07H .0306(k) states that: "Permits shall include the condition that any structure shall be relocated or dismantled when it becomes imminently threatened by changes in shoreline configuration as defined in 15A NCAC 07H.0308(a)(2)(B). Any such structure shall be relocated or dismantled within two years of the time when it becomes imminently threatened, and in any case upon its collapse or subsidence. However, if natural shoreline recovery or beach fill takes place within two years of the time the structure becomes imminently threatened, so that the structure is no longer imminently threatened, then it need not be relocated or dismantled at that time. This permit condition shall not affect the permit holder's right to seek authorization of temporary protective measures allowed under 15A NCAC 07H.0308(a)(2)." This requirement could be problematic for the frontage roads that are part of the proposed Bridge within Existing NC 12 Easement alternative.

If NCDOT proceeds with an alternative that is determined to be inconsistent with the North Carolina Administrative Code, then DCM will have to deny a CAMA permit application for the alternative for procedural reasons. In that situation, NCDOT would have the option of petitioning the CRC for a variance to undertake a project that is prohibited by the North Carolina Administrative Code. A petition for a variance recognizes the legal restrictions as valid, but requests an exception to the restrictions because of hardships resulting from unusual conditions. A final permit decision must be made before a petition for a variance can be submitted. As already stated, it is important to note that the CRC does not have the authority to issue a variance for compliance with a statute. DCM will work closely with the NEPA/404 project team to ensure that whatever alternative is selected as the LEDPA complies with CAMA and the North Carolina Administrative Code to the maximum extent practicable.

As stated on the first page of these comments, DCM understands that the transportation link that the Herbert C. Bonner Bridge and the connecting NC Highway 12 provide between Rodanthe on Hatteras Island and Bodie Island is a crucial component in the safety of the residents and visitors of Hatteras Island and Ocracoke Island, and the economic vitality of the Outer Banks. DCM is ready to continue to assist NCDOT in any way within our authority to finalize and implement a permanent solution to this complicated and important transportation need.

In that regard, DCM looks forward to our continued involvement with this project. Please contact me at (919) 707-9149 or via e-mail at cathy.brittingham@ncdenr.gov if you have any questions or concerns, or require additional information. Thank you for your consideration of the North Carolina Coastal Management Program.

Sincerely,



Cathy Brittingham
Transportation Projects Coordinator

CC: Doug Huggett, DCM

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North Carolina Department of Environment and Natural Resources

Division of Water Resources
Water Quality Programs
Thomas A. Rabeur
Director

Pat McCrory
Governor

John E. Sivartha, III
Secretary

January 15, 2014

MEMORANDUM

To: Lyn Hardison, Environmental Coordinator, Office of Legislative and Intergovernmental Affairs

Through: Amy Chapman, Transportation Permitting Unit Supervisor *AMC*

From: David Wainwright, Division of Water Resources, Central Office *DW*

Subject: Comments on the Environmental Assessment related to proposed NC 12 Rodanthe Breach Long-Term Improvements, Bonner Bridge Replacement Project Phase IIb, Dare County, Federal Aid Project No. BRN11F-0012(56), TIP B-2500B
State Clearinghouse Project No. 14-0268.

This office has reviewed the referenced document dated December 2013. The NC Division of Water Resources (NCDWR) is responsible for the issuance of the Section 401 Water Quality Certification for activities that impact Waters of the U.S., including wetlands. It is our understanding that the project as presented will result in impacts to jurisdictional wetlands, streams, and other surface waters. The NCDWR offers the following comments based on review of the aforementioned document.

Project Specific Comments:

1. This project is being planned as part of the 404/NEPA Merger Process. As a participating team member, the NCDWR will continue to work with the team.
2. It is stated in Section 3.3 that the preferred alternative is to build a bridge within the existing NC 12 easement. This alternative would place the structure such that it would be located within the surf zone in the not-to-distant future. The NCDWR has expressed concerns about this alternative and the effects it would have on recreation, wildlife, and the structure itself in the past. Concerns expressed in the past by the NCDWR regarding this alternative are still valid today.
3. In looking at Table 8 (Comparison of Key Impacts of the Phase IIb Alternatives), it appears that the impacts from the bridge on new location are generally less than those of the existing easement, even though some impacts may be of a different type.

Transportation and Permitting Unit
1638 Mail Service Center, Raleigh, North Carolina 27699-1638
Location: 512 N. Salisbury St., Raleigh, North Carolina 27604
Phone: 919-827-6700 FAX: 919-733-1291
Internet: www.ncdenr.gov

An Equal Opportunity / Affirmative Action Employer



Department of Environment and Natural Resources
Project Review Form

Project Number: 14-0268 County: Dare Date Received: 12/30/2013

Due Date: 1/13/2014

Project Description: Environmental Assessment - Proposal to replace the Herbert C. Bonner Bridge - Phase IIB Rodanthe Breach Long-Term Improvements TIP No. B-2500B

1) The Table 8 comparisons of recreational impacts don't appear to be stated equally. The impacts for the new location alternative state that there will be impacts primarily to wind surfers and kite boarders, the existing easement alternative simply states "beach and offshore recreation on the Atlantic Ocean ultimately affected by bridge presence." As is discussed in other parts of the document, recreational losses associated with the existing easement alternative are rather extensive. These potentially include the loss of a top national surfing spot, ocean kayaking, fishing, swimming, kite boarding, hiking, and wind surfing. Although not reflected in Table 8, the recreational opportunities with a bridge in the current easement would be significantly greater than that of a bridge on new location.

2) It appears that the end of the bridge and service roads for the existing easement alternative in Rodanthe are seaward of the predicted 2060 shoreline erosion area. If this is the case, it is unclear how well these areas be protected in the future from erosion. The protection of the end of the bridge and service roads is critical to impacts of the project and need to be discussed. If these areas are vulnerable to future erosion and washout, would additional sand replenishment be required as these areas become vulnerable or is there another way to protect them?

General Comments:

6. After the selection of the preferred alternative and prior to an issuance of the 401 Water Quality Certification, the NCDOT is respectfully reminded that they will need to demonstrate the avoidance and minimization of impacts to wetlands (and streams) to the maximum extent practical. In accordance with the Environmental Management Commission's Rules (15A NCAC 2H.0506(f)), mitigation will be required for impacts of greater than 1 acre to wetlands. In the event that mitigation is required, the mitigation plan shall be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as wetland mitigation.

7. In accordance with the Environmental Management Commission's Rules (15A NCAC 2H.0506(h)), mitigation will be required for impacts of greater than 150 linear feet to any single stream. In the event that mitigation is required, the mitigation plan shall be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as stream mitigation.

8. Future documentation, including the 401 Water Quality Certification Application, should continue to include an itemized listing of the proposed wetland and stream impacts with corresponding mapping.

The NCDWR appreciates the opportunity to provide comments on your project. Should you have any questions or require any additional information, please contact David Wainwright at (919) 707-8787 or David.wainwright@ncdenr.gov.

- Tracy Wheeler, US Army Corps of Engineers, Washington Field Office (electronic copy only)
- Clarence Colanin, Federal Highway Administration (electronic copy only)
- Chris Militzer, Environmental Protection Agency (electronic copy only)
- Gary Jordan, US Fish and Wildlife Service (electronic copy only)
- Travis Wilson, NC Wildlife Resources Commission (electronic copy only)
- Cathy Brittingham, Division of Coastal Management (electronic copy only)
- Gary Ward, NCDWR Washington Regional Office (electronic copy only)
- File Copy

This Project is being reviewed as indicated below:

Regional Office	Regional Office Area	In-House Review
<input type="checkbox"/> Asheville	<input checked="" type="checkbox"/> Air Quality 01/03/14	<input type="checkbox"/> Air Quality
<input type="checkbox"/> Fayetteville	<input checked="" type="checkbox"/> DWR-Surface Waters 1/1/14	<input checked="" type="checkbox"/> Parks & Recreation
<input type="checkbox"/> Mooresville	<input checked="" type="checkbox"/> DWR-Aquatic 1/3/14	<input type="checkbox"/> Waste Mgmt
<input type="checkbox"/> Raleigh	<input checked="" type="checkbox"/> DEM-LE (LO & SW) 1/2/14	<input type="checkbox"/> Water Resources Mgmt
<input checked="" type="checkbox"/> Washington	<input checked="" type="checkbox"/> DWR-LE (LO & SW) 1/2/14	<input checked="" type="checkbox"/> DWR-Public Water
<input type="checkbox"/> Wilmington	<input type="checkbox"/> LIST	<input type="checkbox"/> DWR-Water Quality Program
<input type="checkbox"/> Winston-Salem	<input checked="" type="checkbox"/> DWR-Public Water 01/03/2014	<input type="checkbox"/> DWR-Transportation Unit
		<input checked="" type="checkbox"/> D. Wainwright

Manager Sign-Off/Region: _____ Date: _____ In-House Reviewer/Agency: _____

Response (check all applicable)

- No objection to project as proposed.
- Insufficient information to complete review.
- No Comment
- Other (specify or attach comments)

If you have any questions, please contact:
Lyn Hardison at lhardison@ncdenr.gov or (252) 948-3842
943 Washington Square Mail Washington NC 27889
Courier No. 16-04-01

Department of Environment and Natural Resources

Reviewing Office: Winston-Salem

INTERGOVERNMENTAL REVIEW - PROJECT COMMENTS

Project Number: 14-0328 Due Date: 1-13-14

After review of this project, it has been determined that the ESR permit(s) and/or approvals indicated may need to be obtained in order for this project to comply with North Carolina Law. Questions regarding these permits should be addressed to the Regional Office indicated on the reverse of the form. All applicants, information and guidelines relative to these plans and permits are available from the same Regional Office.

PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (calendar time limit)
<input type="checkbox"/> Permit to construct & operate wastewater treatment facilities, sewer system extensions & sewer systems not discharging into state surface waters	Application 90 days before begin construction or award of construction contracts. On-site inspection. Post-application technical conference usual.	30 days (90 days)
<input type="checkbox"/> NPDES - permit to discharge into surface water and/or permit to operate and construct wastewater facilities discharging into state surface waters	Application 180 days before begin activity. On-site inspection. Pre-application conference additionally. On-site permit to construct wastewater treatment facility and NPDES. Reply time: 30 days after receipt of plans or issue of NPDES permit (whichever is later).	90-120 days (N/A)
<input type="checkbox"/> Water Use Permit	Pre-application technical conference usually necessary.	30 days (N/A)
<input type="checkbox"/> Well Construction Permit	Complete application must be received and permit issued prior to the installation of a well.	7 days (15 days)
<input type="checkbox"/> Dredge and Fill Permit	Application copy must be acted on each adjacent riparian property owner. On-site inspection. Pre-application conference usual. Filing may require easement to FIF from N.C. Department of Administration and Federal Lands and Fill Permit.	55 days (90 days)
<input type="checkbox"/> Permit to construct & operate Air Pollution Abatement facilities and/or Emission Sources as per 15 A NCAC 210.0100 thru 210.0300	Application must be submitted and permit received prior to construction and operation of the source. If a permit is required in an area without local zoning, then there are additional requirements and timelines (20.0113).	90 days
<input type="checkbox"/> Permit to construct & operate Transmission Facility as per 15 A NCAC 210.0600, 210.0601	Application must be submitted at least 90 days prior to construction or modification of the source.	90 days
<input checked="" type="checkbox"/> Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D 1900	N/A	60 days (90 days)
<input type="checkbox"/> Demolition or relocations of structures containing asbestos material must be in compliance with 15 A NCAC 201.110 (a)(1) which requires notification and removal prior to demolition. Contact Asbestos Control Group 919-707-5930.		
<input type="checkbox"/> Complex Source Permit required under 15 A NCAC 2D 0800		
<input type="checkbox"/> The Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An erosion & sedimentation control plan will be required if one or more acres to be disturbed. Plan filed with proper Regional Office (Land Quality Section) at least 30 days before beginning activity. A fee of \$65 for the first acre or any part of an acre. An express review option is available with additional fees.		20 days (30 days)
<input checked="" type="checkbox"/> Sedimentation and erosion control must be addressed in accordance with NCDOT's approved program. Particular attention should be given to design and installation of appropriate perimeter sediment trapping devices as well as stable stormwater conveyance and outlets.		(30 days)
<input type="checkbox"/> Mining Permit	On-site inspection usual. Surety bond filed with ESR. Bond amount varies with type mine and number of acres of affected land. Any are mined greater than one acre must be permitted. The appropriate bond must be received before file permit can be issued.	30 days (60 days)
<input type="checkbox"/> North Carolina Burning Permit	On-site inspection by N.C. Division Forest Resources if permit exceeds 4 days.	1 day (N/A)
<input type="checkbox"/> Special Ground Clearance Barring Permit - 22 counties in coastal N.C. with organic soils	On-site inspection by N.C. Division Forest Resources required. If more than five acres of ground clearing activities are involved. Inspections should be requested at least ten days before actual permit is planned.	1 day (N/A)
<input type="checkbox"/> Oil Refining Facilities	N/A	90-120 days (N/A)
<input type="checkbox"/> Dam Safety Permits	If permit requires application 60 days before begin construction. Applicant must file N.C. modified computer file, prepare plans, inspect construction, certify construction is according to ESR approved plans. May also require permit under mosquito control program. And a 404 permit from Corps of Engineers. An inspection of site is necessary to verify Hazard Classification. A minimum fee of \$200.00 must accompany the application. An additional processing fee based on a percentage of the total project cost will be required upon completion.	30 days (60 days)

Inter-governmental form September 2013

17 1-13-14

PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (calendar time limit)
<input type="checkbox"/> Permit to drill exploratory oil or gas well	File surety bond of \$5,000 with ESR, running to State of NC conditional that well be operated by drill operator shall, prior abandonment, be plugged according to ESR rules and regulations.	10 days (N/A)
<input type="checkbox"/> Geophysical Exploration Permit	Application filed with ESR at least 10 days prior to issue of permit. Application by letter. No mandated application form.	10 days (N/A)
<input type="checkbox"/> State Lakes Construction Permit	Application fee is charged based on structure size. Must include descriptions & drawings of structure & proof of ownership of riparian property.	15-20 days (N/A)
<input checked="" type="checkbox"/> 401 Water Quality Certification	N/A	60 days (110 days)
<input type="checkbox"/> CAMA Permit for MAJOR development	\$250.00 fee must accompany application	55 days (150 days)
<input type="checkbox"/> CAMA Permit for MINOR development	\$50.00 fee must accompany application	22 days (25 days)
<input type="checkbox"/> Several geologic monuments are located in or near the project area. If any monument needs to be moved or destroyed, please notify N.C. Geologic Survey, Box 27687 Raleigh, NC 27611		
<input checked="" type="checkbox"/> Abandonment of any wells, if required must be in accordance with Title 15A, Subchapter 2C 0100		
<input type="checkbox"/> Notification of the proper regional office is requested if "unplanned" underground storage tanks (USTS) are discovered during any excavation operation.		
<input checked="" type="checkbox"/> Compliance with 15A NCAC 2H 1000 (Channel Stormwater Rules) is required		15 days (N/A)
<input type="checkbox"/> Tar Patches or Neque Riparian Buffer Rules required.		
<input type="checkbox"/> Plans and specifications for the construction, expansion, or alteration of a public water system must be approved by the Division of Water Resources/Public Water Supply Section prior to the award of a contract or the initiation of construction as per 15A NCAC 18C 0300 et. seq. Plans and specifications should be submitted to 1634 Mail Service Center, Raleigh, North Carolina 27699-1634. All public water supply systems must comply with state and federal drinking water monitoring requirements. For more information, contact the Public Water Supply Section, (919) 707-9100.		30 days
<input checked="" type="checkbox"/> If existing water lines will be relocated during the construction, plans for the water line relocation must be submitted to the Division of Water Resources/Public Water Supply Section at 1634 Mail Service Center, Raleigh, North Carolina 27699-1634. For more information, contact the Public Water Supply Section, (919) 707-9100		30 days

* Other comments (attach additional pages as necessary, being certain to cite comment numbers)

REGIONAL OFFICES

Questions regarding these permits should be addressed to the Regional Office marked below.

- Asheville Regional Office**
2090 US Highway 70
Swannanoa, NC 28778
(828) 296-4500
- Mooreville Regional Office**
610 East Center Avenue, Suite 301
Mooreville, NC 28115
(704) 663-1699
- Winston-Salem Regional Office**
127 Cardinal Drive Extension
Wilmington, NC 28405
(910) 796-7215
- Raleigh Regional Office**
3800 Barrett Drive, Suite 101
Raleigh, NC 27609
(919) 791-4200
- Washington Regional Office**
943 Washington Square Mall
Washington, NC 27889
(252) 946-6481
- Fayetteville Regional Office**
225 North Green Street, Suite 714
Fayetteville, NC 28501-5043
(910) 433-3300
- Winston-Salem Regional Office**
585 Wroughton Street
Winston-Salem, NC 27107
(336) 711-5000



North Carolina Wildlife Resources Commission

Gordon Myers, Executive Director

MEMORANDUM

TO: Lyn Hardison, Environmental Assistance Coordinator
Division of Environmental Assistance and Outreach, DENR

FROM: Travis Wilson, Highway Project Coordinator
Habitat Conservation Program

DATE: January 10, 2014

SUBJECT: North Carolina Department of Transportation (NCDOT) Environmental Assessment (EA) for the proposed Herbert C. Bonner Bridge Phase IIb, Dare County, North Carolina. TIP No. B-2500 SCH Project No. 14-0268.

Staff biologists with the N. C. Wildlife Resources Commission (WRC) have reviewed the subject EA and are familiar with habitat values in the project area. The purpose of this review was to assess project impacts to fish and wildlife resources. Our comments are provided in accordance with certain provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

NCDOT is planning Phase IIb of the Parallel Bridge Corridor within the NC 12 Transportation Management Plan Alternative, the selected alternative for the replacement of the Herbert C. Bonner Bridge. Phase IIb addresses improvements to NC 12 from the southern portion of Pea Island National Wildlife Refuge to SR 1492 in Rodanthe. WRC is a participating agency in the coordination and planning of this project and various comments have been provided in conjunction with the NEPA/404 Merger process. However, the following comments identify specific issues in the document:

- Under Project Commitments; Commitment 11, Night-time Construction states: "NCDOT would work with NCDENR-DMF, NMFS, NPS, and USFWS to determine other areas near project construction where night lighting would need to be avoided or limited". Please add NCWRC to this list of agencies, NCWRC staff has been involved in prior night lighting coordination with this project.

Mailing Address: Division of Inland Fisheries • 1721 Mail Service Center • Raleigh, NC 27699-1721
Telephone: (919) 707-0220 • **Fax:** (919) 707-0028

Two alternatives were carried forward for detailed study. Both would construct NC 12 on a bridge with one alternative located within the existing right of way and the other on new location. At this time we do not have any specific comments related to the selection of the preferred alternative, however as the project progresses through the NEPA/404 Merger process we will continue to assess potential impacts associated with the selection and construction of the preferred alternative. Thank you for the opportunity to comment on this EA. If we can be of any further assistance please call me at (919) 707-0370.

Ec:

- Gary Jordan, USFWS
- Mike Bryant, USFWS-PINWR
- Fritz Rohde, NMFS
- David Wainwright, DWQ
- Bill Biddlecome, USACE
- Chris Militscher, USEPA
- Doug Huggett, DCM
- Thayer Broili, NPS
- Clarence Coleman, FHWA
- Renee Gledhill-Earley, SHPO



**NC 12 – Rodanthe Breach Long-Term Improvements
(Bonner Bridge Replacement Project Phase IIb)**

TIP No. B-2500B

Dare County

January 21, 2014

The health, safety, and welfare of our residents and visitors is the highest priority of the Dare County Board of Commissioners. First and foremost, we seek long-term improvements for NC Highway 12 that will enhance public safety.

It is imperative that there be safe and reliable transportation access to and from Hatteras Island. Without it, the simplest of activities, such as going to a doctors appointment becomes an arduous daylong endeavor with an uncertain outcome.

When people must leave Hatteras Island for a needed journey, they deserve the peace of mind of knowing that Highway 12 will be viable and operating at the end of the day and able to reunite them with their family waiting at home.

Furthermore, our economy, culture, and the social fabric of our community are dependent on reliable transportation to and from Hatteras Island. Whether this is for medical needs or providing educational opportunities for our children, the public deserves assurance that safe and predictable transportation is always available.

NCDOT has presented two options for Phase IIb of the Bonner Bridge Replacement Project. The preferred alternative selected by NCDOT is to build a bridge approximately 2.3-mile-long, within the existing NC 12 easement. The other alternative would be a 2.6-mile-long bridge on a new location mostly over the Pamlico Sound.

The decision to support one or the other alternative is based on the County's long history of bridge and road construction efforts since 1993, and more specifically since 2001. There are two main points that have influenced Dare County's decision process –

Page 2

1. In regards to the NCDOT preferred alternative to utilize the existing NC 12 easement, we understand the concern of effected property owners who will have a bridge structure altering the view between their home and the ocean. We also appreciate that there may be property owners who will lose their homes and businesses because of the sweeping return access road at the south terminus of the bridge.
2. The other alternative would provide a bridge on a new location that would take less property and preserve a very important business that has provided a valuable service to the community. While this alternative would have a lower profile bridge and be less obstructive of the view of the Pamlico Sound, it would greatly alter water sports in the area. Building this alternative through 2.6 miles of fish nurseries in the some of the most pristine waters on the east coast, if not the nation, will require time consuming environmental assessments and impact statements, and will be subject to the rigors of NEPA review and an uncertain permitting process. This alternative has yet to be vetted by the environmental special interest groups.

Based on these facts, the Dare County Board of Commissioners supports the efforts of the North Carolina Department of Transportation in their Preferred Alternative of the bridge within the existing NC 12 easement. We have arrived at this conclusion based on the following –

- We have a strong belief that NCDOT would never be able to secure a permit to build in and over the waters of the Pamlico Sound.
- Above all other reasons, the safety, health, and welfare of the residents and visitors to Hatteras Island must be our first and overriding concern. As a County Government, we are committed to providing essential emergency services 24 hours a day, 365 days a year. History has proven that in the aftermath of destructive and devastating storms, the delivery of all County Services demands a reliable, dependable, and permanent bridge and NC Highway 12.
- The construction must start now, and NCDOT's preferred alternative gives the County the best opportunity to provide the essentials of safety, health, and welfare for its people.

In endorsing NCDOT's preferred alternative, the Dare County Board of Commissioners offers the following suggestions for NCDOT to take under advisement –

1. Consider beach nourishment as a front line of defense for the bridge to be built in the existing NC 12 easement. We encourage NCDOT to safeguard this infrastructure by continuing a maintenance level of beach nourishment after the new bridge is built.

- 2. Consider bringing the new bridge down to grade further north in the Village of Rodanthe. This could preserve the Island Convenience business, which is not only one family's business; it is a vital commercial center for the Rodanthe-Waves-Salvo Villages and serves as a nerve center for the community. This valuable business provides 30 plus fulltime year-round jobs and supplies essential goods and services to area residents and visitors.

Additional Considerations –

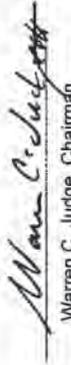
In addition to the reasons outlined above, Dare County believes there are compelling public safety and other considerations for endorsing NCDOT's preferred alternative as the practical solution that will provide timely stabilization of NC Highway 12 –

- As the transportation lifeline for Hatteras Island, NC Highway 12 has a direct bearing on the public health, safety, and welfare of over 4,000 residents and 50,000 peak season visitors per day. It is the corridor through which Hatteras Island residents and visitors receive their electrical service and essential commodities such as food, fuel, mail, and medication.
- Throughout the year, on an on-going basis, NC Highway 12 is the lifeline that connects its residents and visitors to hospitals and specialized medical care. Especially during times of adverse weather when medical helicopters cannot fly, Highway 12 is the means by which Dare County ambulances transport critically ill and injured patients to trauma centers and advanced cardiac care facilities. Without a stable and reliable highway, countless lives could be lost due to lack of transportation access to advanced health care.
- Highway 12 serves a vital role during emergency hurricane evacuations. It is the road that residents and visitors on both Hatteras and Ocracoke Islands depend upon to escape from harm's way. It is an official evacuation route that is needed to provide a path to safety for thousands of people during times of crisis.
- Following a hurricane, NC Highway 12 serves as the only corridor for getting medical supplies, food, fuel, cleaning and reconstruction materials to the Villages of Hatteras Island. It also used by local, state, and federal disaster assessment teams, insurance adjusters, and recovery personnel.
- Stabilizing NC Highway 12 will contribute in a direct way to the economic health and wellbeing of Dare County and the State of North Carolina. Hatteras Island accounts for approximately 25% of Dare County's economy and generates millions each year in local, state, and federal taxes. Without a reliable highway, the economy of both Dare County and the State of North Carolina will suffer adverse and irreparable harm.

- As a tourism destination, Hatteras Island depends on efficient and reliable transportation. In addition to providing access for vacationers, NC Highway 12 is the route that brings workforce support for Hatteras Island's businesses and schools. Without a stable and reliable highway, Hatteras Island would literally be choked off from the support and infrastructure it needs to survive.
- In addition to its public safety and economic benefits, NC Highway 12 plays an important part in facilitating the education of Hatteras Island's young people. The highway opens the door to vast educational opportunities for students to participate in field trips beyond the boundaries of Hatteras Island. It also provides a means for college students to gain access to the classrooms of the College of the Albemarle and other higher education facilities that are not available on Hatteras Island.

CONCLUSION

For the reasons outlined above, Dare County urges NCDOT to proceed as expeditiously as possible with their preferred alternative to build a bridge within the existing NC 12 easement. Dare County believes this alternative best provides for the public safety, health, and welfare.



Warren C. Judge, Chairman
Dare County Board of Commissioners

January 17, 2014

Drew Joyner
North Carolina Department of Transportation
Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598

Sent via e-mail: PublicInvolvement2@ncdot.gov

Re: Public comments on Phase IIb of the Herbert C. Bonner Bridge replacement project.

To Whom it May Concern:

The Citizens Action Committee to Replace the Herbert C. Bonner Bridge (www.replacethebridgetenow.com), an advisory committee to the Dare County Board of Commissioners, appreciates the opportunity to comment on the North Carolina Department of Transportation's (NCDOT) options for Phase IIb of the Herbert C. Bonner Bridge replacement project. The purpose of Phase IIb is to provide a long term transportation solution at the S-curves in Rodanthe. Not only is our committee charged with the responsibility to advocate for replacement of Bonner Bridge a critical lifeline to Hatteras Island, but we also act to ensure that the entire North Carolina Highway 12 corridor that services Hatteras and Ocracoke Islands remains a sustainable and viable transportation link.

North Carolina Highway 12 plays an integral part in state and local plans for providing for the safety and security of the citizens and visitors of Hatteras Island. The highway is crucial for hurricane and emergency evacuations. It provides the sole means of evacuation for up to 50,000 residents and visitors. If the highway could not be utilized for an evacuation, ferries would not be adequate to safely evacuate Hatteras Island. Even with good weather, ferries could only evacuate a small fraction of the Island's population, about 1,000 vehicles per day.

Additionally, as the sole means of access to Hatteras Island, the highway also serves an essential role in providing emergency access for EMS, Fire Service and Law Enforcement vehicles. The time required to transport patients requiring medical assistance would be increased and the ability of police and fire departments to receive timely assistance from other departments would be reduced. Without the road, the North Carolina Highway Patrol, the Dare County Sheriff's Office, Dare County EMS and other public service agencies would face serious challenges maintaining adequate staff readiness on a continuing basis. Many public safety employees rely upon the highway to report for duty. Without it, personnel levels could become compromised and further threaten public safety.

For the reasons listed above, the Citizens Action Committee to Replace Herbert C. Bonner Bridge supports whichever alternative NCDOT, in its sole determination, determines to be the most stable and reliable while also meeting our greatest need of having the project completed as quickly as possible. In recognition that much of the area identified is currently under an official Declaration of Emergency issued by the Governor due to constant overwash issues, NCDOT's solution should provide for the most probable solution that would expedite reestablishing a reasonable level of stability and reliability to NC 12 at this location.

Whichever option is chosen, we would ask that NCDOT take particular care in addressing the following issues:

Both of the proposed bridge alternatives will visually and physically impact the northern neighborhoods in the Village of Rodanthe. Please give consideration in care in the design and construction of the chosen alternative so that it is as aesthetically compatible as possible to its surroundings.

The tri-village area of Rodanthe, Waves and Salvo has only one year round market for groceries and other staples, Island Convenience. It is located within the project boundaries. All care should be taken in the design and construction of the chosen alternative to preserve this business if possible.

We would ask that the ultimate project be designed such that traffic flow during the construction phase is not restricted in any way during the prime visitor season for Cape Hatteras National Seashore Recreational Area.

We strongly support the emergency nourishment plan prepared by NCDOT for interim protection of NC Hwy 12 at the southern end of Pea Island National Wildlife Refuge. We agree this solution best meets the immediate goal of providing a 3-year short term level of protection against ocean storm events within the S-Curves/Mirco Beach area until the long-term Phase IIb solution can be implemented for NC Highway 12 in this location. We urge NCDOT and USACE to do whatever it takes to begin construction of this critical project immediately.

Finally, in recognition of the fact that the project area for Phase IIb encompasses portions of the Pea Island National Wildlife Refuge, a diverse and abundant ecological area comprised of barrier island upland and wetland habitats, we ask that the alternative chosen be the alternative that is deemed to be the least environmentally damaging practicable alternative.

We urge NCDOT to move forward as quickly as the law allows and publish a Record of Decision that will allow this critical project to be built.

Regards,



Beth Milgrett

Chair
Citizens Action Committee to Replace Herbert C. Bonner Bridge
www.replacethebridgetenow.com

January 24, 2014

Drew Joyner
North Carolina Department of Transportation
Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598

Hatteras Island Property Management Group
Hatteras Island, North Carolina

Sent via e-mail: PublicInvolvement2@ncdot.gov

Re: Public comments on Phase IIb of the Herbert C. Bonner Bridge replacement project.

To Whom It May Concern:

The Hatteras Island Property Management Group appreciates the opportunity to comment on NCDOT's alternatives for Phase IIb or the Herbert C. Bonner bridge replacement project.

The vacation rental home industry is the primary source of lodging for visitors to Hatteras Island. As a group, we estimate that over 2,500 individual properties are under the care of professional property management companies with an average number of 4 bedrooms each. The local businesses on Hatteras Island depend on the guests who stay in our homes to survive. When we are at full occupancy, the businesses of the island thrive. Our guests support the local grocery stores, restaurants, galleries, boutiques, recreation providers, gas stations, and tackle shops. Without guests in our properties, the local retailers and service providers are directly and detrimentally affected.

In addition to providing the lodging for the visitors, the vacation rental home industry is also the largest employment sector on Hatteras Island. The even cash flow afforded by the shoulder seasons allows us to provide hundreds of benefited, full-time, year-round jobs in a seasonal business environment. In addition to those year-round positions, we also provide seasonal employment to thousands of workers from all across Eastern North Carolina and supply work to an army of small business owners on the island and the Outer Banks to keep our properties well-serviced and maintained. This employment trickles down to nearly every aspect of business on the island.

Our local economy relies heavily on the visitors to the island and having reliable access to Hatteras Island is key to its economy. During 2011 the Hatteras Island tourism economy generated a base of \$204 million in travel expenditures. This activity contributed accounted for 2,618 jobs (the Island population is around 4,300 residents). The tourism industry generated a total payroll of \$41 million and Hatteras Island's tourism economy contributed \$10.3 million in North Carolina state taxes and \$9.4 million in local taxes.

In addition to NC Highway 12 being key to the economic welfare of the community, North Carolina Highway 12 plays an integral part in state and local plans for providing for the safety and security of the citizens and visitors of Hatteras Island. The highway is crucial for hurricane and emergency evacuations. It provides the sole means of evacuation for up to 50,000 residents and visitors. If the highway could not be utilized for an evacuation, ferries would not be adequate to safely evacuate Hatteras Island. Even with good weather, ferries could only evacuate a small fraction of the island's population, about 1,000 vehicles per day.

For the reasons listed above, Hatteras Island Property Management Group, supports whichever alternative NCDOT, in its sole determination, determines to be the most stable and reliable while also meeting our greatest need of having the project completed as quickly as possible. In recognition that much of the area identified is currently under an official Declaration of Emergency issued by the Governor due to constant overwash issues, NCDOT's solution should provide for the most probable solution that would expedite reestablishing a reasonable level of stability and reliability to NC 12 at this location.

Whichever option is chosen, we would ask that NCDOT take particular care in addressing the following issues:

Both of the proposed bridge alternatives will visually and physically impact the northern neighborhoods in the village of Rodanthe. Please give consideration in care in the design and construction of the chosen alternative so that it is as esthetically compatible as possible to its surroundings.

The tri-village area of Rodanthe, Waves and Salvo has only one year round market for groceries and other staples, Island Convenience. It is located within the project boundaries. All care should be taken in the design and construction of the chosen alternative to preserve this business if possible.

We would ask that the ultimate project be designed such that traffic flow during the construction phase is not restricted in any way during the prime visitor season for Cape Hatteras National Seashore Recreational Area.

We strongly support the emergency nourishment plan prepared by NCDOT for interim protection of NC Hwy 12 at the southern end of Pea Island National Wildlife Refuge. We agree this solution best meets the immediate goal of providing a 3-year short term level of protection against ocean storm events within the S-Curves/Milko Beach area until the long-term Phase IIb solution can be implemented for NC Highway 12 in this location. We urge NCDOT and USACE to do whatever it takes to begin construction of this critical project immediately.

Finally, in recognition of the fact that the project area for Phase IIb encompasses portions of the Pea Island National Wildlife Refuge, a diverse and abundant ecological area comprised of barrier island upland and wetland habitats, we ask that the alternative chosen be the alternative that is deemed to be the least environmentally damaging practicable alternative.

We urge NCDOT to move forward as quickly as the law allows and publish a Record of Decision that will allow this critical project to be built.

Regards,

Hatteras Island Property Management Group
Sun Realty, Hatteras Realty, Outer Beaches Realty, Surf or Sound Realty, Colony Realty, Midget Realty

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January 24, 2014

VIA EMAIL AND U.S. MAIL.

Mr. Richard W. Hancock, P.E.
Project Development and Environmental Analysis Unit
N.C. Department of Transportation
1548 Mail Service Center
Raleigh, NC 27699-1548
rwhancock@dot.state.nc.us

RE: Bonner Bridge Replacement Project Phase IIb Environmental Assessment
NCDOT STIP No. B-2500B

Dear Mr. Hancock:

Thank you for the opportunity to comment on the Environmental Assessment ("EA") prepared by the North Carolina Department of Transportation ("NCDOT") and Federal Highway Administration ("FHWA") for the "Phase IIb" portion of the Bonner Bridge replacement project, TIP Project Number B-2500 (the "Project"). These comments are submitted on behalf of Defenders of Wildlife, the National Wildlife Refuge Association, and the Southern Environmental Law Center.

NCDOT and FHWA's preferred alternative is to construct a 2.5-mile bridge in the existing NC-12 easement in one of the highest-erosion areas on the Outer Banks, where it will extend into a developed area and a national wildlife refuge and will soon be located on the beach, in the surf zone, and in the Atlantic Ocean. Because of its entirely foreseeable and devastating effects on tourism, private property, federally protected wildlife habitat, and the natural environment, we oppose this plan. We also note that the majority of the Merger Team agencies did not concur with NCDOT and FHWA's plans for "Phase II" of the Project.

Instead of pursuing these untested and unpopular ocean bridges, NCDOT and FHWA should route the transportation corridor away from these vulnerable high-erosion areas of the Refuge. NCDOT and FHWA could address the purpose and need of the entire project with a single Pamlico Sound bridge to bypass the entire Pea Island National Wildlife Refuge (the "Refuge"), which we have long supported. In the alternative, NCDOT and FHWA could address both "Phase II" "hot spot" areas by constructing the FWS-proposed seven-mile bridge alternative now, and could later construct the remainder of a Pamlico Sound corridor that could tie into and connect that seven-mile bridge and the "Phase I" replacement bridge over Oregon Inlet.

Mr. Richard W. Hancock, P.E.
January 24, 2014
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NCDOT and FHWA's analysis of their proposed "Phase IIa" in-easement bridge raised many of the same concerns and issues as does the current EA for "Phase IIb." Accordingly, we incorporate by reference our March 28, 2013 comments on the "Phase IIa" EA to supplement the comments we offer below. These "Phase IIa" comments are attached as Attachment 1. In addition, as explained below, the "Phase IIb" EA: (1) violates NEPA by illegally segmenting the Bonner Bridge replacement project, (2) fails to satisfy NEPA because a supplemental environmental impact statement ("SEIS") is necessary to address new information and new circumstances, (3) fails to satisfy Section 4(f) of the Department of Transportation Act of 1966 because a revised 4(f) analysis is required to address the specific "Phase IIb" alternatives and their use of the Refuge.

I. The EA Illegally Segments the Project in Violation of NEPA.

As we have explained in numerous previous comments on various phases of the Project, NCDOT and FHWA have illegally segmented the environmental evaluation of the Project by disclosing and evaluating each of its components separately, in isolation. The Record of Decision ("ROD") for the Project disclosed only the "Phase I" bridge over Oregon Inlet; the "Phase IIa" EA and ROD address only the proposed permanent bridge over the new Pea Island inlet; and the current EA addresses only the proposed "Phase IIb" permanent bridge over the "S-Curves" "hot spot" area of high erosion near Rodanthe, as discussed in more detail in Part II below. A beach nourishment effort is also proceeding separately in the Rodanthe breach area in an attempt to buy time while NCDOT and FHWA decide on and construct a permanent solution in that area. As the current "Phase IIb" EA recognizes (p. 4-14), the beach nourishment is part of the implementation of the Project. Thus, its effects must be evaluated together with the other components, not piecemealed and considered in isolation in a separate EA. Additional components of the Project will only be disclosed, doubtless in a similar piecemeal fashion, after these four components are in place or under construction.

This procedure of piecemealed environmental assessments violates NEPA because it evades any comprehensive evaluation of the full Project's impacts and ensures that no fair comparison of the available alternatives will take place until there is already an irretrievable commitment to maintaining NC-12 through the Refuge to support the "Phase I" bridge, no matter how high the costs or how great the damage to the human environment that will result.

Segmenting the Project in this way is impermissible under any circumstances, but it is all the more egregious because four components of this single Project are now planned for concurrent funding and construction. They cannot fairly be characterized as distinct future projects or even phases of a project, separated by time or space. Despite the fact that these components all belong to a single Project and are proceeding and being implemented concurrently, they are being evaluated in separate environmental documents, none of which accounts for the combined, cumulative effects of the Project on the Refuge and human environment.

NEPA requires that all components of the Project be evaluated together before construction commences, not piecemealed into separate environmental documents that fail to account for the combined impacts of the Project. 40 C.F.R. § 1502.4(a); *Md. Conservation Council v. Gilchrist*, 808 F.2d 1039, 1042 (4th Cir. 1986) (“compliance with NEPA is required before any portion of the road is built”); *W. N.C. Alliance v. NCDOT*, 312 F. Supp. 2d 765, 773 (E.D.N.C. 2003) (NEPA evaluation must be complete “before acting”). In this case, NCDOT and FHWA claim that the previous evaluation in the Final Environmental Impact Statement (“FEIS”) of some, but not all, of the available options exempts them from the plain-language requirements of NEPA. But the changed conditions in the Refuge vividly illustrate that NCDOT and FHWA cannot rely on the 2008 FEIS, which was not only inadequate when it was issued over five years ago, but also now is significantly outdated in its analysis of the cost and funding of the available alternatives. The FEIS’s estimates of the environmental consequences of the alternatives, and of the pace and timing for the “later phases,” are likewise outdated.

In *Western N.C. Alliance*, the court rejected NCDOT’s contention that it was not required to consider “the cumulative impacts from the other connected projects because they were not fully funded or planned.” 312 F. Supp. 2d at 773. Applying that holding to the present case, whether the various “phases” of the Project are categorized properly as a single project, or as related actions with cumulative impacts, their full impacts still must be evaluated together. Because NCDOT and FHWA have failed to do so, as well as for the reasons given below, a supplemental EIS is required.

II. A Supplemental EIS Is Required.

An SEIS is required when significant new information or circumstances will affect the impacts of a NEPA project or the selection of an alternative. 40 C.F.R. § 1502.9(c); 23 C.F.R. § 771.130. Here, both new circumstances and new information, as well as significant impacts not adequately disclosed in the FEIS, mandate the preparation of an SEIS.

A. Impacts

The EA fails to address significant impacts on recreation and wildlife habitat resulting from the fact that the proposed “Bridge Within Existing NC 12 Easement Alternative” would soon be located in the Atlantic Ocean.

i. Economic Impacts Due to Loss of Recreation

The EA fails to evaluate or disclose the most significant economic impacts of the proposed in-easement bridge. NCDOT and FHWA admit in the EA that this alternative, which the agencies state that they prefer, will “eliminate[]” surfing at the world-renowned “S-Turns” surf break. EA at p. 4-22. For the same reasons, it will eliminate all water-based recreation in this area and greatly harm any beach-going along its 2.5-mile length. Yet neither the EA nor the 2008 FEIS it purports to supplement contains any economic analysis of these major impacts to recreation and the tourist economy of Hatteras Island. Instead, they refer only to the loss of

paved roadway access to the Refuge, which is a separate and distinct economic impact. Not only will the beach be more difficult to reach once the “Phase IIb” bridge is built, but even those people who manage to reach it on foot will not be able to surf, swim, or otherwise recreate safely around the bridge’s pilings.

In purporting to consider the loss of recreation caused by the ocean bridges, the EA and FEIS mistakenly assume that if a given activity could take place anywhere else on the Outer Banks, there will be no economic impact. This is wrong for several reasons. First, the EA itself (at pp. 4-22 to 4-23) recognizes that economic impact on *Dare County* is the most relevant issue. If visitors are driven away from Dare County’s beaches to the beaches of other counties and other islands by massive bridge pilings and decking over the beaches and in the ocean, plainly there will be an economic impact on Dare County. Moreover, the local economic impact to Rodanthe and the other communities of northern Hatteras Island is an important factor in the analysis. NCDOT and FHWA’s preferred plan appears likely to have a significant adverse impact on these communities’ local economies, yet the agencies do not even consider this possibility.

The assumption that surfers could simply move elsewhere on the Outer Banks is also wrong because it ignores the unique features that draw surfers and other visitors to the Pea Island National Wildlife Refuge.

The S-Curves “hot spot” is known to surfers as the “S-Turns,” and it is recognized nationally and worldwide as a prime surfing location on the East Coast. On an international “Surf Spot Atlas Made By Surfers For Surfers,” the entry for the S-Turns surf break area describes unique surfing features and natural beauty that make this area extremely popular: “the [O]uter [B]anks are the best surfing area on the [E]ast [C]oast and *this is the best spot on the [O]uter [B]anks, tuberides, natural [sic], pretty environment, probably the most powerful wave around. . . . extremely crowded in warm months . . .*” Will Whidbee, “S-Turns,” WannaSurf.com, http://www.wannasurf.com/spot/North_America/USA/South_East/North_Carolina/s_turns/ (emphasis added). Numerous other websites and publications similarly attest to the uniquely high quality of the S-Turns surf break and its popularity as a surfing destination.

NCDOT and FHWA state in the EA that they prefer the in-easement bridge alternative and that it will soon “eliminate[]” surfing at the S-Turns. According to the EA, the proposed bridge’s pilings in the ocean and the surf zone would not only pose the obvious collision hazard for surfers; they would also change the wave breaks, rendering the area actually unfit for surfing by destroying the features that draw so many surfers and other visitors to this area. Yet although the FEIS acknowledged an impact on surfing, it did not make any attempt to calculate the impact on the economy of Rodanthe and Hatteras Island generally if this key tourist attraction were to be eliminated.

Because the "human environment" that is the subject of NEPA includes "the relationship of people with that environment," the applicable regulations require that NCDOT and FHWA analyze socioeconomic impacts where they are interrelated with natural or physical environmental effects. 40 C.F.R. § 1508.14. Here, the sweeping statement that "[t]here are other locations . . . where one can surf" (EA at 4-23) completely ignores the unique economic and recreational significance of the S-Turns area and improperly avoids disclosing to the public the potentially major economic harm that will result from the agencies' preferred alternative of constructing bridges in the ocean.

And while the FEIS acknowledged that surfing would be eliminated, it failed to adequately analyze other unique economic and recreational harms that would result. In addition, the FEIS failed to disclose or evaluate the effect that the proposed bridge would have on all the other significant recreational activities in this area: swimming, beachcombing, sunbathing, fishing, birding, kite-boarding, ocean kayaking, etc. The FEIS states only that some of these activities "would be affected" when this bridge is in the surf and in the ocean, FEIS at 4-48, but it does not acknowledge that the effects of bridge pilings would, in practical terms, eliminate not just surfing, but swimming and many of the other activities listed above as well. It is beyond question that visitors would avoid the miles of beach underneath a highway and dominated by its massive pilings, shade, and traffic noise. The pilings would create a safety hazard for any recreational activities in the surf and ocean. And according to the FEIS, they are likely to cause rip currents that would pose a new safety hazard and further impede recreational activities in these areas. FEIS 4-61.

While the FEIS notes some, but not all, of these impacts, it fails to quantify their economic impact. So does the current EA. Again, the agencies' purported economic analysis is fundamentally flawed because it asks only whether beachgoers could go elsewhere on the Outer Banks and concludes there is no economic impact if they could. But the cumulative effect of the two "Phase II" in-easement bridges – eliminating recreation and seriously degrading five or six miles of prime Refuge and National Seashore beach, including the extremely popular and unique S-Turns surfing area – will cause an unknown amount of socioeconomic harm to Dare County and the local communities around Rodanthe. Accordingly, NCDOT and FHWA must evaluate all these impacts and disclose them to the public in an SEIS.

2. Other Significant Impacts to Property Owners

The agencies' preferred alternative will also cause other socioeconomic impacts that have not been evaluated as contemplated by 40 C.F.R. § 1508.14. The proposed in-easement bridge will seriously harm the property values and rental income of the houses in the Project area. The impact on views, the destruction of local beaches, and the reduced vehicle access in Mirlo are acknowledged in the EA, but their socioeconomic impacts are not evaluated. This is a serious omission because all these factors are likely to harm tourism, property values, and rental income in this area. Many of those socioeconomic concerns were raised at NCDOT's January 8, 2014 public meeting in Buxton, North Carolina, and they must be evaluated in an SEIS.

Moreover, the FEIS acknowledged that the presence of bridge pilings in the surf and ocean could create "focused erosional hot spots" that "accelerate the development of a breach," but neither the FEIS nor the EA analyzes the impact to private property that would result in the area from the agencies' preferred alternative. See FEIS 4-67 to 68. Due to scouring effects when the proposed in-easement bridge is subject to storm surge (while on land) and even more so when it is later located in the ocean, this alternative could increase erosion and cause a breach that would damage ocean-side and sound-side property alike and cut off access for residents.

In short, the alternative preferred by NCDOT and FHWA would be a tremendous liability for local property owners, yet the "Phase IIb" EA ignores these socioeconomic impacts entirely. If the agencies insist on pursuing such a short-sighted and destructive alternative, they must at a minimum disclose to the public and elected officials what the effects of their plan will be on the local community and its tourism economy.

3. Impacts to Wildlife Habitat in the Refuge

An SEIS is required to evaluate significant impacts to wildlife habitat in the Pea Island National Wildlife Refuge that were not evaluated in the EA or previous NEPA documents, including the FEIS. In addition, the number of acres of CAMA wetlands that will be impacted by "Phase IIb" has increased by a significant 23.95 acres, between the 2008 FEIS and an updated analysis conducted in 2012. See EA 4-8 to 4-10.

The proposed 2.5-mile in-easement bridge would soon be located on the beach, in the surf, and in the open ocean. Both the EA and FEIS acknowledge that this situation will cause scour, could create increased erosion, would interfere with sediment movement along the shore, and would affect the formation of breaches and inlets. All of these impacts would degrade the beach as nesting habitat for threatened piping plovers and other shorebirds, and for endangered and threatened species of sea turtles. Yet the EA makes no attempt to quantify or disclose to the public the extent of these impacts. Table 8 (EA at p. 5-16) purports to compare "Key Impacts of the Phase IIb Alternatives," yet omits all of the impacts just described. This table also omits any analysis of the noise effects on wildlife nesting from a state highway running 15 to 25 feet directly over the beach within a few years. Similarly, the analysis of "Impacts to Biotic Communities" listed in Table 4 (EA at p. 4-26) omits all the effects of the proposed bridge and its pilings soon being located on the beach, in the surf, and in the ocean.

Scour is a particularly significant concern. A 1997 study prepared for NCDOT by its consultant calculated that for a 100-year storm surge, overland bridge pilings in the Refuge would produce severe scour impacts, resulting in scour over 40 feet below the mudline. NCDOT/Parsons Brinkerhoff, Hydraulic and Scour Analyses (Jan. 1997) (attached as Attachment 2). A 2012 Hydraulic Report reached similar conclusions according to the response to comments in the "Phase IIa" ROD. In their response to comments on this topic, NCDOT and FHWA note that the area within 100 feet of the shoreline of the Refuge is generally a "VE zone," which is an area "likely to see high velocities" – and thus significant scouring – "during a 100-

year storm surge." A VE zone is subject not only to flooding from storm surge, but also to "additional hazards due to storm-induced velocity wave action" including severe scour. FEMA classifies these VE zones as "Coastal High Hazard Areas."

In response to comments in the "Phase IIa" ROD, NCDOT and FHWA try to dismiss concerns about scour in these areas by noting that only *some* of the proposed bridging will be located in these zones *at the time it is constructed* ("Phase IIa" ROD at C-60 (three sections totaling 1.1 miles at the 'S' curves and northern Rodanthe are already in VE zone)). However, it appears that *all* of the proposed bridging will soon be located in these VE zones of high scour along the shoreline. Yet NCDOT and FHWA persist in refusing to evaluate and disclose the scour impacts to Refuge habitat and private property and the potentially significant environmental damage that will result.

Moreover, the "Phase IIb" EA does not even acknowledge the problem of locating the proposed bridge partially at first, and soon completely, within these FEMA-designated VE zones of high-velocity storm surge and severe scouring.

4. Safety Concerns and Maintenance Impacts

NCDOT and FHWA's preferred in-essment bridge will, according to the EA, soon be located in the surf and in the ocean. This short-sighted plan will create potentially significant safety hazards and as-yet-unevaluated impacts – and costs to the public – from the construction and repair work that will be required to try to maintain the bridge.

Beyond the obvious public safety concerns associated with constructing a bridge that will soon be left in the open ocean as the island erodes, NCDOT and FHWA's preferred "Phase IIb" bridge in Mirlo raises additional safety concerns. An ocean-side house could be driven into the bridge pilings during a severe storm, but the EA does not consider this possibility. And as discussed above, scour and "focused erosional hot spots" caused by the bridge may cut off or damage sound-side properties.

NCDOT and FHWA also continue to refuse to incorporate accelerated sea-level rise into their shoreline forecasts for the NC-12 Transportation Management Plan. They now claim there will be less erosion than they forecast previously, though they provide only a line on a map, with no supporting information, in Appendix D. In response to this revised shoreline projection, they have modified the design of the preferred bridge alternative to make it even *more* vulnerable to erosion. EA at 2-9 to 2-10.

The new design, like the old one, does not meet the project goal of placing the ends of the bridge 230 feet soundward of the forecast 2060 high-erosion shoreline. *Compare* FEIS at 2-124 with EA at 2-11. It should be rejected for that reason alone. But in addition, the revised shoreline forecast is highly unlikely to be accurate because it is based on linear projections using

past erosion rates, rather than incorporating well-documented, scientifically-accepted calculations of accelerated sea-level rise into the forecast.

NCDOT and FHWA have never explained why they refuse to incorporate accelerated sea-level rise into their shoreline forecasts for the Project. Their response to a comment on this topic in the "Phase IIa" ROD (at C-52) is highly misleading because it implies that Section 4.6.6 of the FEIS somehow incorporates "the impact of accelerated sea level rise." In fact, the FEIS dismisses the most conservative forecast of sea-level rise recommended for planning purposes by the N.C. Coastal Resources Commission (1.01 meter by 2100) as a "worst-case imagined scenario[.]" and excludes that projection from the FEIS forecasts. Moreover, NCDOT and FHWA admit that they continue to use only linear projections. "Phase IIa" EA at 4-8. An SEIS is therefore required to make an accurate analysis of the shoreline locations in the project area that includes accurate sea-level-rise projections and the impacts to the proposed bridges and to the natural and human environment.

Under any of these shoreline scenarios, the impacts of attempting to *maintain* the "Phase II" ocean bridges, after construction is complete, have not been adequately disclosed or evaluated in the PEIS or other NEPA documents. In the FEIS, NCDOT and FHWA committed to confining all maintenance to the NC-12 easement. FEIS at 4-68. Now, however, they state in the 2010 ROD that this commitment to confine maintenance to the easement "*does not exist* with the NC-12 Transportation Management Plan." ROD at C-16. Thus, the perpetual, long-term maintenance impacts of the proposed bridge are certain to be significantly greater than those contemplated in the FEIS. Attempting to maintain bridges and pilings on the beach, in the surf, and in the ocean will require the use of Refuge land for access and staging that will significantly degrade wildlife habitat. An updated analysis of the maintenance impacts of the preferred ocean bridge must be included in an SEIS.

Similarly, NCDOT and FHWA have not disclosed to the public adequate estimates of the long-term maintenance costs for the two "Phase II" bridges, in the EA or elsewhere, even though these costs are likely to be extremely high. Indeed, the two recent EAs contain *no* maintenance cost estimates. An accurate estimate of these costs depends upon a better understanding of the forces that will act on these ocean bridges and of the scour that their pilings will cause, and an SEIS is required to analyze those factors. Without such an analysis, a fair comparison between alternatives is not possible.

5. Cumulative Impacts

NCDOT and FHWA's preferred alternative will have significant adverse impacts on the Refuge and the human environment, but the cumulative impacts of locating *two* of these "Phase II" bridges over the beach, surf, and ocean are even more significant. As mentioned above, the effect of destroying the beach environment (and removing access) over four, five, or six miles out of only 12 total miles of beach in the Refuge is likely to have a significant deterrent effect on tourism to Hatteras and to the Refuge. In addition, it will degrade a significant proportion of national wildlife refuge habitat and irreversibly destroy its fundamental character as a federally

protected resource devoted to the conservation of migratory birds and other wildlife. The cumulative effect of a series of these ocean bridges would tip the balance and turn the Refuge into a perpetual construction zone and an area first and foremost devoted to and dominated by an elevated highway.

The EA states that indirect and cumulative impacts for "Phase IIb" are "unchanged" from the 2008 FEIS, which in turn stated that "indirect and cumulative impacts would be minimal." FEIS at 4-158. The FEIS also stated that "[t]he replacement bridge corridor alternatives would not alter area development trends," a claim that now appears dubious based on the agencies' preference for a highly intrusive and ill-conceived in-easement bridge at Rodanthe. In addition, the current EA states that building the "Phase IIb" bridge would not affect the construction of later phases of the agencies' Selected Alternative.

All these claims ignore the significant cumulative effects that NEPA requires the agencies to examine – in this case, the combined effects, over time, of creating a series of massive structures on the beach and in the ocean. The combined effects of these bridges and their plings on the Refuge and on tourism must be evaluated and disclosed in an SEIS, as must their cumulative effects on erosion and longshore sediment transport. The FEIS's studies of piers running perpendicular to the shoreline cannot account for such impacts.

B. Alternatives

We oppose NCDOT and FHWA's preferred "Bridge Within Existing Easement" alternative. Instead, we support a stable, long-term transportation solution that avoids the high-erosion areas of the Refuge. In Part III.B of our comments on the "Phase IIa" EA, we discussed the viability of a Pamlico Sound bridge from Bodie Island to Rodanthe and a high-speed, shallow-draft ferry network, and explained why NCDOT and FHWA's analysis of these alternatives is inadequate. Those concerns remain, as does our support for a Pamlico Sound bridge that bypasses the entire Refuge.

While a complete solution to move the entire transportation corridor out of the high-erosion areas of the Refuge is still the best option, we also support achieving that goal in "phases." The seven-mile bridge proposed by the U.S. Fish & Wildlife Service would be a significant step towards that goal, and it would avoid the unknown costs and practical challenges of the two in-easement "Phase II" bridges ending up in the ocean. This seven-mile bridge could be built with a "spur" to accommodate a future extension through Pamlico Sound that could connect to the "Phase I" Oregon Inlet bridge when shoreline conditions dictate. Such a phased approach would eliminate NCDOT and FHWA's concerns about funding a full-length Pamlico Sound bridge in a single funding cycle. It would also allow for vehicle access into the Refuge at the north end of the seven-mile bridge and the south end of the "Phase I" bridge. Accordingly, we support this seven-mile alternative with a design that would allow for extending the causeway through Pamlico Sound.

However, NCDOT and FHWA have given short shrift to this alternative. It is barely mentioned in the "Phase IIb" EA (at p. 2-5), while the "Phase IIa" EA (Section 2.3.4) offered only a cursory analysis before rejecting this alternative. The three reasons given for rejecting this alternative are inadequate.

First, the cost of this alternative is comparable to NCDOT's current plans. NCDOT estimated the construction cost of the seven-mile bridge at \$270 million (attached as Attachment 3). The recently awarded contract for the "Phase IIa" bridge plus the "Phase IIb" bridges brings the total construction cost for this portion of the Project to a range of \$267 million to \$316 million. The amount allocated in the current STIP for the Project is approximately \$476 million. The current allocation is very close to the sum of the estimated cost of the seven-mile bridge combined with the \$216 million contract price of the "Phase I" bridge – and is likely less than the total cost of NCDOT's "Phase I" bridge and "Phase II" alternatives. Moreover, the cost of the seven-mile bridge is likely to be lower than NCDOT's estimate, since the contract price of both the "Phase I" and "Phase IIa" bridges came in significantly lower than NCDOT's estimates.

In the "Phase IIa" EA, NCDOT claims the seven-mile bridge would cost \$289-\$440 million. There is no documentation in the "Phase IIa" EA or in the information packet for the March 21, 2012 Merger Team meeting, to which the EA refers (p. 2-16), of how NCDOT arrived at this higher estimate. By contrast, NCDOT's \$270-million estimate for the seven-mile bridge contains a detailed itemization of the estimated costs. Further, NCDOT concluded without support that this alternative is "unaffordable."

This conclusion is arbitrary and capricious, especially since NCDOT now proposes to spend up to \$532 million to construct the "Phase I" and "Phase II" bridges, and still more on sand dredging and nourishment at Rodanthe. NCDOT attempted in the "Phase IIa" EA to justify its rejection of the seven-mile bridge by stating that "the construction of those individual alternatives could be phased, and each phase be opened to traffic prior to the completion of the other phase," but this statement ignores the fact that NCDOT is proposing to fund and construct both bridges in a single transportation funding cycle. Moreover, NCDOT rejected the seven-mile alternative through the shelter waters of Pamlico Sound before it had even estimated the maintenance costs for in-easement bridges in the ocean. "Phase IIa" EA at A-47.

NCDOT's secondary reasons for rejecting the seven-mile bridge are similarly unavailing. The potential impacts to the dike around the southern Refuge pond could be minimized by coordinating with FWS, which proposed this alternative in the first place. Since even NCDOT and FHWA agree that all the "Phase II" alternatives "use" the Refuge, as defined by Section 4(f) (see Section III.A. below), that statute requires that the alternative causing the least overall harm be selected, just as the Clean Water Act mandates that the least environmentally damaging alternative be selected.

In this case, the seven-mile alternative would be the least environmentally damaging because it would avoid the significant degradation of the Refuge that is certain to result from the construction and maintenance of in-easement bridges, the erosion and scour they cause, and the

conditions they would create when shoreline migration leaves them in the surf and, ultimately, in the ocean. It would also allow for the restoration of approximately 70.7 acres of habitat in the Refuge when the current NC-12 easement is abandoned ("Phase IIa" EA at 2-16).

Nor is NCDOT and FHWA's stated concern about impacts to SAV habitat a plausible reason to reject the seven-mile bridge alternative. These impacts would largely consist of shading. In any case, concerns about shading of SAV habitat in the Sound are outweighed by the many environmental benefits that make this alternative the least environmentally damaging overall compared to the other "Phase II" options.

III. A Revised Section 4(f) Evaluation Is Required

A. Section 4(f) Applies to the Pea Island National Wildlife Refuge.

Under Section 4(f), FHWA is prohibited from approving "any program or project" that requires the use of any public parkland, unless "(1) there is no prudent and feasible alternative to using that land; and (2) the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use." 49 U.S.C. § 303(c) (emphasis added). "Use" within the meaning of Section 4(f) includes uses that result in the actual incorporation of land into a transportation facility, as well as constructive uses that create proximity impacts causing substantial impairment to a resource. See 23 C.F.R. §§ 774.17, 774.15. The regulations implementing Section 4(f) clarify that FHWA "may approve only the alternative that . . . [c]auses the least overall harm" to the property. 23 C.F.R. § 774.3(c)(1). Accordingly, under Section 4(f), FHWA must first select an alternative that avoids using Section 4(f) lands altogether, and, only if no "prudent and feasible avoidance alternative" is available, FHWA must select the alternative that causes the "least overall harm" and also take steps to "minimize harm."

Rather than complying with these requirements, NCDOT and FHWA have assumed erroneously that the "joint planning" exception to Section 4(f), 23 C.F.R. § 774.11(f), exempted them from considering or minimizing any harm to the Refuge "as a refuge" and have considered only far lesser impacts to the Refuge "as an historic property." EA at 5-4.

This analysis is incorrect. The "joint planning" exception does not apply to the Refuge because the Refuge was not "*formally reserved for a future transportation facility before or at the same time a park, recreation area, or wildlife and waterfowl refuge [was] established and concurrent or joint planning or development of the transportation facility and the Section 4(f) resource occurred.*" 23 C.F.R. § 774.11(f) (emphasis added).

The Refuge was created in 1938, and the easement for NC-12 was not granted until 1954. No transportation facility was formally reserved when the Refuge was created. Indeed, all of the land condemned by the U.S. Government for the Refuge was taken from private landowners; it was never in the hands of the State of North Carolina, so no transportation facility could have been reserved by the State when the Refuge was created. Moreover, the entire northern portion

of the Refuge was explicitly taken free of any and all easements or other encumbrances of any kind, as the Judgments of Condemnation in FHWA and NCDOT's files clearly indicate.

Accordingly, the Department of Interior ("DOI") has stated definitively that the "joint planning" exception does not apply to the Refuge. DOI concluded that "there is *no support for FHWA's* ultimate conclusion that the State and the United States engaged in joint transportation and Refuge planning." Letter from Horace G. Clark, Regional Director, Office of the Solicitor to Cynthia K. Dohner, Regional Director, Fish and Wildlife Service (Apr. 9, 2010), at 5 (Attachment 2 to SELC's March 28, 2013 comments on "Phase IIa" EA, referenced above as Attachment 1 and incorporated in these comments) (emphasis added).

In sum, the proposed bridge, like the rest of the Project in the Refuge, is subject to the requirements of Section 4(f), and the EA does not satisfy those requirements.

B. The In-Easement Bridge Would Use the Refuge.

In addition to the actual use of the Refuge for maintenance, discussed above, FHWA's preferred in-easement bridge would constructively use Refuge property as well. "A constructive use occurs when the transportation project does not incorporate land from a Section 4(f) property, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired." 23 C.F.R. § 774.15(a). The physical impacts of the proposed bridge on the Refuge "as a refuge" would impair the "protected activities, features, or attributes that qualify the property for protection" far more substantially than the visual intrusion on the Refuge "as a historic property" that FHWA and NCDOT do acknowledge.

The significant adverse impacts discussed above would substantially impair the Refuge as a habitat for migratory waterfowl and other wildlife. The elevated roadway would soon be located on the beach, in the surf, and eventually in the Atlantic Ocean as the island migrates westward. Thus, the bridge would negatively affect Refuge geology and habitat by increasing erosion, interfering with longshore sediment transport, causing scour, and affecting inlet formation. Lights and traffic noise on the beach would further impair nesting habitat. And continual maintenance, which would not be confined to the easement, would constitute an additional impairment to the refuge. As discussed above, these effects of a long ocean-side bridge running parallel to the shore have not been adequately studied and may be much more significant than revealed in the FEIS.

Moreover, FHWA's preferred in-easement ocean bridge would be the second such bridge in the Refuge, and the adverse impacts of the two "Phase II" bridges would degrade a very significant proportion of the Refuge's beaches. This would change the character of the Refuge and its beach nesting habitat, tipping the balance toward a perpetual construction zone and a landscape dominated by elevated highway and scour-inducing bridge pilings. In sum, all of these effects will substantially impair the Refuge's purpose "as a refuge and breeding ground for migratory waterfowl and other wildlife," including endangered sea turtles.

C. The Alternatives Analysis Fails to Satisfy the Requirements of Section 4(f).

NCDDOT and FHWA claim the Pamlico Sound Alternative, which avoids the Refuge entirely, is not "prudent" within the meaning of Section 4(f) solely because of its estimated construction cost and the claimed inability to fund that up-front cost. EA at 5-11. But under Section 4(f), an alternative that avoids Section 4(f) property, such as the Pamlico Sound Alternative, may be rejected as imprudent due to cost only if it "results in *additional* construction, maintenance, or operational costs of an *extraordinary magnitude*." 23 C.F.R. § 774.17 (emphasis added).

As we have previously explained, NCDDOT and FHWA's analysis of the cost and funding of the Pamlico Sound Alternative fails to satisfy that standard. NCDDOT and FHWA rejected TIFIA-based toll funding for the Pamlico Sound Alternative – even though it would have allowed this alternative to be funded – on the ground that the tolls would be "relatively high," and they chose, based solely on their own preferences, not to pursue any gap funding or additional STIP funding to supplement such tolls. NCDDOT and FHWA's updated toll analysis now estimates tolls of \$10.15 to \$11.75, which they still deem "relatively high," and they still refuse, without explanation, to seek any additional funding allocation for the Project. Moreover, these figures do not reflect NCDDOT's own recent construction cost estimate of as little as \$569 million for the Pamlico Sound Alternative. Even using NCDDOT and FHWA's dubiously higher, revised version of their updated estimates, this alternative could still result in a *savings*, compared to the Selected Alternative, of \$628 million.

As discussed above, the seven-mile bridge alternative, with features to allow for a connection through Pamlico Sound to the "Phase I" bridge over Oregon Inlet, would also provide a long-term, stable transportation solution, and would allow for construction of the entire causeway over multiple funding cycles. This alternative would result in far less harm than the proposed in-casement ocean bridges, and would yield a large net gain of Refuge habitat. For the reasons given above, NCDDOT and FHWA's cost analysis and rejection of this alternative were arbitrary and capricious.

Accordingly, NCDDOT and FHWA have failed to satisfy the requirements of Section 4(f), and must prepare a Revised 4(f) analysis to correct this error.

IV. Coordination and Consultation Regarding the Endangered Species Act and Essential Fish Habitat Must Adequately Assess the Effects of the "Phase IIb" Bridging

NCDDOT and FHWA appear to misrepresent the status of their required Endangered Species Act ("ESA") consultation. The "Phase IIb" EA says that "[f]ormal consultation concluded with the receipt of a letter from NMFS on September 30, 2013." EA at 6-6. But NMFS's September 30, 2013 letter addresses only the "Phase I" bridge. *See* "Phase IIa" ROD at D-19. That letter specifically contemplates "future consultation" with NMFS and FWS

regarding the "Phase II" bridges, which appears not to have occurred. Similarly, FHWA must coordinate with NMFS regarding essential fish habitat ("EFH") for the "Phase II" bridging.

This coordination and consultation regarding the ESA and EFH must adequately address NMFS's longstanding concerns about the effects of FHWA's preferred in-easement bridging. For example, while the "Phase IIb" EA states that there has been no substantial change in EFH habitat since the FEIS, NMFS found the FEIS analysis to be inadequate. In its October 27, 2008 comments on the FEIS, NMFS expressed concern that the proposed "Phase II" bridges, when located in the ocean, "could result in long-term adverse impacts to NOAA trust resources."

NMFS also stated its preference in those comments for the Pamlico Sound Alternative due to its lesser impacts. We agree with NMFS that the impacts of the proposed "Phase II" ocean bridges are likely to be severe, and instead support alternatives that would route the transportation corridor through Pamlico Sound.

Conclusion

NCDDOT and FHWA must prepare an SEIS and revised Section 4(f) Evaluation to correct inadequacies in the current analysis and address the changed circumstances in the funding and setting of the Project. They must abandon their persistent refusal to apply Section 4(f) properly to the significant impacts of the Project in the Refuge. And most importantly, they must disclose their plans for the Project as a whole so they can be evaluated by the Merger Team, governmental decision-makers, and the public.

Sincerely,



Julia F. Youngman
Senior Attorney
Nicholas S. Torrey
Staff Attorney

SOUTHERN ENVIRONMENTAL LAW CENTER

JFY/NSI/lap
Attachments

cc (via e-mail, with attachments):

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John Sullivan, FHWA

Clarence Coleman, FHWA

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March 28, 2013

VIA EMAIL AND U.S. MAIL

Mr. Drew Joyner, Human Environment Section Head
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RE: Bonner Bridge Replacement Project Phase IIa Environmental Assessment
NCDOT STIP No. B-2500A

Dear Mr. Joyner:

Thank you for the opportunity to comment on the Environmental Assessment ("EA") prepared by the North Carolina Department of Transportation ("NCDOT") and Federal Highway Administration ("FHWA") for the "Phase IIa" portion of the Bonner Bridge replacement project, TIP Project Number B-2500 (the "Project"). These comments are submitted on behalf of Defenders of Wildlife, the National Wildlife Refuge Association, and the Southern Environmental Law Center.

I. The EA Illegally Segments the Project in Violation of NEPA.

NCDOT and FHWA have illegally segmented the environmental evaluation of the Project by disclosing and evaluating each of its components separately, in isolation. The record of decision ("ROD") for the Project disclosed only the "Phase I" bridge over Oregon Inlet, and the current EA addresses only the proposed "Phase IIa" permanent bridge over the new Pea Island inlet. This EA will be followed by a separate EA for another bridge in the Rodanthe breach area this summer. A beach renourishment project is also currently proceeding separately in the Rodanthe breach area, although we are not aware of any NEPA analysis having been conducted. Additional components of the Project will only be disclosed, doubtless in a similarly piecemeal fashion, after construction of these first components has begun. This procedure of piecemeal environmental assessments violates NEPA because it evades any comprehensive evaluation of the full Project's impacts and ensures that no fair comparison of the available alternatives will take place until there is already an irrevocable commitment to maintaining NC 12 through the Refuge to support the Phase I bridge, no matter the costs or damage to the human environment that will result.

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ATTACHMENT 1

Mr. Drew Joyner
March 28, 2013
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Segmenting the Project in this way is impermissible under any circumstances, but it is all the more egregious because three to four so-called "phases" of this single Project are now planned for concurrent funding and construction. Despite the fact that these components all belong to a single Project and in fact are planned for concurrent construction, they are being evaluated in separate environmental documents, none of which account for the combined, cumulative effects of the Project on the Refuge and human environment.

NEPA requires that all components of the Project be evaluated together before construction commences, not piecemealed into separate environmental documents that fail to account for the combined impacts of the Project. 40 C.F.R. § 1502.4(a); *Md. Conservation Council v. Gilchrist*, 808 F.2d 1039, 1042 (4th Cir. 1986) ("compliance with NEPA is required before any portion of the road is built"); *W. N.C. Alliance v. NCDOT*, 312 F. Supp. 2d 765, 773 (E.D.N.C. 2003) (NEPA evaluation must be complete "before acting"). In this case, NCDOT and FHWA claim that the previous evaluation in the FEIS of some, but not all, of the available options exempts them from the plain-language requirements of NEPA. But the changed conditions in the Refuge vividly illustrate that NCDOT and FHWA cannot rely on the FEIS, which was not only inadequate when it was issued, but also now is significantly outdated in its analysis of the cost and funding of the available alternatives, in its estimates of the environmental consequences of the alternatives, and in its estimation of the pace and timing for the later phases.

In *Western N.C. Alliance*, the court rejected NCDOT's contention that it was not required to consider "the cumulative impacts from the other connected projects because they were not fully funded or planned." 312 F. Supp. 2d at 773. Therefore, whether the various phases of the Project are categorized properly as a single project, or as related actions or cumulative impacts, their full impacts still must be evaluated together. Because NCDOT and FHWA have failed to do so, as well as for the reasons given below, a supplemental EIS is required.

II. The Proposed Bridge Is Legally and Scientifically Unsupportable.

If it is built, the proposed Phase IIa bridge would soon be located on the beach, in the surf zone, and then in the open ocean as the shoreline erodes underneath it. As a result, the bridge and its pilings would significantly curtail recreational use of the seashore in those areas, harm sea turtle and migratory bird nesting and foraging habitat, and create serious maintenance and hurricane evacuation problems.

Numerous Merger Team agencies have pointed out that the plan to raise NC 12 onto bridges in its current easement is a bad idea. For example, the U.S. Army Corps reminded NCDOT in 2007 that an ocean bridge was rejected in 1991 because wave and storm impacts would create unjustifiably high maintenance costs. Those same problems will plague the proposed "Phase IIa" bridge when the island supporting it erodes and the bridge is left in the ocean. Similarly, EPA requested that the in-easement bridging plan be eliminated due to its "significant environmental impacts and potential permitting constraints."

On May 21, 2009, NCDOT and FHWA rejected the in-easement bridging plan, then known as the "Phased Approach," and proposed a new "least environmentally damaging

practicable alternative" ("LEDPA") for the Project because they "wanted to minimize the extensive adverse impacts [of the Phased Approach] that were identified by the resource agencies in their FEIS comments" (emphasis added). As noted above, these adverse impacts include harm to migratory bird and sea turtle habitat. Because NCDOT and FHWA have already admitted this plan is not the LEDPA, they have failed to satisfy the requirements for a 404 permit under the Clean Water Act.

NCDOT and FHWA are now pursuing the same in-easement bridges they rejected in 2009 in what appears to be an attempt to avoid a compatibility determination for the use of the Pea Island National Wildlife Refuge ("the Refuge"). The U.S. Fish and Wildlife Service ("FWS") and the Department of Interior ("DOI") repeatedly have explained that no alternative may be built on Refuge property outside the existing right-of-way for NC 12 because it cannot be found compatible with the Refuge and would not receive required permits. However, as explained below, the proposed in-easement bridge would cause significant harm to the Refuge as it migrates into the ocean, and thus is not compatible with the Refuge either.

Similarly, the proposed bridge cannot receive a Coastal Area Management Act ("CAMA") permit that complies with CAMA from the Division of Coastal Management ("DCM") because DCM has already determined that "construction of permanent bridges in a location that is projected to be in the ocean on or before the project's design year would be inconsistent with the most basic principles of [CAMA] and the Rules of the Coastal Resources Commission (CRC)."

Thus, NCDOT and FHWA's plan for the proposed Phase IIa bridge, and for additional in-easement bridges at the other high-erosion "hot spots" along NC 12 that NCDOT has identified within the Refuge, is legally and scientifically unsupported. NCDOT and FHWA have continued to rely on faulty legal arguments and inadequate studies to try to justify rejecting less environmentally damaging, safer, and more reliable alternatives, such as a long bridge from Bodie Island to Rodanthe through Pamlico Sound (the "Pamlico Sound Alternative") and a system of high-speed, shallow-draft ferries. Hatteras residents, businesses, and property owners, as well as North Carolina's taxpayers, would be far better served by one of these alternatives to NCDOT and FHWA's current plan.

III. A Supplemental EIS Is Required.

An SEIS is required when significant new information or circumstances will affect the impacts of a NEPA project or the selection of an alternative. 40 C.F.R. § 1502.9(c); 23 C.F.R. § 771.130. Here, both new circumstances and new information, as well as significant impacts not adequately disclosed in the FEIS, mandate the preparation of an SEIS.

A. Impacts

The EA fails to address significant impacts on recreation and wildlife habitat resulting from the fact that the proposed bridge would soon be located in the Atlantic Ocean. It also fails

to disclose whether beach nourishment will be used to stabilize the proposed bridge and, if so, what its impacts would be.

1. Beach Nourishment

NCDOT states that "[n]atural shoreline processes would be allowed to take place" and "[t]he shoreline would erode underneath the bridge." EA at 4-15. Yet, previously, NCDOT planned to use beach nourishment and/or construct artificial dunes in conjunction with the in-easement bridge, as it briefly mentioned in the 2008 Final Environmental Impact Statement ("FEIS"). FEIS 4-70 to 4-72 (dune-building and maintenance); 4-107 (raised in-easement bridging "may require some beach nourishment"). If NCDOT does plan to do any beach nourishment or dune construction in conjunction with the Phase IIa bridge, it must disclose those plans and their impacts to the public.

2. Recreational Use

The proposed bridge would drastically limit all of the recreational uses of the Refuge and National Seashore. Most significantly, it would interfere with and in many cases prevent these recreational activities along the bridge's entire length – approximately 2.5 miles including the bridge itself and approaches at either end – once it is located in the surf zone and in the ocean, as it would be within a few years due to the rapid erosion in the area.

NCDOT's plan to construct the proposed bridge now (rather than after 2020) and its updated shoreline forecasts mean that the proposed bridge would be out in the ocean much sooner than the FEIS estimated. EA at 4-9. Moreover, even the EA's updated shoreline forecast fails to take into account accelerated sea level rise. Instead, it continues to rely on linear projections. EA at 4-8. All these factors mean that adequate assessments of the effects of shoreline erosion on the proposed bridge, and that bridge's effects on the Refuge once it is in the surf and ocean, have not been performed.

Because it would soon be left in the ocean, the proposed bridge would, in NCDOT and FHWA's own words, "eliminate[]" surfing along the miles of bridging that would be in the water. EA at 4-18. The EA notes this fact but does not analyze its significant economic consequences for tourism. Because the "human environment" that is the subject of NEPA includes "the relationship of people with that environment," the applicable regulations require that NCDOT and FHWA analyze socioeconomic impacts where they are interrelated with natural or physical environmental effects. 40 C.F.R. § 1508.14. Here, the proposed bridge's pilings in the ocean and the surf zone would not only pose the obvious collision hazard for surfers; it would also change the wave breaks, rendering the area unfit for surfing. But while the FEIS acknowledged this impact on surfing, it did not make any attempt to calculate its impact on the economy of Rodanthe and Hatteras Island generally.

And while the FEIS acknowledged that surfing would be eliminated, it did not disclose or evaluate the effect that the proposed bridge would have on all the other significant recreational activities in this area: swimming, beachcombing, sunbathing, fishing, birding, kite boarding,

ocean kayaking, etc. The FEIS states only that some of these activities "would be affected" when this bridge is in the surf and in the ocean, FEIS at 4-48, but it does not acknowledge that the effects of bridge pilings would, in practical terms, eliminate not just surfing, but swimming and many of the other activities listed above as well. It is beyond question that visitors would avoid the miles of beach underneath a highway and dominated by its massive pilings, shade, and traffic noise. The pilings would create a safety hazard for any recreational activities in the surf and ocean. And according to the FEIS, they are likely to cause rip currents that would further impede recreational activities in these areas. FEIS 4-61. Of course, use of this area would also be curtailed by the reduced access that the elevated highway would cause. However, NCDOT and FHWA have not analyzed the socioeconomic impacts of any of these effects or their role in eliminating recreational use of the beach. Accordingly, NCDOT and FHWA must evaluate all these impacts in an SEIS.

3. Impacts to Refuge Habitat

In addition to the harmful socioeconomic impacts of the proposed bridge, it would also significantly harm the wildlife habitat of the Refuge. The bridge pilings would cause erosion and scour effects on the Refuge and the ocean floor, would interfere with sediment movement along the shore, and would affect the formation of breaches and inlets. All of these impacts would degrade the beach as nesting habitat for threatened piping plovers and other shorebirds, and for endangered and threatened species of sea turtles. But none of these impacts have been analyzed, calculated, modeled, or even clearly acknowledged. The current EA relies on the 2008 FEIS's vague descriptions of what might happen to the Phased Approach bridges in the ocean, which in turn were based on irrelevant studies that used piers running perpendicular to the shoreline rather than parallel to it as the proposed bridge would do.

Moreover, even the effects that were acknowledged in the FEIS are now out of date. The analysis needs to be supplemented. NCDOT and FHWA now state that the 2060 shoreline in the area of the proposed bridge would have eroded by approximately 100 feet more than they estimated just a few years ago in the FEIS. EA at 4-9. But NCDOT and FHWA ignore the obvious corollary to this statement: the proposed bridge would, therefore, be in the ocean much sooner and would exert far greater long-term effects on the Refuge habitat over the life of the Project than the FEIS assumed. Indeed, NCDOT and FHWA did not even plan to construct this proposed bridge (which was called "Phase III" in the FEIS) until after 2020. FEIS at 2-125. The current plan to construct this bridge as soon as possible, coupled with the greater shoreline erosion rate, means that accurate, updated calculations of the miles of this bridge that would be in the ocean in each decade of the Project—as well as the calculations of the impacts of this bridge on the shoreline, the beach, the new inlet, and the wildlife habitat of the Refuge—must be provided in an SEIS.

In addition to relying on out-of-date information, the EA fails to acknowledge or analyze the significant impacts on species habitat that the proposed ocean bridge would cause. Instead, it assumes that virtually all of the impacts would be confined to the easement. EA at 4-19 to 4-25.

This ignores the long-term effects on habitat that the ocean bridge would cause: increased erosion, scour, and interference with longshore sediment transport.

For example, the FEIS acknowledged that scour from the bridge pilings would affect the ocean floor, but it claimed this effect would not occur for this bridge until 2060. Now, however, it is apparent that the bridge would be outside the breakers much sooner, so the scour area and impacts to essential fish habitat ("EFH") are likely to be much greater over the life of the bridge and must be analyzed anew. Similarly, the FEIS acknowledged that the bridge would interfere with longshore sediment transport and would increase erosion, FEIS at 4-67 to 68, but NCDOT and FHWA never calculated the effect this would have on the beach. The EA mentions that the pilings of the temporary bridge over the Pea Island inlet have already interfered with sediment transport, but again makes no attempt to calculate the greater effects of a 2.1-mile bridge on this aspect of barrier island dynamics. Previously, the FEIS also acknowledged that the presence of bridge pilings in the surf and ocean could create "focused erosional hot spots" that "accelerate the development of a breach," but neither the FEIS nor the EA analyzes this impact on Refuge habitat. See FEIS 4-67 to 68.

Similarly, NCDOT and FHWA acknowledged previously that even while the proposed bridge is still on dry land, "[s]cour around the bridge supports is expected during events that bring the water level in contact with the bridge," *i.e.*, storm surge, FEIS at 4-67. However, the extent of such scour impacts on the Refuge have not been disclosed. This omission is significant because an earlier study by NCDOT's consultant calculated that for a 100-year storm surge, bridge pilings located on the northern end of Hatteras Island would produce severe scour impacts, resulting in scouring over 40 feet deep.

In addition to these impacts, this new plan for an ocean bridge would necessitate significant maintenance activities. Maintenance on this bridge when it is located in the surf zone "would . . . represent a long-term impact" to essential fish habitat ("EFH") and federally protected species. FEIS at 4-108. Permanent, ongoing maintenance is inevitable for bridge pilings located in the high-energy surf zone, and this intrusive activity would be a major detriment to beach habitat and EFH. Again, maintenance of this bridge over the life of the Project would be greatly increased by the earlier construction date and greater shoreline erosion than previously forecast. But the EA fails to account for these impacts.

Moreover, NCDOT and FHWA have abandoned their earlier commitment to confine all maintenance to the NC 12 easement. FEIS at 4-68. Instead, they state in the Record of Decision ("ROD") that this commitment to confine maintenance to the easement "*does not exist* with the NC 12 Transportation Management Plan." ROD at C-16. Thus, the perpetual, long-term maintenance impacts of the proposed bridge are certain to be significantly greater than those contemplated in the FEIS.

In a 2007 letter to then-Governor Easley, DOI stated that the in-easement bridging plan would require actual use of Refuge land and therefore was likely incompatible with the Refuge's purpose:

While the intent is to construct these new bridges within the existing road's right-of-way, we believe this alternative would require *continued maintenance outside of the existing road's right-of-way* through the Refuge until each subsequent phase of bridge construction along NC 12 is completed. Current information also indicates that all 4 phases would require at least 13 years of actual construction during a 28-year timeframe. Based on the information that the [FWS] currently has, it is *unlikely that we could find this alternative to be compatible with the purposes for which the refuge was established*, as required under the Refuge Improvement Act.

Letter from David Verhey, Acting Assistant Secretary for Fish and Wildlife and Parks, to Governor Easley, dated September 11, 2007 (emphasis added).

Because the proposed bridge would harm the Refuge, as described above, it is incompatible with the Refuge under the National Wildlife Refuge System Improvement Act of 1997, 16 U.S.C. § 6684d(d)(3)(A)(i), and its implementing regulations. The presence of bridge pilings in the surf or on the beach would degrade the quality of nesting, foraging, and brooding habitat for the federally protected piping plover and nesting habitat for federally protected green and loggerhead sea turtles. The bridge pilings would further destroy and degrade habitat by causing erosion and scour. And once the bridge is on the beach, it would impose traffic noise, lights, and ongoing construction and maintenance activities on nesting habitat. While more detailed analysis of the extent of these harms is required under NEPA, it is already apparent that the current bridge proposal fails to "ensure no net loss of habitat quantity and quality." 50 C.F.R. § 26.41(c). Accordingly, FWS must deny this use within the existing easement.

Even if the proposed bridge qualified as maintenance of the road within the easement (which is an interpretation we contest), it would still be incompatible with the Refuge because, for the reasons given above, it would "materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission or the purpose(s) of the national wildlife refuge." 50 C.F.R. § 26.41(a)(10).

Finally, safety is a significant concern with the proposed bridge. To our knowledge, the proposed bridge would be the only bridge in the world that would run for miles parallel to the shore through high-energy surf and in the open ocean. This untested and exposed stretch of elevated highway in the ocean would be the sole hurricane evacuation route for Hatteras Island. NCDOT must "fully and adequately set forth . . . [its] ability . . . to maintain the facility after completion of the project in view of the exposure to the winds and the water." *Rankin v. Coleman*, 394 F. Supp. 647, 657 (E.D.N.C. 1975). To date, it has not done so. It must satisfy this requirement before the proposed bridge -- and the other in-easement bridges that will inevitably follow it -- are constructed.

B. Alternatives

The analysis of alternatives in the EA and accompanying studies continues to be biased and unreliable. In essence, NCDOT and FHWA claim, implausibly, that construction costs have

dropped significantly since 2006 for every alternative *except* the Pamlico Sound Alternative. Nor has the funding analysis been updated to reflect the significantly higher STIP allocation for the Project. And a new ferry study created by NCDOT and FHWA claims to evaluate the use of high-speed ferries, but in fact refuses to do so.

1. Pamlico Sound Bridge

The most recent revision to NCDOT and FHWA's cost estimate for a long Pamlico Sound bridge, in which they rejected their own lower updated estimate, does not appear to have been undertaken in good faith.

In 2012, NCDOT updated its estimates for the "Phase IIa" bridge, as well as for the two "Phase IIb" bridging options at Rodanthe, from the 2007 cost estimates that were contained in the FEIS. It found the cost (now updated to 2011 dollars) had dropped significantly -- by as much as 38%. Britney D. Kelly, Summary of Feb. 9, 2012 Meeting with U.S. FWS (May 18, 2012), at 3. NCDOT noted that "a reduction in the unit price for the structure sections and a decrease in the Design-Build inflation factor are two possible reasons why there was a decrease in the cost estimates." *Id.* NCDOT appears to have considered these updates to be accurate and it did not reject them or seek an outside reevaluation.

However, NCDOT reacted very differently when it performed the same type of update for the Pamlico Sound Alternative. It found that the cost of this alternative -- now updated to 2011 dollars from the previous 2007 estimate -- had dropped by 39% to 55%, to a cost range of \$569 million to \$629 million, according to the Phase II Pamlico Sound Bridge Corridor Cost Analysis ("Pamlico Sound Bridge Cost Analysis") that accompanies the current EA. Pamlico Sound Bridge Cost Analysis at iii. NCDOT states that this estimate was developed by updating the previous estimates for inflation and by referencing bids on comparable projects. *Id.* Without adequately explaining why this updated estimate was supposedly inaccurate, NCDOT decided to reject it and sought a reevaluation by outside consultants. *Id.* In other words, it rejected its own updated estimate for the Pamlico Sound Alternative, but not for its other updated estimates for its "Phase II" bridges that used the same methodology.

This unequal treatment of the cost estimates for the various Project alternatives continues to raise serious questions about whether NCDOT has ever evaluated the Pamlico Sound Alternatives in good faith.

NCDOT's only explanation for why its updated, lower cost estimate for the Pamlico Sound Alternative supposedly was inaccurate is that it did not "account for the following design considerations" (listed in the Pamlico Sound Bridge Cost Analysis at 3-2):

- A "corrosion protection plan," which appears to be a maintenance cost and not an up-front construction cost.
- A requirement for the "Phase I" Oregon Inlet bridge request for proposals that prohibited the use of precast concrete "T" girders, which supposedly could

reduce the unit structure cost to \$80-85 per square foot. But there is no indication that the lower-cost precast girders would not be allowed for the Pamlico Sound bridge. NCDOT states in its October 2012 cost estimate report that "[t]he PSBC . . . could utilize a conventional superstructure, a segmental superstructure, or a combination of the two." *Id.* at 2-3. And the FEIS stated that these precast girders "are anticipated" for use on the Pamlico Sound bridge because of their "faster construction, [. . .] higher quality of the precast elements, longer life, lower maintenance requirements, the ability to maintain segment casting production through the winter, and [avoiding] the difficulties of providing ready-mix concrete in a remote setting where water flow, wind, and exposure to the environment are constant forces." FEIS at 2-87.

- "Some economy of scale and savings through innovation . . . were also anticipated" for the original updated estimate." However, NCDOT and FHWA fail to explain why they now believe economies of scale and related savings for a project of this size were not a valid assumption in developing their own estimate.

In short, NCDOT and FHWA have failed to provide an adequate explanation of what was wrong with their own estimate for the construction cost of the Pamlico Sound Alternative. Nor have they explained why they accepted a 38% reduction in the estimated construction cost for a bridge option under their own "Selected Alternative," but rejected as invalid a 39% reduction for the Pamlico Sound Alternative.

Even taking NCDOT and FHWA's much higher, revised update to the Pamlico Sound Alternative construction cost estimate at face value, this alternative nevertheless could be funded. NCDOT and FHWA now estimate the up-front costs (including construction and right-of-way) as \$896 million to \$1.546 billion.

NCDOT already has \$244 million programmed in the State Transportation Improvement Program ("STIP") to rebuild Bonner Bridge at its current location, and it recently allotted an additional \$232 million in the STIP for "Phase II" bridging over two sections of NC 12 damaged in recent hurricanes at the Pea Island inlet and Rodanthe. The total allocation for the Project in the current STIP is thus \$476 million.

NCDOT could also seek additional STIP funding for the Pamlico Sound Alternative. Previously, it refused to do so, claiming that the available STIP funding was strictly limited to the amount allocated for the "Phase I" bridge. Now, however, NCDOT has obtained hundreds of millions of dollars more for its preferred plans. NCDOT has never attempted to seek even partial additional funding for the Pamlico Sound Alternative; without doing so, it cannot claim this alternative cannot be funded.

In addition to available STIP funds for the Project, NCDOT could abandon or defer the Mid-Currituck Bridge project (currently slated for \$28 million in gap funding per year for 40

years) and divert several years of that gap funding to the Pamlico Sound Alternative. Likewise, NCDOT could defer or abandon the unpopular expansion of US-64 through Dare County and the Alligator River Wildlife Refuge, for which \$370 million has been designated in the STIP, and spend only what is necessary to refurbish or replace the existing Alligator River bridge, leaving the rest for the Bonner Bridge replacement project. Widening US-64 is not justified by traffic projections, is opposed by the East Lake community, and is destructive to wetlands.

These funds could be supplemented, if necessary, with TIFIA-based toll funding. NCDOT and FHWA claim in the Pamlico Sound Bridge Cost Analysis, 5-6, that tolling is not an option because a free alternative route is required, but this is a red herring. NCDOT and FHWA have already engaged in a substantial toll analysis in Appendix G of their 2009 Revised 4(f) Evaluation. A free ferry route would satisfy the alternate route requirement. In the alternative, NCDOT could seek an exemption from the requirement for a free route in light of the unusual circumstances of barrier island geography.

When NCDOT and FHWA examined the use of TIFIA bonds in conjunction with tolls, they dismissed this alternative because they claimed the toll rate would be "relatively high." Revised Final 4(f) Evaluation, App'x G at 14. However, concern about "relatively high" tolls cannot justify rejecting the Pamlico Sound Alternative as impracticable and imprudent. Indeed, the toll amount was no higher than, and on certain days was far less than, the \$14-\$28 tolls NCDOT has proposed for the proposed Mid-Currituck bridge. Moreover, the state is seriously considering the possibility of increasing tolls for ferries in the same geographic area already and is receiving public comments on such proposals.

But most importantly, because the STIP allocation for the Project has increased significantly to \$476 million, the amount of required toll revenue – and thus the per-trip toll that would be charged – would be far lower under the current funding arrangement than NCDOT and FHWA's earlier estimate in the Revised 4(f) Evaluation. However, while NCDOT and FHWA claim they updated their funding analysis for the Pamlico Sound Alternative for this EA, in fact they have not revisited their rejection of this method of TIFIA-based toll funding. See Pamlico Sound Bridge Cost Analysis at 5-6. They must do so by preparing a supplemental EIS and Revised 4(f) Evaluation to reevaluate funding for the Pamlico Sound Alternative and supplemental TIFIA-based toll funding in particular.

NCDOT and FHWA previously claimed they would need to "phase" the various segments of the Project over decades and rejected the Pamlico Sound Alternative because it could not be "phased." Now, however, they propose to fund and construct at least three segments of the Project in a single funding cycle – a far larger portion of the Project than they previously claimed was possible. Thus, NCDOT and FHWA's simultaneous funding of multiple "phases" of the Project renders their previous alternatives analysis invalid.

2. High-Speed Ferries

The EA and its accompanying "Reconsideration of the Ferry Alternative Report" ("Ferry Report") do not evaluate the cost or feasibility of high-speed ferries that have been suggested by

commenters numerous times. The EPA, FWS, Defenders of Wildlife, the National Wildlife Refuge Association, SELC, other conservation groups, and members of the public have requested repeatedly that NCDOT and FHWA seriously evaluate the alternative of using high-speed, shallow-draft ferries. These modern vessels have been developed since the 1991 ferry study on which NCDOT and FHWA relied in all their previous NEPA documents, and they have significantly greater capacity (carrying up to hundreds of vehicles) than the ferries considered by NCDOT and FHWA, which hold 30-40 vehicles.

Unfortunately, NCDOT and FHWA still have not evaluated the use of high-speed ferries for the Project. The EA states that "the Ferry Alternative was reevaluated by FHWA with assistance from NCDOT," including "consider[ing] using high-capacity, high-speed ferries." EA at 2-7. However, yet again, the only cost and capacity calculations in the Ferry Report and EA are based on NCDOT's conventional 38-car River Class ferries. Ferry Report, App x D.

The Ferry Report and EA do not evaluate high-speed ferries. Instead, they reject high-speed ferries out of hand and refuse to analyze their costs or feasibility. The only support for this rejection of the high-speed ferry alternative suggested by numerous commenters is the illogical assertion that "[b]ecause the draft depths and required channel depths for high-speed ferries equal or exceed those for conventional vessels, the expected dredging requirements for these vessels make further consideration unreasonable." EA at 2-10, Ferry Report at 16 (emphasis added). In other words, NCDOT and FHWA state that even though a high-speed ferry's draft may "equal" that of a conventional vessel, that somehow justifies rejecting it without further analysis. They also state that *any* additional draft of a high-speed vessel, even one inch, justifies rejecting this alternative. These statements defy logic and show a prejudged and biased refusal to consider the benefits of the high-speed ferry alternative.

Nowhere in the Ferry Report do NCDOT and FHWA attempt to set forth a standard or determination of the maximum draft of a viable Project vessel. Nor do they attempt to weigh the benefits (vastly higher capacity and speed) of a high-speed ferry, as compared with a conventional one, against the undefined amount of additional dredging that may or may not be required. Nor do they attempt to compare costs. Instead, they reject out of hand any vessel with a draft that "equal[s] or exceed[s] those for conventional vessels," with no objective standard or justification to support this rejection. In short, the Ferry Report's treatment of high-speed ferries could not be more plainly biased, unreasonable, arbitrary, and capricious.

Moreover, NCDOT and FHWA's refusal to consider high-speed ferries based on their supposed dredging requirements is unfounded. Even a cursory internet search reveals multiple vessels with larger capacities and higher speeds than NCDOT's conventional 38-car River Class ferry, while also featuring drafts comparable to, and even less than, the River Class's current 5.5-foot draft. A few of the many examples include:

- Sea Transport Solutions, Noord Nederland, 4.92-foot draft, 250 metric tons of trucks,¹ 16 knots (<http://www.seatransport.com/products-ferries.php>);
- Sea Transport Solutions, "Seascape," 5.2-foot draft, 62 cars, 18 knots (<http://www.seatransport.com/products-ferries.php>);
- Maritime Propulsion, MV Schleswig-Holstein, 5.7-foot draft, 75 cars, 1200 passengers, 12 knots (<http://articles.maritimepropulsion.com/article/Delivery-Of-New-Shallow-Draft-Ferry-6670.aspx>).

These webpages are attached as Attachment 1. NCDOT and FHWA's refusal even to consider, let alone rigorously evaluate, high-speed ferries for the Project fails to answer the concerns raised by previous commenters and does not comply with NEPA.

Similarly, NCDOT and FHWA purport to reject the suggested option of a public-private partnership or privatization of ferry routes for the Project, but again, they do so based entirely on the cost estimates for NCDOT's conventional 38-car River Class ferries. Our previous comments suggested private partners specifically to facilitate the use of high-speed ferries. Because the cost of such vessels for the Project still has not been evaluated by NCDOT, the purported rejection of the private partnership option fails to satisfy our concerns and earlier comments.

IV. A Revised Section 4(f) Evaluation Is Required.

A. Section 4(f) Applies to the Pea Island National Wildlife Refuge.

Under Section 4(f), FHWA is prohibited from approving "any program or project" that requires the use of any public parkland, unless "(1) there is no prudent and feasible alternative to using that land; and (2) the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use." 49 U.S.C. § 303(c) (emphasis added). "Use" within the meaning of Section 4(f) includes uses that result in the actual incorporation of land into a transportation facility, as well as constructive uses that create proximity impacts causing substantial impairment to a resource. See 23 C.F.R. § 774.17, 774.15. The regulations implementing Section 4(f) clarify that FHWA "may approve only the alternative that . . . [c]auses the least overall harm" to the property. 23 C.F.R. § 774.3(c)(1). Accordingly, under Section 4(f), FHWA must first select an alternative that avoids using Section 4(f) lands altogether, and, only if no "prudent and feasible avoidance alternative" is available, FHWA must select the alternative that causes the "least overall harm" and also take steps to "minimize harm."

¹ By our calculations, at approximately 4,127 pounds per car, 250 metric tons equates to approximately 133 cars. (EPA reports that, for U.S. cars likely to be on the road today, the average weight peaked at 4,127 pounds with model year 2011. EPA, Light-Duty Automotive Technology, Carbon Dioxide Emissions, and Fuel Economy Trends: 1975 Through 2012, at 12 (Mar. 2013), available at <http://www.epa.gov/ots/trends.htm>.)

Rather than complying with these requirements, NCDOT and FHWA have assumed erroneously that the "joint planning" exception to Section 4(f), 23 C.F.R. § 774.11(i), exempted them from considering or minimizing any harm to the Refuge "as a refuge" and have considered only far lesser impacts to the Refuge "as an historic property." EA at 5-4.

This analysis is incorrect. The "joint planning" exception does not apply to the Refuge because the Refuge was not "formally reserved for a future transportation facility before or at the same time a park, recreation area, or wildlife and waterfowl refuge [was] established and concurrent or joint planning or development of the transportation facility and the Section 4(f) resource occurred." 23 C.F.R. § 774.11(i) (emphasis added). The Refuge was created in 1938, and the easement for NC 12 was not granted until 1954. No transportation facility was formally reserved when the Refuge was created. Indeed, all of the land condemned by the U.S. Government for the Refuge was taken from private landowners; it was never in the hands of the state of North Carolina, so no transportation facility could have been reserved when the Refuge was created. Moreover, the entire northern portion of the Refuge was explicitly taken free of any and all easements or other encumbrances of any kind, as the Judgments of Condemnation in FHWA and NCDOT's files clearly indicate.

Accordingly, the Department of Interior ("DOI") has stated definitively that the "joint planning" exception does not apply to the Refuge. DOI concluded that "there is no support for FHWA's ultimate conclusion that the State and the United States engaged in joint transportation and Refuge planning." Letter from Horace G. Clark, Regional Director, Office of the Solicitor to Cynthia K. Dohner, Regional Director, Fish and Wildlife Service (Apr. 9, 2010), at 5 (Attachment 2) (emphasis added).

In sum, the proposed bridge, like the rest of the Project in the Refuge, is subject to the requirements of Section 4(f), and the EA does not satisfy those requirements.

B. The Proposed In-Easement Bridge Would Use the Refuge.

As discussed above, DOI has concluded that maintenance for the proposed in-easement bridging would not be confined to the easement, would use the Refuge, and would be incompatible with its mission and purpose. In addition to the actual use of the Refuge for maintenance, the proposed bridge would constructively use Refuge property as well. "A constructive use occurs when the transportation project does not incorporate land from a Section 4(f) property, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired." 23 C.F.R. § 774.15(a). The physical impacts of the proposed bridge on the Refuge "as a refuge" would impair the "protected activities, features, or attributes that qualify the property for protection" far more substantially than the visual intrusion on the Refuge "as a historic property" that FHWA and NCDOT do acknowledge.

The significant adverse impacts discussed in Part I above would substantially impair the Refuge as a habitat for migratory waterfowl and other wildlife. The elevated roadway would soon be located on the beach, in the surf, and eventually in the Atlantic Ocean as the island

migrates westward. Thus, the bridge would negatively affect Refuge geology and habitat by increasing erosion, interfering with longshore sediment transport, causing scour, and affecting inlet formation. Lights and traffic noise on the beach would further impair nesting habitat. And continual maintenance, which would not be confined to the easement, would constitute an additional impairment to the refuge. As discussed above, these effects of a long ocean-side bridge running parallel to the shore have not been adequately studied and may be much more significant than revealed in the FEIS.

The Refuge Act specifically mandates that a compatibility determination consider the direct, indirect, and cumulative impacts on Refuge land and any adjacent land or waters that affect the Refuge use. It is clear that the elevated roadway option would have adverse impacts on the Refuge, and it is therefore subject to a compatibility determination. For the reasons already discussed, FWS cannot approve the proposed activity because it is incompatible with the mission and purpose of the Refuge.

C. The Alternatives Analysis Fails to Satisfy the Requirements of Section 4(f).

NCDOT and FHWA claim the Pamlico Sound Alternative, which avoids the Refuge entirely, is not "prudent" within the meaning of Section 4(f) solely because of its estimated construction cost and the claimed inability to fund that up-front cost. EA at 5-10. But under Section 4(f), an alternative that avoids Section 4(f) property, such as the Pamlico Sound Alternative, may be rejected as imprudent due to cost only if it "results in additional construction, maintenance, or operational costs of an extraordinary magnitude." 23 C.F.R. § 774.17 (emphasis added).

As we have previously explained, NCDOT and FHWA's analysis of the cost and funding of the Pamlico Sound Alternative fails to satisfy that standard. NCDOT and FHWA rejected TIFIA-based toll funding for the Pamlico Sound Alternative – even though it would have allowed this alternative to be funded – on the ground that the tolls would be "relatively high," and they chose not to pursue any gap funding or additional STIP funding to supplement such tolls based solely on their own preferences. The far greater STIP allocation for the Project now means that any tolls could be significantly lower than previously calculated, and comparable to other tolls being considered for other project by NCDOT, but NCDOT and FHWA have not revised their analysis of TIFIA toll funding or the availability of gap funds. The cost of the Pamlico Sound Alternative is now estimated to be perhaps as little as \$569 million. But even using NCDOT and FHWA's deviously higher, revised version of their updated estimates, this alternative could still result in a savings, compared to the Selected Alternative, of \$628 million.

In sum, NCDOT and FHWA unreasonably rejected funding options that would have allowed them to construct the Pamlico Sound Alternative, and they have failed to update their analyses to reflect the lower cost estimates and greater available funds that now make this alternative even easier to finance. Accordingly, NCDOT and FHWA have failed to satisfy the requirements of Section 4(f), and must prepare a Revised 4(f) analysis to correct this error.

D. The Temporary Construction Easement Would Use the Refuge.

The 3.84-acre temporary construction easement sought by NCDOT and FHWA fails to satisfy the requirements of 23 C.F.R. § 774.13(d) and thus constitutes a use of the Refuge. First, the duration of the easement is *not* "less than the time needed for construction of the project" – instead, it is the full 3.5-year construction period, as NCDOT and FHWA admit. EA at 5-6. Contrary to those claims, it is immaterial whether their construction vehicles would be present on all portions of the easement land for the entire duration; the key fact is that they would have the *right* to use the land in the form of an easement or authorization via Special Use Permit. Thus, the use in question would last the entire duration of the construction project.

There is no question that the requested construction easement would cause "interference with the protected activities, features, or attributes of the property, on *either a temporary or permanent basis*." *Id.* § 774.13(d)(3) (emphasis added). Turning this section of the Refuge into a construction zone for 3.5 years in order to construct over two miles of a massive, 23- to 32-foot-high bridge, EA at 1-16, would interfere with the habitat conservation activities that are the purpose of the Refuge, with its features, and with its attributes as a wildlife habitat. There is also no basis for the claim that the construction would have no effect on the refuge as an historic property. *See* EA at 5-9. Moreover, the construction is also likely to cause "adverse physical impacts" to fragile habitat that may not be able to be fully restored ((d)(4)) and thus would be permanently affected ((d)(3)). Finally, NCDOT and FHWA have failed to establish that the construction activity in the easement would be "minor" ((d)(2)), given the scale of the proposed bridge and duration of the construction project.

For all these reasons, the Refuge Manager's agreement with the claims regarding this temporary construction easement was not justified and the authorization should not issue without a compatibility determination.

V. Re-Initiation of Consultation Is Required Under the Endangered Species Act.

Section 7(a)(2) of the Endangered Species Act ("ESA") imposes a substantive duty on each federal agency to "insure that any action authorized, funded or carried out by [an] agency is not likely to jeopardize the continued existence" of listed species. 16 U.S.C. § 1536(a)(2). Pea Island National Wildlife Refuge is home to a number of listed species, including the threatened piping plover and three species of sea turtle. An agency action will "jeopardize" a species if it "reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species." 50 C.F.R. § 402.02. This substantive requirement is an absolute prohibition on any action that would jeopardize a protected species' survival. *See, e.g., Sierra Club v. Marsh*, 816 F.2d 1376 (9th Cir. 1987).

The consultation requirement is triggered whenever an agency proposes to undertake an activity that "may affect" a listed species. 16 U.S.C. 1536(a)(2); 50 C.F.R. § 402.14(g). In evaluating the "effects of the action," FWS must consider the "direct and indirect effects of an action ... that will be added to the environmental baseline." 50 C.F.R. § 402.02. The

environmental baseline includes "the past and present activities of all federal ... actions in the action area." *Id.* Finally, the biological opinion must contain "detailed discussion of the effects of the action on the listed species." 50 C.F.R. § 402.14(b)(2).

Re-initiation of formal consultation is required in the following circumstances:

- (a) If the amount or extent of taking specified in the incidental take statement is exceeded;
- (b) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;
- (c) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or
- (d) If a new species is listed or critical habitat designated that may be affected by the identified action.

50 C.F.R. § 402.16. Although FWS has prepared a Biological Opinion for Phase I – the actual replacement of the Bonner Bridge – it has not completed consultation for the proposed bridge and other additional phases of the project. FEIS at E-32. As a result, FHWA and NCDOT do not possess incidental take coverage for these new phases of the project. FWS has stated that it will update its analysis of the Project's effects through a process of appended programmatic consultation. *Id.* As each phase of the Project is developed, NCDOT and FHWA must re-initiate consultation.

Thus, FWS has not fully evaluated the impacts of the proposed bridge and additional phases of the Project because originally some of these phases were not scheduled to be reviewed and completed until 2020 or later. Specifically, FWS has not adequately considered the impacts of concurrent construction on nesting wildlife. FWS has not adequately evaluated the possibility of an increase in take of nesting wildlife and their critical habitat due to greater effects of the proposed bridge on beach habitat, over a greater portion of the life of the Project, than were previously assumed. Other effects include shading of the beach from the elevated roadway and increased traffic noise and lights from the lower bridge height. Nor has the agency reviewed the likely possibility that take could occur in the water when the road would be in the surf zone due to continued erosion and migration of the beach.

Because the proposed "Phase II" bridges may increase the amount or extent of taking of species and the modified projects may affect species in a manner and to a degree not previously considered, NCDOT and FHWA must re-initiate or complete consultation with FWS. At a minimum, FWS will need to re-evaluate its jeopardy conclusions and expand the incidental take statement to cover these additional actions.

Further, when FHWA does re-initiate consultation, we are concerned it will attempt to discount or ignore the effects of the proposed bridge on protected species. For example, the EA claims the potential effects on sea turtles would be "discountable and/or insignificant," based only on discussion of construction impacts for the Phase I bridge and potential foraging under that bridge. The EA thus ignores the most obvious impact of the proposed bridge: when the

pillings are located on the beach, they will adversely impact sea turtle nesting habitat, as will the vehicle lights and traffic noise from a highway running 23 to 32 feet above the beach for miles. The Phase I bridge, if built, would be protected by Terminal Groin from erosion. The proposed bridge, by contrast, would soon be located in beach nesting habitat for these turtles, and this would occur far sooner than previously estimated and for a greater portion of the life of the Project, commencing years earlier than earlier projections. Thus, there is no basis for the statement in the EA that the effects of the proposed bridge would be "similar to or less than the effects . . . as a result of Phase I." EA at 4-22.

The same is true for piping plover nesting habitat on the beach. NCDOT and FHWA's 2008 Biological Assessment ("BA") assumed plovers would not nest or forage in the area of the proposed bridge because there was no inlet at the time. BA at 20-21, but since the inlet formed in 2011, the area around the new inlet now has all the features of critical habitat for the piping plover. EA at 4-13. In addition, the proposed bridge would be located on the beach sooner, and for more miles, than the BA assumed. BA at 20-21. It also would not be as high as previously contemplated, bringing highway traffic noise and lights closer to the nesting and foraging habitat. Thus, the impacts of the proposed bridge would be significantly greater than assumed in the 2008 analysis, and these new circumstances and information – which were not considered previously – require a re-initiation of consultation with FWS.

Finally, FWS's 2008 Biological Opinion requires NCDOT to implement a number of "nondiscretionary" measures. EA at 6-14, that are listed at the front of the EA. Among these, item 25(b) requires that in order to protect piping plover habitat, NCDOT must "keep all construction equipment and activity within the existing right-of-way." EA at vi. However, NCDOT and FHWA now seek a 3.5 year construction easement outside the NC 12 right-of-way, totaling 3.84 acres. This is a plain violation of this condition of the Biological Opinion.

Conclusion

The damage to NC 12 wrought by Hurricanes Irene and Sandy and the resulting lengthy road closures on Hatteras Island, during which access to the island over the current Bonner Bridge was disrupted for nearly two months after each hurricane, have shown the folly of attempting to "phase" the planning of a highway route through the Refuge in an orderly manner over decades. Instead, short-term emergencies, which were nevertheless entirely predictable, have driven short-sighted decision-making, and will continue to do so. Because NCDOT and FHWA do not have alternate plans that are compatible with the Refuge, they have begun proposing what will most likely be a series of permanent bridges over the "hot spots" along NC 12. However, the island supporting these bridges will soon erode, and the bridges would be left in the ocean, in some cases within a few years. This would be a disaster for the environment, tourism, safety, and hurricane evacuation. The solution is not to persist in trying to maintain the existing easement and build a doomed and vulnerable bridge, but rather to move the transportation corridor out of the Refuge and away from the rapid and inevitable shoreline movement that will always threaten the road.

Accordingly, NCDOT, FHWA, and the rest of the Merger Team should re-evaluate their plans for the Project. However, NCDOT and FHWA have refused to give the Merger Team and the public the information they need to analyze the alternatives meaningfully. Construction costs have dropped dramatically, but the EA claims this trend somehow does not apply to the Pamlico Sound Alternative. NCDOT has secured hundreds of millions more dollars in funding for its current plan, but has refused to update its funding calculations for other alternatives to reflect this new information. And NCDOT and FHWA prepared a ferry study that once again claims to evaluate high-speed ferries but in fact refuses to do so, with no objective standard or adequate justification.

NCDOT and FHWA must prepare an SEIS and revised Section 4(f) Evaluation to address the significant new information and changes related to the Project area and the available funding for the Project, as well as to address the Project impacts that were not adequately evaluated in previous NEPA documents. They must abandon their persistent refusal to apply Section 4(f) properly to the significant impacts of the Project in the Refuge. And most importantly, they must disclose their plans for the Project as a whole so they can be evaluated by the Merger Team, governmental decision-makers, and the public.

Sincerely,



Julie Youngman
Senior Attorney
Nicholas S. Torrey
Associate Attorney
SOUTHERN ENVIRONMENTAL LAW CENTER

JFY/NST/lap
Attachments

cc (by e-mail only, with attachments):

Dr. Gregory Thorpe, Ph.D., NCDOT
John Sullivan, FHWA
Clarence Coleman, FHWA
Stacey Bosshardt, Esq., USDOJ, attorney for FHWA
Thomas H. Henry, Esq., NCDOT, attorney for NCDOT

- Ferries
- Cargo Vessels / Workboats
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- Self-Discharging Bulk Carriers
- Pusher Tug / Barge (ATB)
- Military
- Transhipment

Ferries



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- Shallow Draft
- Lower Fuel Consumption
- Higher Speed
- Improved Stability and Safety

MV 'Pentalina'



Operating in the Orkeny Isla
68.9m x 20m x 2.5m Draft
350 PAX, 475 DWT
4 x 589KW
18 Knots

MV 'Sea Spirit 1'



Operating in Venezuela
64m x 20m x 2.4m Draft
94 Cars, 400 PAX
4 X 750kW
18 Knots

ATTACHMENT 1

MV 'Seawind'



Operating in Bahamas
47m x 15m x 1.5m Draft
32 Cars, 250 PAX
4 X 400KW
18 Knots

MV 'Seascape'



Operating in Abu Dhabi, UA
49m x 16.5m x 1.6m Draft
62 Cars, 300 PAX
4 X 400KW
18 Knots

MV 'Noord Nederland'



Operating in Holland
45m x 15m x 1.5m Draft
250t of trucks, 12 PAX
4 X 295KW
16 Knots

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Delivery Of New Shallow Draft Ferry

By [Keith Henderson](#) at December 15, 2011 06:43

Filed Under: [Comparative News](#)

The German ferry company Wyker Dampfschiffs-Reederei Föhr-Amrum GmbH, (W.D.R) has been operating an inter island ferry service since 1885. The islands are located in the Wadden Sea, a shallow area of the North Sea off the German and Dutch coasts.



Caption: The MV Schleswig-Holstein undergoing trials in the Baltic Sea in October 2011.

Image Credit: Wyker Dampfschiffs-Reederei Föhr-Amrum GmbH

This month WDR took delivery of the latest addition to it fleet the 3,300 GT MV Schleswig-Holstein. A sister ship to the Uthlande, in service since last year. Schleswig-Holstein is the fourth vessel bearing this name, the predecessor retiring after 41 years of service. The ship was built by Neptun Werft shipyard in Rostock, Germany, part of the Meyer Neptun Group in ten months construction time at a reported cost of \$22.7 million US (17.5 million Euro).

The new ferry has an LOA of 249 ft (76 m), beam of 51.8 ft (15.8 m) and the exceptionally shallow draft, fully laden, of 5.7 ft (1.75 m). This allows the ferry to operate in all tide states in the shallow Wadden Sea area of operation. The hull is double ended with symmetrical bow and stern arrangements allowing the ferry to operate in either direction without having to waste time turning every time entering and leaving harbor.



Caption: This model of the ferry shows the location of the Voith-Schneider vertical propeller drives and how the shallow draft is achieved.

Image Credit: Wyker Dampfschiffs-Reederei Föhr-Amrum GmbH

The propulsion system features four Voith-Schneider 16 RS EC/120-1 (2 x 2) vertical propeller drives, two at each end, giving a speed of 12 kn with outstanding manoeuvrability. Caterpillar engines are used throughout, providing propulsion power from four 3508C-DITA-SCAC diesels each of 758kW. Two C9 DITA gensets are rated at 200kWe at 50Hz for the on-board electrical power supply.

The ferry has a carrying capacity of 350 tons, 75 automobiles and up to 1200 passengers in the summer months, reducing to 650 passengers in winter.



Caption: Closeup of one of the four Voith-Schneider vertical propeller drives.

Image Credit: Wyker Dampfschiffs-Reederei Föhr-Amrum GmbH

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April 9, 2010

BRIEFING PAPER

To: Cynthia K. Dolner, Regional Director, Region 4, Fish and Wildlife Service
From: Horace G. Clark, Regional Director, Southeast Region *Horace G. Clark*
Subject: Pea Island National Wildlife Refuge-State Road NC 12-4(f) Analysis

You have requested this office to prepare for your use an analysis of the Revised Final Section 4(f) Evaluation, NC 12 Replacement of Herbert C. Bonner Bridge (October 2009), circulated by the Federal Highway Administration (FHWA). As will be explained and discussed below, FHWA concludes in this revised determination that its plans with respect to NC 12 through Pea Island National Wildlife Refuge (Refuge) do not constitute a "use" of Refuge lands under Section 4(f) of the Department of Transportation Act of 1966, 49 U.S.C. § 303 and 23 U.S.C. § 138. Therefore, FHWA contends that it is not required to identify avoidance alternatives or determine the least harmful alternative with respect to the maintenance and relocation of NC 12 through the refuge. This office disagrees with the analysis and conclusions of the FHWA and offers the following comments for your use in future negotiations with FHWA and North Carolina Department of Transportation.

DISCUSSION

The Department of Transportation Act of 1966, 49 U.S.C. § 303 and 23 U.S.C. § 138, provides that:

- The Secretary [of Transportation] may approve a transportation program or project . . . requiring the use of publicly owned land of a . . . wildlife and waterfowl refuge of national, State or local significance . . . only if—
- (1) there is no prudent and feasible alternative to using that land, and
- (2) the program or project includes all possible planning to minimize harm to the . . . wildlife and waterfowl refuge . . . resulting from the use.

49 U.S.C. § 303(c). See also 23 U.S.C. § 138.

Under this Act, Refuge land may be used for transportation purposes, such as a highway right-of-way, if there is no other alternative that is prudent and feasible. Additionally, before the project is implemented, the planning exercise must minimize harm to the Refuge.¹

Under FHWA's revised 4(f) evaluation, it distinguished between effects of the project on the Refuge as a refuge and as a historic property. It concluded that there were effects on 3.8 acres of the Refuge as a historic property, but it did not make a determination of effects of the future alignment and maintenance of NC 12 upon the Refuge "as a refuge." The reason for this is that FHWA determined that the project would not "use" Refuge land, and, therefore, it was not required to undertake an analysis of prudent and reasonable alternatives or minimization of harm.

FHWA based its conclusion that the project does not "use" Refuge land on a regulation detailing the applicability of the 4(f) requirements:

When a property is formally reserved for a future transportation facility before or at the same time a . . . wildlife and waterfowl refuge is established and concurrent or joint planning or development of the transportation facility and the Section 4(f) resource occurs, then any resulting impacts of the transportation facility will not be considered a use as defined in § 774.17.

23 C.F.R. § 774.17(i).

In order to determine the application of this regulation to the Refuge, the historical relationship of the Refuge and NC 12 must be examined.

Historical Background

Pea Island Migratory Waterfowl Refuge was established by Executive Order 7864 (April 8, 1938), 3 F.R. 863. Initially, the lands for the refuge were acquired and administered by the Secretary of Agriculture. This function was transferred to the Department of the Interior in 1939.

The United States engaged in two condemnation proceedings in 1938 by which it acquired the interests of private individuals in Kinnekeet Township on the north end of Pea Island. As a result of those proceedings the United States acquired fee simple title, free of all liens and claims, to approximately 4,200 acres of land. No reservations on behalf of the State of North Carolina were made in the estates taken in these condemnation proceedings, nor were the condemned estates subject to any public roads or rights-of-way. In 1938, the United States' title was not encumbered by any right of the State of North Carolina to plan, construct, or maintain a road on these refuge lands.

¹ The Act does not define the terms prudent, feasible, or minimize harm. These terms are defined in regulations promulgated by the FHWA, 23 C.F.R. § 774.17.

Highway and Public Works Commission 100 feet in width, being measured 50 feet on each side of the center line thereof, as constructed.”

The quitclaim deed from the State was followed shortly by a Deed of Easement, dated July 21, 1954, from the Department of the Interior to the State of North Carolina. The deed conveyed to the State a “permanent easement”, 100 feet in width, being 50 feet on each side of a centerline description. The deed contains no language authorizing the State of North Carolina to relocate the highway.

The easement conveyance to the State was made subject to the express condition that the United States’ use of the easement lands for the protection and administration of wildlife resources would not be impaired, except to the extent that such administration is inconsistent with the right of the State to construct, operate, and maintain a public highway on the lands.

The easement granted to the State of North Carolina in 1954 established and fixed in place the highway corridor for NC 12. In 1962 a portion of the road was washed out by a storm. In order to deviate from the 100 foot highway easement and build around the eroded segment of the road, North Carolina was required to obtain from the Secretary of the Interior an additional easement under the authority of the 1951 Act of Congress. By deed dated October 1, 1963, the Secretary granted the additional easement to the State of North Carolina, and the State relinquished its interest in the portion of the 1954 easement that was washed out. After 1966, changes in the road alignment have been accomplished under the authority of the National Wildlife Refuge Administration Act, 16 U.S.C. § 668dd(d)(1)(B), by the issuance of rights-of-way permits by the Service.

Pea Island NWR is included within the boundaries of the National Seashore. This does not mean that the authorities pertaining to the National Seashore automatically apply to the Refuge. The Act which created the National Seashore expressly provides that the refuge would continue to be administered for protection of migratory birds. The Park Service is permitted to administer only the recreational uses of the refuge in a manner that is consistent with Fish and Wildlife Service’s management of the lands for migratory bird and other wildlife-related purposes. 16 U.S.C. § 459a-3. The Park Service and Fish and Wildlife Service have entered into an agreement dividing their responsibilities with respect to the lands of Pea Island NWR. Nothing in this agreement delegates to the Park Service the authority to grant easements across the lands of the Refuge.

happen in that sequence. The quitclaim deed was executed first, and the easement deed from the United States to the State was executed last. There is no legal significance to the order in which the deeds were executed.

At about the same time, the United States Congress authorized the acquisition of lands for the establishment of Cape Hatteras National Seashore (National Seashore) for administration by the National Park Service. The authorities and limitations pertaining to the National Seashore are markedly different from the authorities pertaining to the Refuge.

The Park Service’s acquisition authority for the National Seashore required that it receive all lands by donation from the State of North Carolina. 16 USC 459. This required the State to enact legislation providing for the purchase of privately-owned lands and donation of those lands to the United States. In State legislation enacted in 1939, North Carolina agreed to acquire lands necessary for the establishment of the National Seashore on the condition that:

the State of North Carolina and its subdivisions expressly retain title to and control of all public roads and highways now laid out or established over and upon said lands, and the further right to lay out and establish over and upon said lands such other highways and roads as shall be deemed necessary by the State of North Carolina and political subdivisions thereof.

This language was inserted into deeds in the 1950’s when the State donated and transferred lands to the United States for purposes of the National Seashore. It is important to note that this language has never appeared in any deed conveying lands to the United States for purposes of Pea Island NWR.

The absence of a right held by the State of North Carolina to establish roads in the Refuge necessitated enactment by Congress of the Act of October 29, 1951, 65 Stat. 662, which authorized the Secretary of the Interior:

to convey to the State of North Carolina a permanent easement for the construction of a public road (together with rights for such other uses as may be customary or necessary in the State of North Carolina in connection with the construction or operation of said road) through Pea Island National Wildlife Refuge in Dare County, North Carolina, and to accept in return therefor the conveyance of any rights-of-way, easements, or other rights in or claims to land owned by the State of North Carolina not needed for use in the construction or operation of said road.

In 1952 the State proposed Project 1-9-5-205 for the construction of a road through the Refuge, which was completed in 1954. By deed dated May 20, 1954, the State of North Carolina quitclaimed to the United States its interest in all roads within the Refuge, “except for the easement of right of way for that road or public highway recently built through Pea Island National Wildlife Refuge, for which an easement of right of way had been granted” to the State

² The tense of this provision in the quitclaim deed might lead one to believe that the easement deed from the United States preceded the quitclaim deed from the State. It did not.

Analysis of FHWA's Section 4(f) Conclusions

In its 4(f) analysis FHWA sees the State's 1954 quitclaim of its interests in roads as evidence that State roads existed within the Refuge at the time it was created, and as a part of joint transportation and Refuge planning, those roads were quitclaimed to the United States in exchange for the easement for NC 12. The historical record does not support FHWA's view of the matter. Certainly people were driving on the lands that ultimately became the Refuge. People lived in the area and traveled on the land. This use, however, had not ripened into a State highway in 1938 when the United States condemned the land. Otherwise, the State of North Carolina would have been as careful to preserve its rights in the Refuge lands as it did in the lands that were devoted to the National Seashore. In the absence of identifiable State roads as a matter of public record, there is no support for FHWA's ultimate conclusion that the State and the United States engaged in joint transportation and Refuge planning.

The sixteen-year gap in time between creation of the Refuge and establishment of NC 12 renders the "use" regulation, 23 C.F.R. § 774.11(f) cited by FHWA inapplicable. The transportation facility in question, NC 12, was not reserved before or at the same time the Refuge was established, and there is no evidence in the record that there was any joint planning of the Refuge and future transportation facilities. Indeed, the opposite is the case. Thirteen years after the Refuge was acquired from private parties, the State had to seek special legislation in order to obtain an easement for NC 12. Act of October 29, 1951, 65 Stat. 662. If this regulation is inapplicable, and we believe it is, then the Bonner Bridge/NC 12 project constitutes a "use" of the Refuge. In that case, FHWA must identify avoidance alternatives and determine the least harmful alternative with respect to the maintenance and relocation of NC 12 through the Refuge.

Nor is FHWA's effort to "piggy back" the Refuge onto Cape Hatteras National Seashore persuasive. Arguably, the concurrent reservation/joint planning exception to Section 4(f) applies to the National Seashore. Its deeds from the State are encumbered by a State reservation of an existing highway right-of-way, together with a right to relocate the road in the future. However, this deed language does not in any sense apply to the Refuge. Nor does the fact that Pea Island NWR is within the boundaries of the National Seashore alter this conclusion. Although the Refuge and National Seashore are closely aligned and cooperate with each other, their acquisition histories and management mandates are based upon different statutory and regulatory schemes. The effort of FHWA to conflate the two separate areas is not supported by history or law.

Finally, we note that even if FHWA undertakes an analysis of avoidance alternatives, it has already concluded that the Pamlico Sound Bridge Corridor, which would avoid use of Refuge lands for road purposes, is not feasible. Therefore, the Service may need to consider the utility of contesting FHWA's "use" determination.

Replacement of the Herbert C. Bonner Bridge

Hydraulic and Scour Analyses:

Analysis of Flume Modeling Experiments and Scour Estimates for Replacement Bridge Piers

Prepared for:

The North Carolina Department of Transportation

by:

Parsons Brinckerhoff Quade and Douglas, Inc.



January 1997

Table 4: Maximum Projected Scour at Replacement Bridge

Section	100 Year Return Period Storm Surge			
	South Overland	South	Navigation	North
Approach Elevation (feet NGVD)	0.0	-38.0	-38.0	-12.0
Contraction Scour (feet)	0.0	0.9	0.9	0.9
Pier Scour (feet)	40.6	41.4	41.4	40.7
Total Scour below mudline (feet)	40.6	42.3	42.3	41.6
Scour Elevation (feet NGVD)	-40.6	-80.3	-80.3	-53.6

Section	500 Year Return Period Storm Surge			
	South Overland	South	Navigation	North
Approach Elevation (feet NGVD)	0.0	-38.0	-38.0	-12.0
Contraction Scour (feet)	0.0	1.0	1.0	1.0
Pier Scour (feet)	40.6	41.4	41.4	40.7
Total Scour below mudline (feet)	40.6	42.4	42.4	41.7
Scour Elevation (feet NGVD)	-40.6	-80.4	-80.4	-53.7

The computational hydraulic modeling shows that the overland piers can be subject to high angles of attack during an ebb tidal surge. An angle of attack of 60° produces the maximum effective width at the overland piers. Hence, a correction factor is used reflecting an angle of attack of 60°. The correction factor is high for the Over3 pier because of the longer pier length than the Over1 and Over2 piers.

Critical velocity in the overland section is 1.6 feet per second. Computational modeling shows that overwash may generate velocities up to 5.0 feet per second, or a V/Vc ratio > 3.0. Hence, a V/Vc correction of 1.3 is also applied to account for additional scour that might occur with higher velocities that are much greater than critical velocity. The computational hydraulic analysis does not indicate that these velocities are likely. However, given the dynamic nature of the inlet, it is possible for high velocities to occur with overwash or shifting of the inlet.

Projected maximum scour depths are based on the flume results adjusted for angle of attack and high V/Vc ratios.

TOTAL SCOUR ESTIMATES

Introduction

Total scour is the combination of long term trends, contraction scour, and local or pier scour. For purposes of bridge construction, the replacement bridge is broken into five sections:

1. The North Overland Approach: Pier Bents 1 - 20
2. The North Span: Pier Bents 21 - 28
3. The Navigation Span: Pier Bents 29 - 43
4. The South Span: Pier Bents 44 - 48
5. The South Overland Approach: Piers Bents 49 and 50.

Typical total scour is computed below for each of the five sections.

Long Term Trends

Ambient Bed Elevation

The analysis of long term trends is made to determine the ambient bed elevations for the scour analysis. Contraction scour and pier scour are subtracted from the ambient bed elevation to determine the elevation of total scour. In selecting an ambient bed elevation, it is important to evaluate historical trends in the configuration of Oregon inlet. The ambient bed elevation should reflect the maximum expected depth of the bed near the bridge prior to lowering by contraction and pier scour.

Inlet Characteristics

The configuration of Oregon inlet is constantly changing. The long term pattern is for the inlet to narrow and deepen during periods of low storm activity, and to widen and shallow in response to storm surges. Historically, following this pattern, inlet widths have ranged from

TIP No. **B-2500** County: **DARE**
 Route **Road North/Bridge South Alternative**
 From **Rodanthe to South End of South Pond (Over Pamlico Sound)**
 Typical Section **New Loc 2-Ln (2-4') with 4' Pvd Shld**
 DB CONSTR. COST
\$270,000,000

Prepared By: Doug Lane 10/27/11
 Requested By: Victor Babour, PE 10/26/11

Line Item	Sec. No.	Description	Quantity	Unit	Price	Amount
		Clearing and Grabbing	1.0	Acre	\$ 30,000.00	\$ 30,000.00
		Earthwork				
		Unclassified Excavation	5,000	CY	\$ 10.00	\$ 30,000.00
		Borrow	33,050	CY	\$ 10.00	\$ 330,500.00
		Pavement Removal (Asphalt)	95,900	SY	\$ 3.00	\$ 287,700.00
		Drainage New Location				
		Three Lane with Curb & Gutter	0.09	Miles	\$ 300,000.00	\$ 27,000.00
		Two Lane with Paved Shldr	0.10	Miles	\$ 150,000.00	\$ 15,000.00
		Fine Grading	5,303	SY	\$ 3.00	\$ 15,909.00
		Pavement Widening	0	SY	\$ -	\$ -
		New Pavement (Full Depth)	3,800	SY	\$ 60.00	\$ 228,000.00
		Paved Shoulder (Partial Depth)	0	SY	\$ 25.00	\$ -
		Pavement Resurfacing	0	SY	\$ -	\$ -
		"A" Average Asphalt Wedging	0	SY	\$ -	\$ -
		Subgrade Stabilization	4,000	SY	\$ 7.00	\$ 28,000.00
		2-6" Concrete Curb and Gutter	855	LF	\$ 25.00	\$ 21,375.00
		Guardrail	1,200	LF	\$ 20.00	\$ 24,000.00
		Guardrail Anchors	8	Each	\$ 2,000.00	\$ 16,000.00
		Erosion Control	2.0	Acres	\$ 20,000.00	\$ 40,000.00
		New Traffic Signal (NC 12-New/Exist)	1	Each	\$ 80,000.00	\$ 80,000.00
		Traffic Control	1	LS	\$ 100,000.00	\$ 100,000.00
		Thermo and Markers				
		Three Lane with Curb & Gutter	0.09	Miles	\$ 25,000.00	\$ 2,250.00
		Two Lane with Paved Shldr	0.10	Miles	\$ 20,000.00	\$ 2,000.00
		Two Lane Structure with Shldr	7.00	Miles	\$ 20,000.00	\$ 140,000.00
		Structures				
		New Structure - Sound at Rodanthe	1,478,400	SF	\$ 100.00	\$ 147,840,000.00
		40' x 36,960' - Horiz. Curve over Water	1,108,800	SF	\$ 25.00	\$ 27,720,000.00
		Work Bridge Constr 30X 36,960'	60,000	SF	\$ 120.00	\$ 7,200,000.00
		Approach Structures				
		AASHTO Conc. Girders - 100' Spans				
		40' x 1,500' - Horiz. Curves over Land				
		Misc. & Mob (10% Strs&Util)				\$ 18,276,266.00
		Misc. & Mob (45% Functional)				\$ 647,000.00
		7.00 Miles				
		Contract Cost				\$ 203,121,000.00
		E. & C. 15%				\$ 30,879,000.00
		Conventional Construction Cost				\$ 234,000,000.00
		Design Build Factor (15.3%)				\$ 36,000,000.00
		Design Build Construction Cost				\$ 270,000,000.00

Outer Banks Chapter of the Surfrider Foundation
 P.O. Box 1276
 Kill Devil Hills, NC 27948
 252-202-8526
 john@shoshintech.com
 January 20, 2014
 Mr. Drew Joyner
 NCDOT
 Human Environment Section
 1598 Mail Service Center
 Raleigh, NC 27699-1598
 Dear Mr. Drew Joyner:

The Outer Banks Chapter of the Surfrider Foundation would like to provide input on Phase 1b of the Bonner Bridge Replacement Project concerning the two alternatives under consideration: "the Bridge within Existing NC 12 Easement Alternative" and "the Bridge on the New Location Alternative" on the north end of Rodanthe.

The Outer Banks Chapter of Surfrider has approximately 120 current members with many actively using the recreational surfing resource in the area known as S-Turns. We wish to provide our support for the Bridge on the New Location Alternative for the following reasons:

1. We believe that a bridge in the new location will have the lesser of impacts on recreational surfing in the long run versus a bridge in the existing NC 12 route.
2. We believe it most likely that an inlet will form at the location, regardless of where the bridge is placed and this will increase the possibility of additional structures and/or stabilizing systems if the existing NC 12 route is used for the new bridge.
3. We believe that in the long run, the environmental impacts of creating a new bridge in the Sound will be less than potential complications with a bridge along the current NC 12 route.
4. We believe that in the long run, the cost of maintaining a bridge avoiding this problematic area will be lower than placing a structure directly through it.
5. We believe that all attempts should be made to maintain access and at least maintain the current level of off-road parking at the recreational resource. Accounting for the fact that the surfing resources will continue to be utilized by surfers, no matter what alternative is chosen, will minimize future issues with access to the area and lessen the unintentional consequences for home owners in the area.
6. Ideally, all considerations should minimize the impact on local businesses and residents in the town of Rodanthe.
7. The Surfrider Foundation should be viewed as a resource for continued involvement during this entire process given its unique representation of a group of deeply concerned residents that

Mr. Drew Joyner
January 20, 2014
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frequently use the recreation resource of S-Turns and are very familiar with the access issues surrounding it.,

Ultimately, we support the alternative that decreases the continued threat of human intervention and best preserves that possibility of limiting impacts on this unique East Coast surfing resource. Although, the Route 12 Easement Alternative may appear to be the path of least resistance, the Outer Banks Chapter of the Surfrider Foundation believes that the New Bridge Location is a better choice for the surfing resource, the Town of Rodanthe and the State of North Carolina.

Sincerely,

John Wasniewski

Chairman, Outer Banks Chapter of the Surfrider Foundation

