

# Record of Decision

for

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

Federal-Aid No. BRNHF-0012(56)

NCDOT Project Definition: 32635  
TIP Project No. B-2500B  
Dare County, North Carolina

Federal Highway Administration  
North Carolina Department of Transportation

December 2016



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## 1.0 Decision

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This document records the decision for the proposed NC 12—Rodanthe Breach Long-Term Improvements (Bonner Bridge Replacement Project Phase IIb) in Dare County, North Carolina and re-affirms the Selected Alternative (Parallel Bridge Corridor with NC 12 Transportation Management Plan [PBC/TMP] Alternative) presented in the 2010 Record of Decision for the Bonner Bridge Replacement Project (B-2500). Bonner Bridge Replacement Project Phases I, IIa, and IIb are included in the North Carolina Department of Transportation’s (NCDOT) approved 2016 to 2025 State Transportation Improvement Program (STIP) under Project No. B-2500 with Phases IIa and IIb designated as transition projects A and B. The NC 12 – Rodanthe Breach Long-Term Improvements recorded in this document are designated in the STIP as transition project B of project B-2500 or B-2500B.

In accordance with the National Environmental Policy Act (NEPA) and the requirements set by the Council on Environmental Quality (CEQ) (40 CFR [Code of Federal Regulations] 1505.2), this Record of Decision (ROD) for Phase IIb also summarizes the following:

- Alternatives considered for the proposed project by NCDOT and the Federal Highway Administration (FHWA) and the basis for selection, description, cost estimates, and impacts of the Selected Alternative
- The Section 4(f) statement
- Measures adopted to avoid and minimize harm
- Monitoring and enforcement programs for the implementation of mitigation measures
- Public and agency comments on the May 2016 Revised Phase IIb Environmental Assessment (EA)

The replacement of Bonner Bridge over Oregon Inlet is Phase I of Project No. B-2500. Bonner Bridge, built in 1962, is at the end of its reasonable service life. Bonner Bridge is a part of NC 12 and provides the only highway connection between Hatteras Island and Bodie Island. The replacement structure currently under construction will serve the same function. It is scheduled to be open to traffic in 2018. The project also includes the NC 12 corridor between the community of Rodanthe and Oregon Inlet, a section of roadway that is at risk because of shoreline erosion (with potential for storm overwash and road loss), five locations considered geologically susceptible to breaching, and which experienced extensive damage as a result of Hurricane Irene in 2011 and Hurricane Sandy in 2012. Phase IIb consists of long-term improvements in the Rodanthe breach area. The entire Bonner Bridge Replacement Project (B-2500), including Phase IIb

as discussed in this Phase IIb ROD, will provide a long-term approach to minimizing the risk that NC 12 will be closed to traffic by natural coastal processes and weather events through 2060.

The Bonner Bridge Replacement Project (B-2500) project area is in Dare County in eastern North Carolina, and encompasses northern Hatteras Island, the southern end of Bodie Island, and regions of the Pamlico Sound. As set forth in the 2010 ROD, the Selected Alternative for the Bonner Bridge Replacement Project (B-2500) is the PBC/TMP Alternative (see Figure 1 for the PBC/TMP Alternative as defined in the 2010 ROD). The PBC/TMP Alternative calls for Phase I (Oregon Inlet bridge) to be built as soon as possible, followed by construction of later phases whose details would be determined, reevaluated, and documented through interagency collaboration as project area conditions warrant.

As shown in Figure 1, the Phase IIb project area includes the area between the Emergency Ferry Dock in Rodanthe to approximately 1.8 miles north of the Pea Island National Wildlife Refuge (Refuge) border. This area includes the Rodanthe breach that was opened by Hurricane Irene in August 2011, as well as the Rodanthe 'S' Curves Hot Spot and two other areas reported in the 2008 Final Environmental Impact Statement (FEIS) as geologically susceptible to breaches.

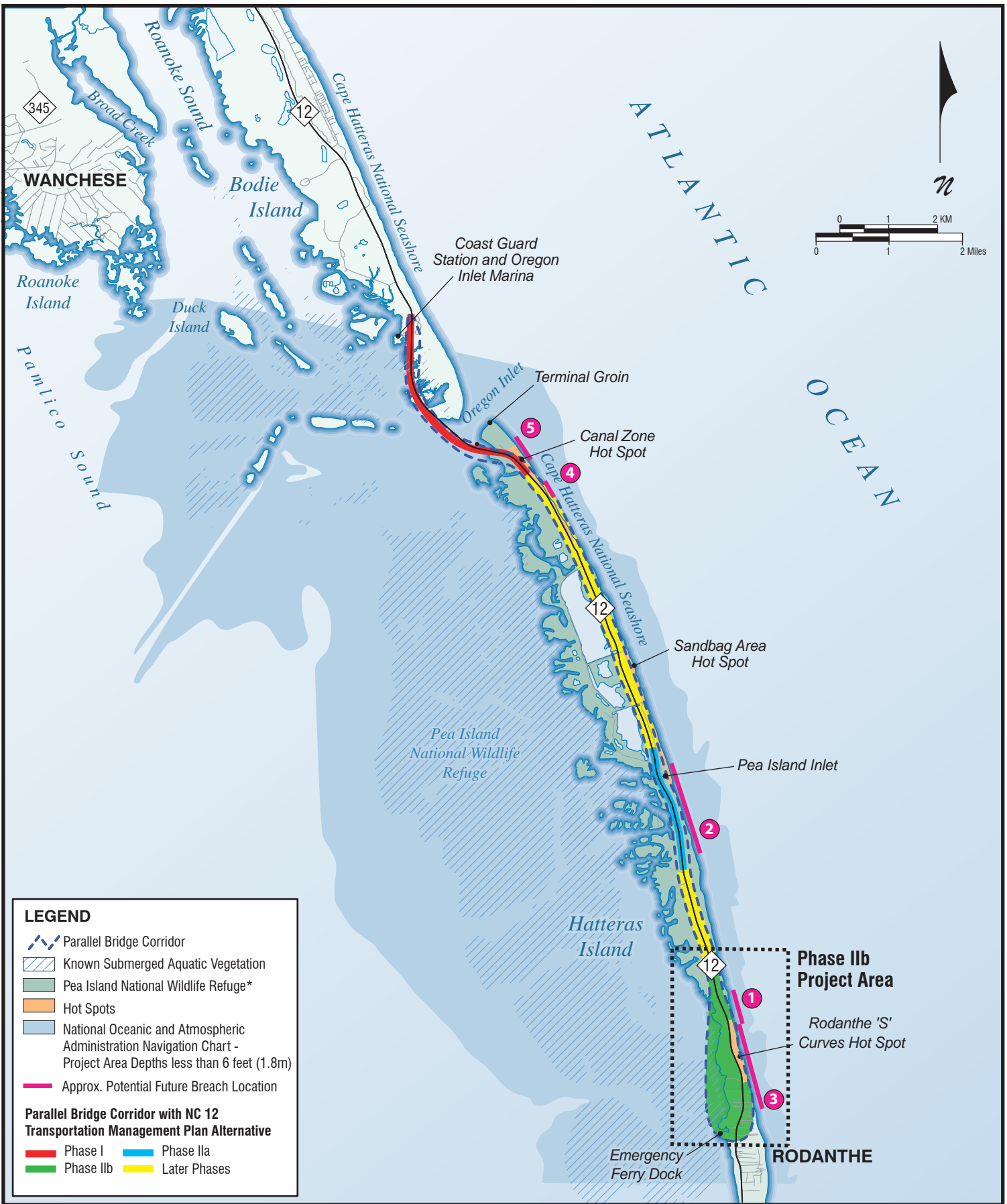
As documented in Section 1.2 of the 2008 FEIS, the purposes of the proposed Bonner Bridge Replacement Project (B-2500) are to:

- 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

The long-term improvements encompassed by Phase IIb contribute to the overall purpose of the project by providing a long-term solution to the future challenges of shoreline erosion and overwash in this area, as well as the potential presence of breaches and inlets in the Phase IIb project area.

A Phase IIb EA was released in December 2013. Its purpose was to identify and assess changes in the setting, project, and potential project impacts that may have occurred since the 2010 ROD was issued, and to provide documentation of compliance with NEPA for Phase IIb in accordance with the PBC/TMP Alternative (the Selected Alternative in the 2010 ROD). The 2013 Phase IIb EA identified the Bridge within Existing NC 12 Easement Alternative as the Preferred Alternative.





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

Figure  
1

The May 2016 Revised Phase IIb EA was prepared to present updates in the project setting, project alternatives, and impact findings that have occurred since the 2013 Phase IIb EA. Updates to project alternatives included two additional alignments for the Bridge on New Location Alternative. One of those two alternatives, the 2014B Bridge on New Location Alternative was identified as the new Preferred Alternative, and is identified in this ROD as FHWA's Selected Alternative for Phase IIb as shown in Figure 2.

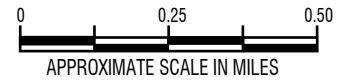
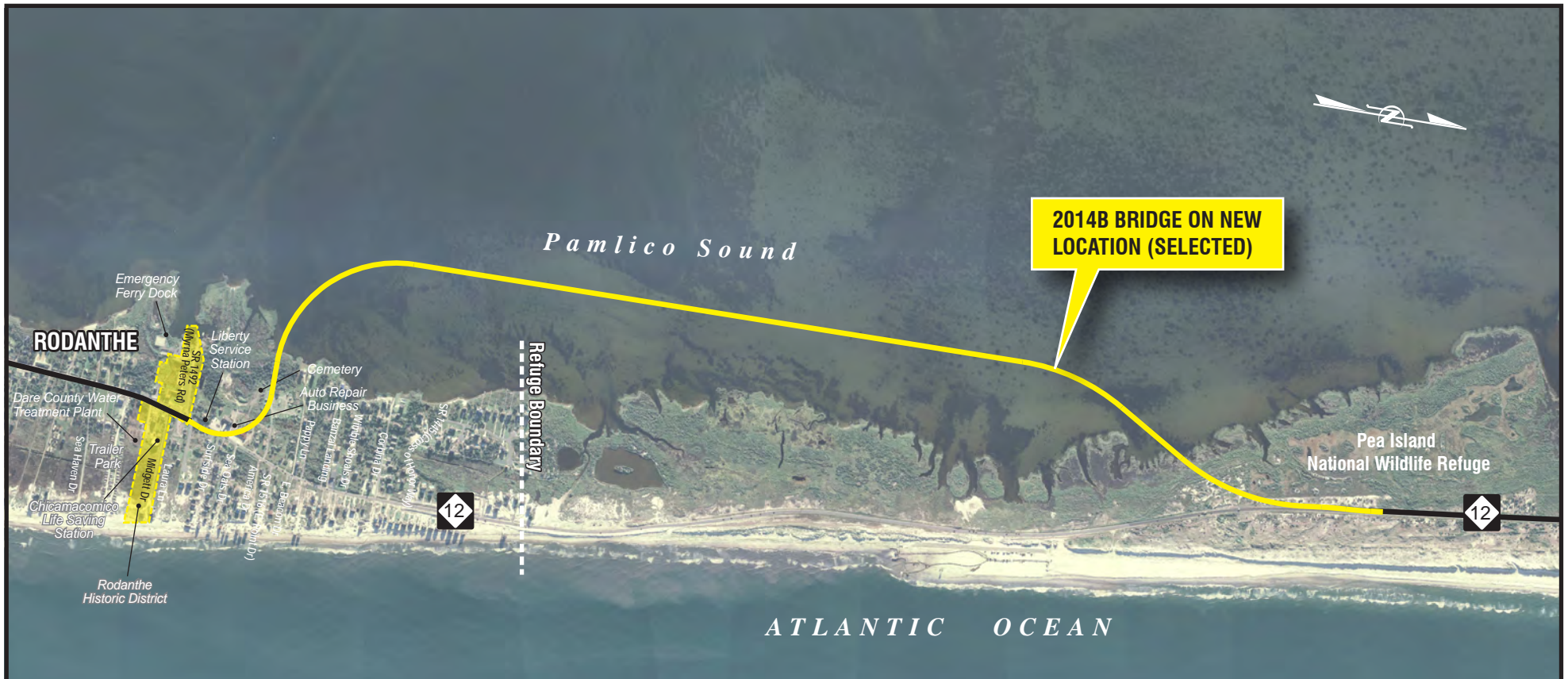
Updates since the 2010 ROD was issued on December 20, 2010 were presented in the Revised Phase IIb EA. The Revised Phase IIb EA also acknowledged an April 30, 2015 litigation settlement agreement between FHWA, NCDOT, North Carolina Department of Environmental Quality, Division of Coastal Management (NCDEQ-DCM)<sup>1</sup>, and the Defenders of Wildlife and National Wildlife Refuge Association.

In making the Phase IIb Selected Alternative decision, NCDOT and FHWA considered the information and analysis presented in the 2013 Phase IIb EA and the 2016 Revised Phase IIb EA, as well as public, agency, and non-governmental organization (NGO) comments on the 2013 Phase IIb EA and the Revised Phase IIb EA. Findings contained in the 2005 Supplemental Draft Environmental Impact Statement (SDEIS), the 2007 Supplement to the Supplemental Draft Environmental Impact Statement (SSDEIS), the 2008 FEIS, the May 2010 EA, and the 2010 ROD for the Bonner Bridge Replacement Project (B-2500) also were considered. Environmental resource and regulatory agency participation was done in the context of a NEPA/Section 404 Merger Process. The Merger Process is a streamlining effort developed to efficiently integrate the permitting process through participation of federal and state environmental resource and regulatory agencies as part of the Merger Team. The Merger Team meets periodically in a series of concurrence points throughout the project planning process with the goal of obtaining stakeholder concurrence on key issues during the NEPA study so that those decisions do not need to be revisited during the application for a US Army Corps of Engineers (USACE) Clean Water Act Section 404 permit. More detailed information about the Merger Process is found in Section 3.2.

As per the description for "later phases" of the PBC/TMP Alternative presented in Section 3.3.2 of the 2010 ROD (beginning on page 12), findings of the on-going coastal monitoring program that began in 2011 were considered. The NEPA/Section 404 Merger Process was used to select the detailed study alternatives, to select the Least Environmentally Damaging Practicable Alternative (LEDPA), and to identify and select

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<sup>1</sup> At the time of this agreement NCDEQ was called the North Carolina Department of Environment and Natural Resources.



 2014B Bridge on New Location (Selected)

Aerial date: 2014

**SELECTED ALTERNATIVE**

Figure  
2

measures to minimize harm for Phase IIb. Formal consultation was re-initiated and completed under Section 7 of the Endangered Species Act, and the State Historic Preservation Officer (SHPO) was consulted under the principles and stipulations of the 2010 Programmatic Agreement (PA), as amended in 2013, prepared per the requirements of Section 106 of the Historic Preservation Act of 1966.

A complete description of the anticipated impacts for the Phase IIb Selected Alternative is included in the Revised Phase IIb EA. These impacts with updates also are summarized in Section 3.5 of this document.

The 2014B Bridge on New Location Alternative is selected for implementation as Phase IIb of the Bonner Bridge Replacement Project (B-2500) and is therefore referred to as the Selected Alternative in the balance of this ROD. The entire alternative selected for implementation for the Bonner Bridge Replacement Project (B-2500) is referred to as the PBC/TMP Alternative, as stated in the 2010 ROD.

## **2.0** Project History

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Section 2.0 of the 2010 ROD describes the following environmental documents generated over the history of the Bonner Bridge Replacement Project (B-2500) through December 2010:

- 1993 Draft Environmental Impact Statement
- 2005 Supplemental Draft Environmental Impact Statement
- 2007 Supplement to the 2005 Supplemental Draft Environmental Impact Statement
- 2008 Final Environmental Impact Statement
- 2010 Environmental Assessment

Section 2.0 of the 2013 ROD for NC 12 – Pea Island Long-Term Improvements Bonner Bridge Replacement Project Phase IIa (B-2500A) describes the following environmental documents generated over the history of the Bonner Bridge Replacement Project (B-2500) through February 2013:

- 2010 ROD
- 2013 Phase IIa EA

Subsequent environmental documentation prepared for the project includes the 2013 Phase IIa ROD, as well as a 2013 Phase IIb EA, a 2015 Phase IIa Construction Consultation, and the 2016 Phase IIb Revised EA. These documents are described below.

## **2.1 2013 Phase IIa Record of Decision**

The 2013 Phase IIa ROD was signed by FHWA on October 7, 2013. The 2013 Phase IIa ROD identified the Bridge within Existing NC 12 Easement Alternative as the Selected Alternative for the Bonner Bridge Replacement Project NC 12 – Pea Island Long-Term Improvements Bonner Bridge Replacement Project (B-2500A), and summarized its selection process from among the alternatives considered. The Section 4(f) statement concluded that based on the Section 4(f) re-evaluation presented in the Phase IIa EA (Section 5.0), as well as the findings of the 2009 Revised 4(f) Evaluation, the PBC/TMP Alternative for the Bonner Bridge Replacement Project (B-2500) is the alternative that causes the least overall harm and the Selected Alternative (PBC/TMP Alternative) for the Bonner Bridge Replacement Project (B-2500) remained valid and did not need to be reconsidered. There are no prudent and feasible alternatives to avoid the use of the Refuge. It also concluded that the PBC/TMP Alternative (including the Phase IIa Selected Alternative) causes the least overall harm and the PBC/TMP Alternative (including the Phase IIa Selected Alternative) includes all possible measures to minimize harm. The 2013 Phase IIa ROD also included plans for the ongoing monitoring and enforcement program, corrections to the 2013 Phase IIa EA, responses to comments on the 2013 Phase IIa EA, the 2013 amendment to the Section 106 Programmatic Agreement (PA), and the next steps in the project process.

## **2.2 2013 Phase IIb EA**

The 2013 Phase IIb EA was released in December 2013 for public and agency comment. It described the Phase IIb alternatives analysis, the Phase IIb detailed study alternatives (including a Preferred Alternative), updated the impact assessment presented in the 2008 FEIS and 2010 EA, updated the revised Final Section 4(f) Evaluation presented in the 2010 EA, described public and agency meetings conducted as a part of Phase II studies, and reached a tentative conclusion on whether a Phase IIb Supplemental EIS was needed. It listed the Bridge within Existing NC 12 Easement Alternative as the Preferred Alternative.

## **2.3 2015 Phase IIa 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 following Hurricane Irene. The temporary bridge is a prefabricated steel superstructure. It was not designed for long-term use, but had an estimated 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,.

In 2015, a construction consultation report was prepared by NCDOT for FHWA regarding the inclusion in Phase IIa of the interim bridge to replace the temporary bridge built over the Pea Island breach. 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 the 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.

## **2.4 2016 Revised Phase IIb Environmental Assessment**

The Revised Phase IIb EA, signed in May 2016 by NCDOT and FHWA, amended the 2013 Phase IIb EA. It assessed changes in the setting, project, and potential project impacts that might have occurred since the 2010 ROD and the 2013 Phase IIb EA. In addition to documenting these changes, the Revised Phase IIb EA documented the selection of a new Preferred Alternative for the Phase IIb project area (now the Selected Alternative). Updates to the 2013 Phase IIb EA included the following:

- A description of the public hearings held in January 2014 for the alternatives presented in the 2013 Phase IIb EA.
- The development of two new alignments for the Bridge on New Location Alternative and a detailed description of those alignments.
- On-going and additional new studies since the 2013 Phase IIb EA.
- Identification of the 2014B Bridge on New Location Alternative 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 and a description of the impacts of the detailed study alternatives.
- An update of the Section 4(f) Evaluation for Phase IIb, including the least harm analysis.

- An update of the comments and coordination section, including responses to written comments received from non-governmental organizations, local government, and federal and state agencies on the findings of the 2013 Phase IIb EA. Some of the changes in the Revised Phase IIb EA were in response to comments made on the 2013 Phase IIb EA.
- A revised analysis of and preliminary conclusion on whether or not there is a need to prepare a Supplemental FEIS.

## **3.0 Alternatives Considered**

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Section 3.0 of the 2010 ROD describes the eight alternatives analyzed in detail for the 2008 FEIS and 2010 EA. These eight alternatives fall into one of two corridors – the Pamlico Sound Bridge Corridor or the Parallel Bridge Corridor. The two Pamlico Sound Bridge Corridor alternatives were dropped from detailed study. The following six Parallel Bridge Corridor alternatives were considered:

- With Nourishment
- With Road North/Bridge South
- With All Bridge
- With Phased Approach/Rodanthe Bridge
- With Phased Approach/Rodanthe Nourishment
- With NC 12 Transportation Management Plan (PBC/TMP)

The PBC/TMP Alternative was chosen as the Selected Alternative in the 2010 ROD and is described in Section 3.3 of that document. The PBC/TMP Alternative includes future phases, such as Phase IIb, as part of its NC 12 Transportation Management Plan component. The impacts of all of the Parallel Bridge Corridor alternatives were documented to consider the reasonably foreseeable range of impacts that could result from the implementation of future phases of B-2500 (See 2010 ROD, Table 1).

### **3.1 Phase IIb Alternatives Considered**

#### **3.1.1 *Parallel Bridge Corridor with NC 12 Transportation Management Plan Alternatives Considered***

Four alternatives were considered for the Phase IIb project area that 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

reported in the 2008 FEIS for this study area as geologically susceptible to breaches (see Figure 3). The four alternatives considered for study in the Phase IIb project area are:

1. Beach Nourishment

The Beach Nourishment Alternative would keep NC 12 in its current location and use beach nourishment and dune enhancement to maintain an adequate protective beach and dune system. Nourishment likely would be repeated at four-year intervals, with dune rebuilding at 12-year intervals.

This alternative was eliminated from detailed study by the Merger Team 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; 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. The October 2011 Peer Exchange coastal expert panel recommended 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. Even though, incorporation of recent shoreline trends into shoreline modeling has moved the 2060 high-erosion shoreline in Rodanthe to one closer to that of the rest of the Phase IIb project area, erosion rates remain high compared to the rest of Hatteras Island.

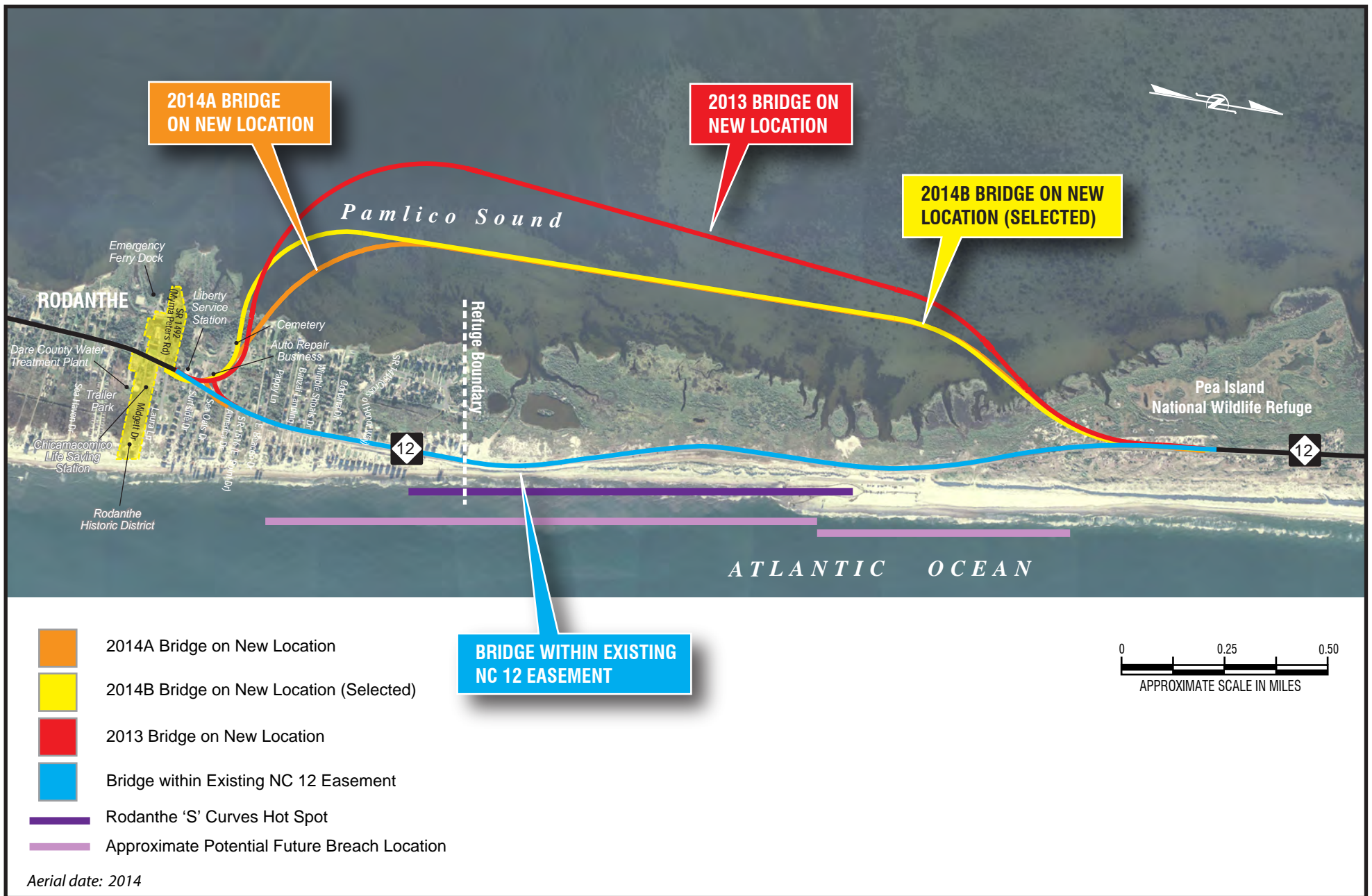
2. Bridge on New Location (from Road North/Bridge South Alternative)

The Bridge on New Location Alternative that was selected as a detailed study alternative by the Merger Team 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, 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. By removing the NC 12 surface roadway from a portion of the Refuge, natural coastal processes would be allowed to resume in that area, which is consistent with the Refuge management strategy presented in the Refuge's Comprehensive Conservation Plan (USFWS, 2006).<sup>2</sup>

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<sup>2</sup> US Fish and Wildlife Service (USFWS). 2006. *Pea Island National Wildlife Refuge Comprehensive Conservation Plan*.





# PHASE IIb DETAILED STUDY ALTERNATIVES

Figure  
3

Three alignments within the Bridge on New Location Alternative corridor were assessed in the 2016 Revised EA. They are:

- 2013 Bridge on New Location Alignment
- 2014A Bridge on New Location Alignment
- 2014B Bridge on New Location Alignment

They differ in their location within Pamlico Sound, as shown in Figure 3. The 2013 alignment was the original alignment assessed in the 2013 Phase IIb EA. The other two alignments were developed in 2014 in order to minimize impacts to dense submerged aquatic vegetation (SAV) beds in response to comments from federal and state environmental resource and regulatory agencies. SAVs, a specific Habitat of Particular Concern (HAPC) of Essential Fish Habitat (EFH), provide spaces and natural resources for fish to spawn, breed, feed or grow to maturity.

This alternative with the 2014B alignment was selected by the project's NEPA/Section 404 Merger Team as the LEDPA and as the Preferred Alternative (now the Selected Alternative) for reasons described in Section 3.2.

3. Bridge within Existing NC 12 Easement (Part of Phase II of Phased Approach Alternative/Rodanthe Bridge Alternative)

The Bridge within Existing NC 12 Easement was selected as a detailed study alternative by the Merger Team in 2012 and involves building a bridge in the existing NC 12 easement approximately 2.3 miles in length to replace the existing surface road. The total approximate length of Phase IIb (including approaches) is 2.5 miles. 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, and it would not require a change in the existing NC 12 easement within the Refuge.

4. Bridge within Existing NC 12 Easement and Beach Nourishment (Part of Phase II of Phased Approach Alternative/Rodanthe Nourishment Alternative)

This alternative was eliminated from detailed study by the Merger Team 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.

### **3.1.2 Other Alternatives Considered**

Several other alternatives were considered in addition to those listed above. These are:

1. Pamlico Sound Bridge Corridor – A proposed bridge through Pamlico Sound (located as far as 5 miles to the west of Hatteras Island) approximately 17.5 miles in length. This alternative was eliminated as a detailed study alternative in the 2010 EA because of funding constraints.
2. Ferry Alternative – Although considered by NCDOT and FHWA, the Ferry Alternative was not selected as a detailed study alternative because it would result in a decrease in the present level of traffic service across Oregon Inlet, would require extensive dredging (causing substantial impacts to SAVs), and would be substantially more expensive than a bridge alternative.
3. Bridge from Rodanthe to Either Stumpy Point or Roanoke Island – A bridge with an endpoint at Stumpy Point (the mainland) as well as a bridge from Roanoke Island to Rodanthe was examined during the Final Section 4(f) Evaluation presented in the 2008 FEIS. Neither of these bridging options was determined to be a reasonable alternative.
4. Seven-Mile Bridge Alternative – A Seven-Mile Bridge Alternative from north of the Pea Island inlet through the Pamlico Sound and ending in Rodanthe was not selected as a detailed study alternative because it was determined to be cost-prohibitive and because of impacts to SAV in Pamlico Sound.

See Section 3.1.2 of the October 2013 Phase IIa ROD for additional detail related to why these alternatives were not studied in detail.

### **3.2 Phase IIb Basis for Choosing the Selected Alternative**

The Selected Alternative from the 2010 ROD specified an alignment for a Phase I bridge and addressed the study and selection of future phases through a comprehensive NC 12 Transportation Management Plan (TMP), which explained that the study, selection, and finalizing of future phases would follow the provisions of the NEPA/Section 404 Merger Process (see the 2010 ROD Section 3.3.2). In evaluating alternatives for Phase IIb, FHWA and NCDOT carried out this commitment by following the Merger Process.

The Merger Team process is designed to streamline environmental review by bringing stakeholder agencies together to conduct NEPA and Section 404 review simultaneously. “The process is conducted under the concept of ‘concurrence’ with a project team organization. Concurrence implies that each team member and the agency they represent does not object to decisions made at strategic points in the project development process and in doing so ‘pledges’ to abide by the decision made unless there is a profound changed condition. The USACE, North Carolina Department of

Environmental Quality (NCDEQ), NCDOT, and FHWA jointly lead the project team.<sup>3</sup> Concurrence points are defining points in the NEPA project development and Section 404 permitting process.”<sup>4</sup> At each concurrence point, Merger Team member agencies have the option to concur with the decision, abstain, or non-concur (object) to the decision. Abstention means the agency does not actively object to allowing the process to move forward and agrees not to revisit the decision, though it does not sign the concurrence form.

There are four (4) primary concurrence points during the Merger Process:<sup>5</sup>

1. The Merger Team determines the project’s purpose and need.
2. The Merger Team reviews alternatives and decides which ones to carry forward.
3. The Merger Team selects the LEDPA.
4. The Merger Team identifies ways to avoid and minimize impacts associated with the LEDPA.

The Selected Alternative for Phase IIb considered the decisions made through the Merger Process, thus fulfilling the commitment made in the 2010 ROD. Each individual state and federal entity comprising the Merger Team independently concurred that the LEDPA for Phase IIb was the 2014B Bridge on New Location Alternative. All members of the Merger Team signed the Concurrence Point 3 (CP3) concurrence form. 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 NCDEQ-DWR also concurred, but noted that stormwater runoff mitigation should be addressed during the permit process. The National Marine Fisheries Service (NMFS) concurred with the understanding that the SAV and essential fish habitat (EFH) impact

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<sup>3</sup> The current Merger Team members are: NCDOT; FHWA; USACE; US Environmental Protection Agency (USEPA); USFWS (Raleigh Office); USFWS (Pea Island National Wildlife Refuge); National Marine Fisheries Service (NMFS); National Park Service (NPS)-Cape Hatteras National Seashore; North Carolina Department of Environmental Quality (NCDEQ)- Division of Coastal Management (DCM); NCDEQ-Division of Water Resources (DWR); North Carolina Wildlife Resources Commission (NCWRC); North Carolina Department of Natural and Cultural Resources (NCDNCR); and the Albemarle Rural Planning Organization (RPO). The US Coast Guard (USCG) is not a signing team member, but is sent information before and following all NEPA/Section 404 Merger Team meetings.

<sup>4</sup> Memorandum of Understanding: Section 404 of the Clean Water Act and National Environmental Policy Act, revised May 16, 2012, page 2.

<sup>5</sup> See Memorandum of Understanding: Section 404 of the Clean Water Act and National Environmental Policy Act, revised May 16, 2012, page 4-5, for a description of all Concurrence Points, including subpoints.

had been minimized for the Bridge on New Location Alternative, and the remaining SAV impacts would be mitigated. As a result, the LEDPA also is FHWA's and NCDOT's Selected Alternative in this Phase IIb ROD.

The decision to identify the 2014B Bridge on New Location Alternative as the Selected Alternative also considered public review comments on the 2013 Phase IIb EA (which identified NCDOT's Preferred Alternative as the Bridge within Existing NC 12 Easement Alternative) and on the Revised Phase IIb EA, 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, the 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 and Revised Phase IIb EA. The concurrence forms are included in Appendix A of the Revised Phase IIb EA.

The reasons for the selection of the 2014B Bridge on New Location Alternative are:

- It minimizes impacts and harm to the Refuge.
- It bypasses the eroding shoreline, including the 'S' Curves Hot Spot, and bypasses the entire area considered geologically susceptible to breaches in the Rodanthe area (see Figure 3), maximizing the long-term reliability of NC 12 in the project area.
- It avoids notable community impacts along NC 12 and future ocean recreational activity impacts associated with the Bridge within Existing NC 12 Easement Alternative. FHWA and NCDOT acknowledge that it brings NC 12 traffic adjacent to homes along Pappy Lane, introduces a bridge into the view of Pamlico Sound, and impacts recreational activities in Pamlico Sound. However, it would provide more reliable accessibility on NC 12 that would benefit Hatteras Island, Ocracoke Island, Dare County, and the entirety of North Carolina.
- In Pamlico Sound, the 2014B alignment would minimize impacts to dense beds of SAV. Minimized impacts to dense SAV beds would have occurred with the 2014A alignment but would have resulted in two additional home displacements. The 2014B alignment is approximately 1,000 feet closer to homes fronting on Pamlico Sound than the 2013 alignment, increasing the intensity of associated visual and recreational impacts. However, the 2013 alignment impacts more dense SAV beds than the other two new location options. SAV is identified as a specific Habitat of Particular Concern (HAPC) of EFH. Denser SAV offers more cover and food resources compared to patchy SAV for the same area. SAV is important spawning, breeding, feeding, and refuge habitat for a variety of fish and other aquatic wildlife.

In addition to providing nursery functions, SAV provides oxygen, absorbs wave energy, and has the ability to uptake nutrients and export carbon, nitrogen, and phosphorous to coastal food webs.

- It takes 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.
- It takes into consideration the views and preferences of official(s) with jurisdiction over the management of the Refuge, 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. Refuge officials indicated that a Bridge on New Location Alternative would have the least harm to the Refuge per Section 4(f) of the Department of Transportation Act of 1966 as amended.
- It was selected by the project's NEPA/Section 404 Merger Team as the LEDPA because it would minimize impacts to the Refuge, the ocean shoreline/beach, the Rodanthe community (including residential relocations), and SAV.

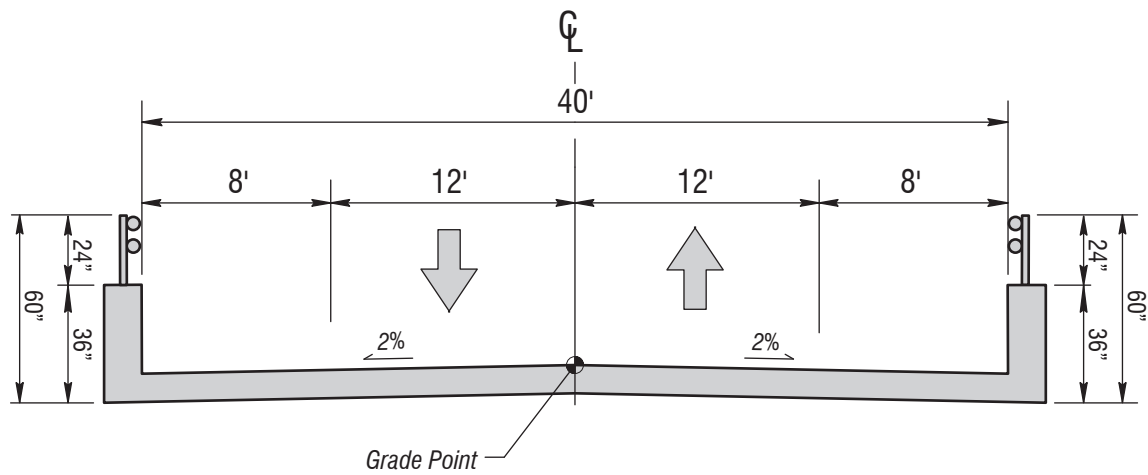
### **3.3 Description of the Phase IIb Selected Alternative**

The Phase IIb Selected Alternative, the 2014B Bridge on New Location (see Figure 2) 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.

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. The Selected Alternative would re-join NC 12 just north of the Liberty Service Station/Island Convenience Store. 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 Selected 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 that experiences high erosion rates.

The Selected Alternative has the following characteristics:

- Two 12-foot lanes with 8-foot shoulders on the bridge, similar to Phase I of the Bonner Bridge Replacement Project (B-2500) (See Figure 4). The same would be true



**PHASE IIb BRIDGE TYPICAL SECTION**

Figure  
4

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 retaining fill 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 Selected Alternative in Rodanthe and the Refuge boundary would be retained and maintained by NCDOT as a local road serving adjacent development. NCDOT would maintain this section of road until, because of shoreline change, it is no longer reasonable and feasible to do so. This section of 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 the Selected 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). 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 (rock) 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.

### 3.4 Cost Estimate for the Phase IIb Selected Alternative

The Phase IIb Selected Alternative will cost between \$179.2 million and \$198.2 million. (See Table 1.)

**Table 1. Phase IIb Selected Alternative Cost**

Type of Cost	Low	High
Construction	\$174,400,000	\$193,400,000
Right-of-Way	\$4,175,000	
Utilities <sup>1</sup>	\$688,455	
<b>TOTAL</b>	<b>\$179,263,455</b>	<b>\$198,263,455</b>

<sup>1</sup>NCDOT 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.

Phase IIb would primarily be funded through existing federal and state funding sources available to transportation projects and allocated to NCDOT Division 1 in the 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 this project may be eligible for reimbursement under federal Emergency Relief<sup>6</sup> (ER) funding; however, this funding is provided through a reimbursement process and is not necessarily a guaranteed funding source. The amount of ER funding available for Phase IIb will depend upon the scope of the project as compared to the original damage as a result of the storm.

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<sup>6</sup> 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).

## 3.5 Summary of Impacts for the Phase IIb Selected Alternative

### 3.5.1 Phase IIb Selected Alternative Impacts

The Revised Phase IIb EA updated the impact discussions presented in Chapter 4 of the 2008 FEIS and Section 2.3.3 of the 2010 EA that were the basis for the identification of the Parallel Bridge Corridor with NC 12 Transportation Management Plan (PBC/TMP) Alternative as the Selected Alternative for the Bonner Bridge Replacement Project

(B-2500) in the 2010 ROD for the project. Phase IIb is one part of this project. The characteristics of the Phase IIb Selected Alternative are similar to what was defined in the 2008 FEIS and 2010 ROD as the Bridge South component of the Road North/Bridge South. The location of the Bridge South alignment is compared to the alignment of the Selected Alternative in Figure 5. Changes in impacts are associated with minor changes in the characteristics of the project area and refinements to the designs of the detailed study alternatives. 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, 2010 EA, and 2010 ROD. This section addresses changes in the following types of direct impacts for the Selected Alternative:

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

#### Community Impacts

Table 1 of the 2010 ROD identified the Bridge South component of the Road North/Bridge South Alternative as having two residential relocations and five business relocations. The Selected Alternative also would require relocation of two residences and five businesses. The Revised Phase IIb EA identified four business relocations but as a result of the public hearing comment period, a fifth business was identified. Thus, there have been no changes in relocations since the 2010 ROD.

As with the findings of the 2010 ROD, no graves would be affected in the cemetery within the project area.



**SELECTED ALTERNATIVE AND "BRIDGE SOUTH" FROM 2010 EA**

**Figure  
5**

### Visual Impacts

Section 4.3.1.2 of the 2008 FEIS indicated the Bridge South Component of the Road North/Bridge South 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, including sunset views. This impact is affirmed in Table 1 of the 2010 ROD. As shown in Figure 5, in the Rodanthe area, the Selected Alternative is in nearly the identical location of the 2010 Bridge South. Thus, visual impacts of the Selected Alternative do not represent significant new impacts.

### Cultural Resource Impacts

The cultural resources impacts, documented in the 2008 FEIS, 2010 EA, and Table 1 of the 2010 ROD for the Bridge South Component of the Road North/Bridge South Alternative remain generally unchanged. The Adverse Effect of Selected Alternative would be the visual impact on the historic landscape of the Refuge and loss of access to Refuge features (Section 4.4.1.2 of the 2008 FEIS). The bridge in the Refuge would be a sizable new, elevated, linear, man-made feature. The Selected Alternative's bridge would be within the Refuge for approximately 0.4 mile.

As indicated in Table 1 of the 2010 ROD, the Selected Alternative would have No Adverse Effect on the Rodanthe Historic District and Chicamacomico Life Saving Station. Although the Selected Alternative would be within the view of the resources, this view also includes modern commercial and residential structures.

An underwater archaeological survey of the Phase IIb project area was completed in July 2016 (Panamerican Consultants, Inc., 2016)<sup>7</sup>. The survey affirmed the Selected Alternative would cross the southern limits of the remains of a large iron vessel (referred to as the "Pappy Lane Wreck") that are in Pamlico Sound immediately west of Rodanthe. The survey utilized a magnetometer, sidescan sonar, and subbottom profiler. Twenty-four anomalies and one sonar target were recorded in the Bridge on New Location Alternative survey area. With the exception of the Pappy Lane Wreck, no potentially significant anomaly or target was observed in the data. Furthermore, a review of the subbottom data did not detect any buried paleofeatures that would have the potential to contain submerged prehistoric sites. The report recommended the Pappy Lane Wreck as eligible for listing on the National Register of Historic Places and indicated that avoidance of the resource would be accomplished by spanning the wreck

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<sup>7</sup> Panamerican Consultants, Inc. July 2016. *Report of Findings, Underwater Archaeology Survey and Diver Assessment/Evaluation for Future Extension Concept/2014B Revised Bridge on New Location, Bonner Bridge Project, Dare County, North Carolina [Draft]*. Prepared for the North Carolina Department of Transportation.

so that no piers would be placed within the body of the wreck. The National Register-eligibility recommendation was made under Criterion D: “that have yielded, or may be likely to yield, information important in prehistory or history.” The report and its findings were sent to Underwater Archaeology Branch of the Office of State Archaeology for review and approval. Pursuant to the National Historic Preservation Act and the Advisory Council on Historic Preservation’s Regulations for Compliance with Section 106 codified at 36 CFR Part 800, the Office of State Archaeology concurred in an October 27, 2016 memorandum (see Appendix D) with the National Register – eligibility recommendation. Based on the magnetic contour map contained in the report, the Office of State Archaeology recommended that at least a 100-meter (328-foot) buffer area surrounding the visible portions of the wreck be established where no disturbance from bridge structure installation or work vessel mooring would take place. Given that the Selected Alternative passes over the wreck, although no piers were planned to be placed within the body of the wreck, the recommendation of the Office of Archaeology cannot be met. The wreck does not warrant preservation in place. Therefore, FHWA and NCDOT will develop a data recovery program for approval by SHPO in accordance with the stipulations of the PA. With the implementation of data recovery, there would be no Section 4(f) resource use associated with the wreck.

#### *Parks and Recreational Impacts*

The parks and recreation resource impact of the Selected Alternative do not represent significant new impacts. These impacts were documented in the 2008 FEIS, 2010 EA, and Table 1 of the 2010 ROD, and those of the 2010 Bridge South component the Road North/Bridge South Alternative did not substantially change with the design refinements associated with the Selected Alternative.

Land Use. Like the 2010 Bridge South, the Selected Alternative would affect land from the Refuge. The Selected Alternative would require 2.79 acres of new permanent NC 12 easement, however, it would return 19.27 acres of existing NC 12 easement to the Refuge to be restored. The new alignment would require a 0.63 acre temporary construction easement in the Refuge for a temporary traffic maintenance road to take traffic around the proposed bridge approach. During the development of the Phase IIb Bridge on New Location Alternative alignments, including the Selected Alternative, the 2010 Bridge South alignment was adjusted to enter the Refuge at a steeper angle (as shown in Figure 5), which reduced the use of Refuge lands for new NC 12 easement. A letter from the Refuge dated July 22, 2013 indicated that a use of Refuge land by 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.

Recreational Use. Like the 2010 Bridge South, as documented in Section 4.5.4 of the 2008 FEIS, the Selected 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. As shown in Figure 5, the area of the sound affected

by the Selected Alternative is similar to the 2010 Bridge South. There are no businesses serving these types of activities along the shoreline within the area affected. The shoreline is lined with vacation rental cottages that often rent to persons who conduct water sports in the sound. Public roads that end at the sound are used as public access points to the sound.

#### Natural Systems Impacts

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

Surface Waters and Water Quality. As discussed in Section 4.7.2 of the 2008 FEIS, the Selected Alternative, like the 2010 Bridge South, would be built over water in Pamlico Sound; therefore, direct water quality impacts during construction would occur. 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. Impacts would be minimized by not dredging during bridge construction and by containing pile jetting spoil.

Biotic Communities. As discussed in Section 4.7.2 of the 2008 FEIS, the Selected Alternative, like the 2010 Bridge South, biotic communities in the project area would be impacted permanently and temporarily as a result of project construction. With the Selected Alternative and 2010 Bridge South, most of the permanent impacts to biotic communities would occur outside of the existing NC 12 easement. Compared with the Bridge South, the Selected Alternative is over water for a longer distance and over land for a shorter distance. The total length is unchanged. This was done to minimize the use of Refuge land for new easement. The types of biotic community impacts are unchanged.

The Selected Alternative would permanently impact by fill and piles 3.63 acres of biotic communities and would shade an additional 12.51 acres (correction from the 9.55 acres in the Revised Phase IIb EA). 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 6.61 acres. The larger fill and pile impact would reduce the shading impact to 9.55 acres (correction from the 12.51 acres in the Revised Phase IIb EA).

Of the permanent fill and pile impact of 3.63 acres, approximately 85 percent (3.10 acres) would occur in man-dominated areas and approximately 3 percent (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.

Wetlands and Open Water Habitat. The Selected Alternative would permanently fill 0.41 acres of wetlands. The 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. This impact is at the southern terminus of the Selected Alternative, which is in the same location as the 2010 Bridge South.

Depending on whether the pile caps are just under the bridge spans (lower impact) or placed at ground level, Coastal Area Management Act (CAMA) wetland impacts with the Selected Alternative would be less than 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 0.15 acre to 0.16 acre. There are no temporary impacts to wetlands, including CAMA wetlands, currently proposed. CAMA wetlands also were bridged with the 2010 Bridge South.

Open water pile impacts with the Selected Alternative would be 0.10 acre to 2.70 acres, depending on whether the pile caps are just under the bridge spans (lower impact) or placed at water level. 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 7.92 acre to 10.50 acres. There also were open water pile impacts with the 2010 Bridge South.

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) and the 2008 BA, as well as a 2013 technical report on the Atlantic sturgeon (CZR, Incorporated, 2013)<sup>8</sup> and a 2014

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<sup>8</sup> CZR, Incorporated. 2013. *Technical Memorandum on the Effects of Parallel Bridge Corridor with NC 12 Transportation Management Plan Alternative for NC 12 Replacement of Herbert C. Bonner Bridge (Bridge No. 11) over Oregon Inlet on Atlantic Sturgeon (Acipenser oxyrinchus oxyrinchus)*. Prepared for the North Carolina Department of Transportation.

technical report on the rufa red knot (FHWA and NCDOT, 2014).<sup>9</sup> Updated information for Phase IIa was presented in a 2013 technical report (FHWA and NCDOT, 2013)<sup>10</sup>, and a technical report was prepared in 2016 for Phase IIb (FHWA and NCDOT, 2016).<sup>11</sup>

In regard to land species, two additional species were listed as protected since the release of the 2010 ROD, the rufa red knot (*Calidris canutus rufa*) and northern long-eared bat (*Myotis septentrionalis*). The biological conclusion for the rufa red knot was May Affect, Likely to Adversely Affect. NCDOT has agreed to implement the non-discretionary measures to mitigate the potential affect as contained in a 2015 amended Biological and Conferences Opinion issued by USFWS. These measures, and the agreed upon mitigation for all affected protected species, are presented in the Project Commitments contained in Appendix A. The Programmatic Biological Opinion for the northern long-eared bat for the entire NCDOT program in Divisions 1 to 8 is May Affect, Likely to Adversely Affect. The Programmatic Biological Opinion 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. The USFWS affirmed in an October 26, 2016 letter (see Appendix D) that for Phase IIb, previous biological conclusions for protected species remain unchanged.

In regard to protected aquatic species, the biological conclusion for the Selected Alternative of May Affect, Not Likely to Adversely Affect found in previous environmental documentation remains unchanged even for the new listed species, the Atlantic sturgeon. NMFS affirmed this in a December 13, 2016 letter (see Appendix D) and affirmed in the case of the shortnose sturgeon, hawksbill sea turtle, and leatherback sea turtle that they are not present in the Phase IIb project area.

Essential Fish Habitat. The potential impact to essential fish habitat impacts (short-term, long-term, permanent, and potential species-specific) to EFH addressed in the 2008 FEIS (Section 4.7.6.2) and the Essential Fish Habitat Assessment (CZR, Incorporated, 2008)<sup>12</sup>

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<sup>9</sup> CZR, Incorporated. 2014. *Technical Memorandum on the Effects of Parallel Bridge Corridor with NC 12 Transportation Management Plan Alternative for NC 12 Replacement of Herbert C. Bonner Bridge (Bridge No. 11) over Oregon Inlet on Rufa Red Knot (*Calidris canutus rufa*)*. Prepared for the North Carolina Department of Transportation.

<sup>10</sup> Federal Highway Administration and North Carolina Department of Transportation. May 2013. *Threatened and Endangered Species Technical Memorandum for Pea Island Long-Term Improvements Bonner Bridge Replacement Project Phase IIa*.

<sup>11</sup> Federal Highway Administration and North Carolina Department of Transportation. 2016. *Threatened and Endangered Species Technical Memorandum for NC 12 – Rodanthe Breach Long-Term Improvements Bonner Bridge Replacement Project Phase IIb*.

<sup>12</sup> CZR, Incorporated. 2008. *Essential Fish Habitat Assessment for NC 12 Replacement of Herbert C. Bonner Bridge*. Prepared for the North Carolina Department of Transportation.



and 2016<sup>13</sup>) for the Phase IIb Selected Alternative area would be similar to Phase I, since both areas have the same EFH types. Both the 2010 Bridge South and the Selected Alternative include a bridge in Pamlico Sound with similar impacts. The Selected Alternative is 550 feet longer (10,550 versus 10,000 feet) over the sound because of the decision to adjust the 2010 Bridge South such that less new easement was required in the Refuge.

Waters less than 6 feet deep within Pamlico Sound are considered potential SAV habitat. For the Bridge on New Location Alternative (including the Selected Alternative), all open water impacts also are considered impacts to SAV habitat. Based on 2014, 2015, and 2016 surveys, the Selected Alternative contains both SAV beds and SAV habitat.

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 0.10 acre to 2.70 acres. Should the pile caps be placed 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 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 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 select alternative is in an area with fewer dense existing SAV beds. Based on SAV surveys conducted in 2014, the Selected Alternative would shade approximately 6.01 acres of SAV beds. 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 and 2016 surveys, the total SAV cover shaded was 5.81 and 5.79 acres, respectively.

As with the 2010 Bridge South, temporary construction-related impacts on marine and estuarine waters could result with the Selected Alternative 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. The primary potential construction impact within EFH for Selected Alternative, as was the case for the 2010 Bridge South, would be the pile jetting process,

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<sup>13</sup> CZR, Incorporated. 2016. *Essential Fish Habitat Assessment Addendum for NC 12 Replacement of Herbert C. Bonner Bridge Parallel Bridge Corridor with NC 12 Transportation Management Plan Alternative NC 12-Rodanthe Breach Long-Term Improvements Bonner Bridge Replacement Project Phase IIb*. Prepared for the North Carolina Department of Transportation.

including increased turbidity and burial of organisms by jetting spoil surrounding the pile being jetted into place.

#### Noise Impacts

The noise impact of the Selected Alternative does not represent significant new impacts. Noise was addressed previously for the Bonner Bridge Replacement Project (B-2500) in Section 4.10 of the 2008 FEIS, Table 1 of the 2010 ROD, and in Section 4.2.6.1 of the 2016 Revised EA. Table 1 of the 2010 ROD indicated that the noise impact of the 2010 Bridge South would be three residential receptors exceeding FHWA noise abatement criteria (NAC), and three residential receptors (including one of the three exceeding FHWA NAC) and 1 business receptor with substantial noise increases. In the Revised Phase IIb EA, it was documented that the Selected Alternative would result in three residential receptors exceeding FHWA NAC.

Traffic noise abatement was not recommended in the Revised Phase IIb EA, and no noise abatement measures are proposed. Given their similar locations, construction noise impacts of the 2010 Bridge South and the Selected Alternative, as discussed in Section 4.13.3 of the 2008 FEIS and section 4.2.6.5 of the Revised Phase IIb EA, would not be notably different.

In December 2016,<sup>14</sup> NCDOT reviewed the Selected Alternative for compliance with the October 6, 2016 NCDOT Traffic Noise Policy. In addition to the three receptors exceeding FHWA NAC identified in the Revised Phase IIb EA, under the new policy, which changed the definition of a substantial impact, the traffic noise increase at two receptors is now considered substantial and warranted the consideration of noise abatement. The two receptors are the home fronting Pamlico Sound that is closest to the Selected Alternative and the pool of the home immediately to the north. A noise barrier analysis was conducted for the two receptors and a barrier was found to be feasible but not reasonable because the barrier square footage per benefited receptor exceeded the NCDOT policy's definition of reasonable.

#### Air Quality Impacts

The air quality impact of the Selected Alternative does not represent significant new impacts. Air quality impacts of the Bonner Bridge Replacement Project (B-2500) were assessed in Section 4.9 of the 2008 FEIS. 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

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<sup>14</sup> NCDOT. December 2016. "NC 12 Long-Term Improvements, Review of Alternative 2014B for Compliance to the 2016 NCDOT Traffic Noise Policy; Dare County, STIP #B-2500B."

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 and included in Section 4.2.7 of the 2013 Phase IIb EA and Revised Phase IIb EA. No notable new air quality impacts were found for the Selected Alternative.

The 2008 FEIS addressed construction-related impacts on air quality in Section 4.13.2. Air quality impacts resulting from roadway construction activities are typically not a concern when contractors utilize appropriate control measures, which will be done with construction of the Selected Alternative.

### ***3.5.2 Effect of Implementing Phase IIb Selected Alternative on the Impacts Associated with All Phases of the PBC/TMP Alternative***

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 Selected Alternative.

The construction of the Selected Alternative 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 selected alignment and the locations where future phases of the PBC/TMP alternative would occur, the selection of the 2014B Bridge on New Location Alternative would place no limits on the choices available for other future phases of the PBC/TMP alternative or extending Phase IIb further north within Pamlico Sound.

## **3.6 Agency Coordination**

Additional coordination among agencies that has occurred since the coordination activities documented in Chapter 6 of the Revised Phase IIb EA are:

- Coordination with the Refuge and SHPO to obtain agreement that the planned Phase IIb temporary construction easement is not a Section 4(f) use (see Section 4.0)
- Coordination with SHPO regarding the National Register-eligibility and data recovery commitment for the Pappy Lane wreck (see Section 5.4 and Appendix D)
- Coordination with USFWS and NMFS under section 7 of the Endangered Species Act (see letters from USFWS and NMFS in Appendix D)

## 4.0 Section 4(f) Statement

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Section 4(f) of the US Department of Transportation (USDOT) Act of 1966, as amended (49 *United States Code* [USC] 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.
2. The action includes all possible planning, as defined in 23 CFR 774.17, to minimize harm to the property resulting from such use.

If analysis concludes that there is no feasible and prudent avoidance alternative, then USDOT may approve only the alternative that causes the least overall harm in light of the statute's preservation purpose.

Based on the Deed of Easement, Phase I of the PBC/TMP Alternative will use 1.13 acres of Refuge land permanently for new permanent easement; however, 0.71 acres of land would be returned to the Refuge, so a net of approximately 0.42 acres of land would be permanently used by the Refuge for Phase I. Phase I of the PBC/TMP Alternative also calls for temporary use during construction of approximately 1.96 acres of Refuge land.

The Phase IIa alternative selected in the 2013 Phase IIa ROD would require no new permanent NC 12 easement. The temporary construction easement associated with the construction of the Phase IIa Selected Alternative would not constitute a Section 4(f) use because it meets all five conditions listed in 23 CFR 774.13(d), which are: temporary duration; minor scope of work; no anticipated permanent adverse physical impacts or interference with the protected activities, features, or attributes of the property, on either a temporary or permanent basis; the land used will be fully restored; and documented agreement has been obtained from officials with jurisdiction. This was documented in Section 5.4.2 of the Phase IIa EA, beginning on page 5-6.

The interim Phase IIa bridge under construction in 2016 required no new permanent NC 12 easement and would not constitute a Section 4(f) use. The 1.91 acres of temporary construction easement associated with the construction of the interim bridge would not constitute a Section 4(f) use because it meets all five conditions listed in 23 CFR 774.13(d). Under the terms of the Special Use Permit from the Refuge for the interim bridge, a parking lot to replace one bypassed by the interim bridge will be built 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 following the construction of the interim Phase IIa bridge.

The Phase IIb Selected Alternative, 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. A total of 19.27 acres of the existing NC 12 easement would be returned to the Refuge and restored. 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 Section 5.4.1.3 of the Revised Phase IIb EA.

With the Selected Alternative, 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 Selected Alternative 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, the permitted temporary construction easement would not be used for the entire duration of the project. The temporary easement would be needed primarily near the end of the construction period when the Selected 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 acre of temporary construction easement is expected to be confined to use for 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]).

NCDOT requested concurrence that the temporary easement for the preferred alternative was not subject to Section 4(f). In an August 25, 2016 letter, the Refuge manager indicated that the USFWS concurs in general based on current conditions on the ground, which are subject to change based on the dynamic nature of this section of the Refuge. In an August 25, 2016 e-mail the representative for the SHPO said she was good with the temporary construction easement if the Refuge was good with it.

As described in Section 3.5.1 under “Cultural Resource Impacts,” the remains of a large iron vessel (Pappy Lane Wreck) that is eligible for the National Register of Historic Places are in Pamlico Sound immediately west of Rodanthe. The Selected Alternative crosses the southern limits of this site. The wreck does not warrant preservation in place and FHWA and NCDOT will develop a data recovery program for approval by SHPO in accordance with the stipulations of the PA. With the implementation of data recovery, there would be no Section 4(f) resource use associated with the wreck. Coordination with SHPO is underway.

The Revised Final Section 4(f) Evaluation for the Bonner Bridge Replacement Project (B-2500) (Appendix B of the 2010 EA) identifies the location and characteristics of Section 4(f) properties in the project area, describes the applicability of Section 4(f) to these properties (which was amended in the Revised Phase IIb EA to reflect that the Refuge is a Section 4(f) resource both as a refuge and as a historic resource), discusses avoidance alternatives, presents a least overall harm analysis, addresses the measures

taken to minimize harm, and reaches conclusions for the PBC/TMP Alternative. The Section 4(f) Evaluation specific to Phase IIb (see Section 5.0 of the Revised Phase IIb EA) identifies the location and characteristics of Section 4(f) properties in the Phase IIb project area, describes the applicability of Section 4(f) to these properties, discusses avoidance alternatives, re-affirms the least overall harm analysis presented in Revised Final Section 4(f) Evaluation, concludes that the Selected Alternative would have the least overall harm of the Phase IIb alternatives considered. The evaluation also addresses the measures taken to minimize harm.

Based on the Section 4(f) Evaluation presented in the Revised Phase IIb EA (Chapter 5.0), as well as the findings of the 2009 Revised 4(f) Evaluation that the PBC/TMP Alternative is the alternative that causes the least overall harm and the Section 4(f) finding above related to the Pappy Lane Wreck, the Selected Alternative (PBC/TMP Alternative) for the Bonner Bridge Replacement Project (B-2500) remains valid and does not need to be reconsidered. There are no prudent and feasible alternatives to avoid the use of the Refuge. The PBC/TMP Alternative (including the Phase IIa Selected Alternative, the Phase IIa interim bridge, and the Phase IIb Selected Alternative) causes the least overall harm. The PBC/TMP Alternative (including the Phase IIa Selected Alternative, the Phase IIa interim bridge, and the Phase IIb Selected Alternative) includes all possible measures to minimize harm.

## **5.0** Measures to Minimize Harm

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Measures to minimize harm associated with the Selected Alternative that were presented in the 2010 ROD include those that are incorporated in most transportation improvement projects (relocation services, wetland compensation, etc.) as well as 35 project-specific commitments. These measures are re-affirmed in the sections below. Additional measures to minimize harm may be developed during completion of the environmental permit process for Phase IIb, and as future phases of the PBC/TMP Alternative are finalized. Any additional measures to minimize harm for future phases will be documented in the appropriate NEPA documentation for each future phase of action, as determined by FHWA and NCDOT in accordance with 23 CFR 771.129-130 (see Section 3.3.2 of the 2010 ROD).

### **5.1** Project-Specific Commitments

The project-specific commitments for the Bonner Bridge Replacement Project (B-2500), including Phase IIb, are presented in Appendix A.

### **5.2** Relocations

The Phase IIb Selected Alternative will displace two homes and five businesses. The relocation program for the Selected Alternative will be conducted in accordance with the

Federal Uniform Relocation Assistance and Real Property Acquisitions Act of 1970 (Public Law 91-646), and the North Carolina Relocation Assistance Act (GS-133-5 through 133-18). The program is designed to provide assistance to displaced persons in relocating to a replacement site in which to live or do business. At least one relocation officer is assigned to each highway project for this purpose.

### **5.3 Parks and Recreation Facilities**

No facilities within the Refuge would be affected by the Phase IIb Selected Alternative. A parking lot displaced as a part of the Phase IIa interim bridge project will be replaced during the construction of the Phase IIb Selected Alternative. The site is 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 parking lot it replaces.

In response to public comments related to impacts to watersports access in Pamlico sound, NCDOT added to the B-2500B Request For Proposals (RFP) provided to the short listed Design-Build Teams for the Phase IIb Selected Alternative a requirement for each team to briefly describe or illustrate two (minimum) or three concepts that could provide non-motorized water sports access to the portion of the Pamlico Sound west of the Preferred Alternative. The RFP states that concepts should address parking, access, and launch area for a variety of water sports, including kite boarding. After project award, NCDOT will use the proposed concepts as a starting point to coordinate with Dare County and Rodanthe to address local citizens concerns about water sports access to Pamlico Sound in the vicinity of the Phase IIb project.

### **5.4 Cultural Resources**

Section 106 of the National Historic Preservation Act of 1966, as amended (16 USC 470f), affords consideration of properties that are listed, or eligible for listing, on the NRHP. As discussed in Section 4.0, Section 4(f) of the USDOT Act of 1966, as amended (49 USC 303), protects publicly owned public parks, publicly owned recreation areas, wildlife and waterfowl refuges, and historic sites of national, state, or local significance from conversion to highway use using FHWA administered funds unless there is no feasible and prudent alternative and unless all possible planning is done to minimize harm. In accordance with the requirements of Section 4(f), Section 106, and the NEPA, surveys were conducted to identify the cultural resources in the project area. There are three resources listed on or eligible for inclusion in the NRHP in the Phase IIb project's Area of Potential Effect: the Pea Island National Wildlife Refuge (eligible), Chicamacomico Life Saving Station (listed) and the Rodanthe Historic District (eligible). The Refuge is the only resource that would be adversely affected.

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, bridges in the Refuge would be a sizable new, elevated, linear, man-made feature. The Phase IIb Selected Alternative's bridge, however, would be within the Refuge for only approximately 0.4 mile. Direct motor vehicle access from NC 12 would be lost for 1.8 miles. The Phase IIb Selected Alternative would require 2.79 acres of new permanent NC 12 easement, however, it would return 19.27 acres of existing NC 12 easement to the Refuge to be restored. The new alignment would require a 0.63 acre temporary construction easement in the Refuge for a temporary traffic maintenance road to take traffic around the proposed bridge approach during construction. Lands used for temporary construction also would be restored.

To further minimize and mitigate impacts on these historic cultural resources, FHWA, SHPO, the Advisory Council on Historic Preservation (ACHP), and NCDOT participated in the Section 106 consultation process. In addition, the following agencies and organizations requested to be consulting parties and provide input into the Section 106 consultation process: Dare County, the North Carolina Aquarium Society, the Refuge, National Park Service (NPS), and the Chicamacomico Historical Association. To complete Section 106 consultation, FHWA, SHPO, ACHP, and NCDOT, along with the consulting parties, developed a PA stipulating measures that FHWA will ensure are carried out during the design and construction of the Phase IIb Selected Alternative to mitigate adverse impacts to the historic cultural resources. In the context Phase IIb agency coordination, the SHPO, USFWS, and NCDOT agreed on a bridge rail design for the Selected Alternative consisting of a 36-inch concrete parapet with two bar metal railing. Further information about the Section 106 consultation process and the PA is presented in Section 9.0 of the 2010 ROD and of this ROD.

The remains of a large iron vessel (Pappy Lane Wreck) that is eligible for the National Register of Historic Places are in Pamlico Sound immediately west of Rodanthe; this site was documented in the 2008 FEIS on page 3-33 and its National Register-eligibility was affirmed by the Office of State Archaeology in an October 27, 2016 memorandum (Appendix D). The Selected Alternative crosses the southern limits of this site. The wreck does not warrant preservation in place. Therefore, FHWA and NCDOT will develop a data recovery program for approval by SHPO and implementation in accordance with the stipulations of the PA. Coordination with SHPO is underway.

## **5.5 Wetland Impacts**

Avoidance and minimization measures associated with wetland, SAV, and Pamlico Sound impacts for the Phase IIb Selected Alternative were discussed and agreed upon by the NEPA/Section 404 Merger Team at a Concurrence Point 4A meeting held on January 14, 2016 (see Appendix A of the Revised Phase IIb EA).

The Phase IIb Selected Alternative will permanently impact 0.41 acre of wetlands that fall under the jurisdiction of Section 404. No temporary wetland impacts are currently expected. All CAMA wetlands will be bridged. 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 (higher impact because less direct pile impact) or placed at ground level, CAMA wetland bridge shading impacts would be 0.15 acre to 0.16 acre and open water bridge shading impacts would be 7.92 acre to 10.50 acres.

Efforts will be made to avoid and minimize wetland impacts in developing the final design and in construction planning for the Phase IIb Selected Alternative. As part of the Concurrence Point 4A Merger Team agreement, NCDOT committed to 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.

## **5.6 Protected Species Impacts**

As indicated in Project Commitments 9 and 20 (see Appendix A), to avoid construction impacts to protected turtles, Atlantic sturgeon, and shortnose sturgeon, NCDOT's contractor would use pipeline or clamshell dredging rather than hopper dredging, if any dredging is done. Dredging is not planned with the Phase IIb Selected Alternative. As indicated in Project Commitment 13, 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. As per Project Commitments 25 and 26, NCDOT will implement the nondiscretionary measures for the piping plover and sea turtles (green sea turtle, leatherback sea turtle, and loggerhead sea turtle) included in the terms and conditions outlined in USFWS's 2008 *Biological and Conference Opinions* and subsequent amendments. This includes the use of a 36-inch high bridge rail parapet. As per Project Commitment 26a, NCDOT will ensure the use of NCDOT's BMPs for soil and erosion control, and develop a spill prevention and pollution control plan to minimize impacts to wetlands, seagrasses, and the waters of Pamlico Sound. Turbidity curtains will be deployed around each bridge bent as the substructures are constructed. A "ramp-up" method will be used to initiate impact driving of piles. NCDOT will maintain a year-round restriction on in-water pile driving between 9:00 PM and 8:00 AM. NCDOT will require the use of noise reduction measures (either bubble curtains or isolation casings) during the impact driving of 54-inch diameter cylindrical piles (if they are used). As per Project Commitment 27, NCDOT will implement nondiscretionary measures for the rufa red knot included in the terms and conditions outlined in USFWS's 2015 *Addendum to the Biological and Conference Opinions*.

## 5.7 Essential Fish Habitat Impacts

Construction impacts, including jetting, would affect EFH for the entire length of the Phase IIb Selected Alternative when it is in Pamlico Sound. Impacts would be minimized by using a work bridge in areas too shallow for a work barge, and by containing pile jetting spoil.

NCDOT and NMFS met on December 1, 2015 to discuss the mitigation of the Phase IIb Selected Alternative's 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 appropriate for mitigation planning purposes and could be refined later if the data warranted a change. NCDOT also has agreed to look at what historical aerial photography is available in an 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.

A primary potential construction impact within EFH for Phase IIb Selected Alternative would be the pile jetting process, including increased turbidity and burial of organisms by jetting spoil surrounding the pile being jetted into place. Phase I of the PBC/TMP Alternative involves 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 Select 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 would be disposed of in an approved waste area. NCDOT will work with NCDEQ-DCM, 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.

## 5.8 Construction Impacts

Construction of the Phase IIb Selected Alternative will be governed by:

- NCDOT's *Standard Specifications for Roads and Structures* (NCDOT, January 2012, or as current at the time of construction)

- American Association of State Highway and Transportation Officials' (AASHTO) *LRFD Bridge Design Specifications (AASHTO, 2014)*, or as current at the time of construction)

Mechanisms will be put in place to maintain traffic flow; minimize air quality, noise, and construction lighting impacts; manage waste disposal; protect surrounding natural resources; control erosion; and to handle any accidental waste spills. Affected geodetic survey markers in the project area will be properly relocated. A temporary construction easement (0.63 acres) will be needed in part to maintain traffic during construction at the north end of the Phase IIb Selected Alternative. NCDOT will apply for a Special Use Permit for this easement from the Refuge. The land affected will be restored after construction is completed.

## 5.9 Mitigation

Table 2 lists the current mitigation commitments proposed for impacts to historic properties, natural resources, and Section 4(f) properties with Phase IIb. FHWA and NCDOT will finalize mitigation in coordination with USACE, NMFS, Refuge, and NCDEQ and other agencies as appropriate.

**Table 2. Project Mitigation Measures**

Resource	Mitigation Measure
Section 404/401 Jurisdictional Resources (wetlands and open water)	<ul style="list-style-type: none"> <li>• When jetting piles in Pamlico Sound, turbidity and water quality degradation will be minimized 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.</li> </ul>
Section 106 Stipulations	<ul style="list-style-type: none"> <li>• For the Phase IIb project, NCDOT agreed with SHPO and USFWS (in association with Section 106 of the Historic Preservation Act and Section 7 of the Endangered Species Act) on a bridge rail design consisting of a 36-inch concrete parapet with two bar metal railing.</li> </ul>
Pea Island National Wildlife Refuge Facilities	<ul style="list-style-type: none"> <li>• 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.</li> </ul>
Submerged Aquatic Vegetation	<ul style="list-style-type: none"> <li>• SAV mitigation for Phase IIb likely will be similar to that proposed for Phase I, with a similar concept and post-construction monitoring component. That plan for Phase I 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.</li> </ul>

## **6.0** Monitoring and Enforcement Program

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Coordination will be maintained with regulatory and resource agencies during permitting and construction of the Phase IIb Selected Alternative to ensure that avoidance, minimization, and compensatory mitigation measures will be initiated, as required by law and as agreed to in the Project Commitments (see Appendix A).

NCDOT and FHWA will enforce pertinent specifications and contract provisions in accordance with the intent of the Revised Phase IIb EA and the welfare of the public.

## **7.0** Corrections to the Revised Phase IIb EA

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Comments on the Revised Phase IIb EA submitted by state and federal environmental resource and regulatory agencies require that several corrections be made to the Revised Phase IIb EA.

These comments and the associated corrections are listed below (new material is in bold text):

- Figure 6 is a revision of Revised Phase IIb EA Figure 12. It corrects an error in the photosimulation of the 2014B Bridge on New Location Alternative (preferred and now selected). In the original photosimulation, the scale of the bridge rendering and the photograph did not match. The bridge rendering was too large. No change was made in the location of the bridge alignment or design.
- The last paragraph on page 4-28 through the top of page 4-29 is revised to read:

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). **The Refuge has indicated that in those areas where NCDOT removed portions of NC 12 and restored them to a natural state that pedestrian access would be allowed under the same policies that apply where NC 12 continues to exist.**



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 WITH CORRECTED 2014B**

- The second paragraph on page 4-31 is revised to read:

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 the Refuge has indicated it would provide. This is documented in the second paragraph of page 4-12 of the 2008 FEIS. **The Refuge has indicated that in those areas where NCDOT removed portions of NC 12 and restored them to a natural state, pedestrian access would be allowed under the same policies that apply where NC 12 continues to exist.**

- In Table 4 beginning on page 4-34, the numbers shown under permanent shading for the 2014A and 2014B Bridge on New Location Alternative alignments are reversed. The numbers not shown in parentheses should be in parentheses and the numbers shown in parentheses should not be in parentheses. The associated second paragraph on page 4-37 is revised to read:

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), **12.06** acres (2014A alignment), and **12.51** 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), **9.21** acres (2014A alignment), and **9.55** acres (2014B alignment [preferred]).

- The rufa red knot biological conclusion on page 4-42 is corrected to read: MAY AFFECT, LIKELY TO ADVERSELY AFFECT

- An additional subsection is added to Section 4.2 as follows:

#### **4.2.8 Climate Change**

The climate predictions for the Southeast and Caribbean in the US Global Change Research Program's National Climate Assessment summarize climate change issues for the Southeast and Caribbean as: "Sea level rise poses widespread and continuing threats to the region's economy and environment. Extreme heat will affect health, energy, agriculture, and more. Decreased water availability will have economic and environmental impacts." The issue of sea level rise is applicable to the Phase IIB project. The impact of accelerated sea level rise on the Phase IIB project was addressed in Section 4.6.6 of the 2008 FEIS. In its discussions of the Bridge South component of the Road North/Bridge South Alternative (equivalent to the Phase IIB Bridge on New Location Alternative) and the Phased Approach/Rodanthe Bridge Alternative (equivalent to the Bridge within Existing NC 12 Easement Alternative) the 2008 FEIS says that with both alternatives potential island breach areas would be bridged. Also, the bridges of Phase IIB detailed study alternatives all terminate behind (west of) the forecast 2060 high erosion shoreline. Accelerated sea-level rise was taken into account in the shoreline forecasts and is being taken into account by the on-going coastal monitoring program being implemented as a part of the PBC/TMP Alternative selected for implementation in the 2010 ROD for the Bonner Bridge Replacement Project (B-2500).

- The last sentence under "US Army Corps of Engineers Permits" on page 4-59 is revised to read: The anticipated impacts to wetlands as a result of construction of the detailed study alternatives are discussed in **Sections 4.2.5.2 and 4.2.5.3.**
- Section 5.4.1.4 on page 5-10 is revised to read:

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). **The Refuge has indicated that in those areas where NCDOT removed portions of NC 12 and restored them to a natural state, pedestrian access would be allowed under the same policies that apply where NC 12 continues to exist.** 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.)



## 8.0 Response to Comments on the 2016 Revised Phase IIb EA

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Appendix C presents responses to the comments on the Revised Phase IIb EA received from the public, state and federal environmental resource and regulatory agencies, regional agencies, and NGOs.

Sixty-five sets of public comments were received within the comment period. The comments covered a range of issues, including:

- Preference for the Preferred (now Selected) Alternative (2014B Bridge on New Location Alternative)
- Concerns with the change in the Preferred (now Selected) Alternative decision and the involvement of environmentalists in the change
- Other alternatives preferred, including Bridge within Existing NC 12 Easement, Beach Nourishment, 2013 Bridge on New Location Alternative, a scaled down bridge within existing NC 12 easement with nourishment, causeway/revetment or artificial reefs, repair the road when needed, and move the Rodanthe landing
- General impacts of the Preferred (now Selected) Alternative
- Community Impacts of the Preferred (now Selected) Alternative
  - Visual and noise impact
  - Recreation impact
  - Economic impact, including property value
- Natural resource impacts of the Preferred (now Selected) Alternative
  - Water quality
  - Fish and wildlife
- Need to see the bigger picture
- Keeping the public informed

The written correspondence received from the public, agencies, and NGOs is included in Appendix B.

## **9.0** Section 106 Programmatic Agreement

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The 2010 ROD for the Bonner Bridge Replacement Project (B-2500) describes the Section 106 PA that was developed to address adverse effects to historic properties that may result from the PBC/TMP Alternative and potential mitigation strategies (see 2010 ROD, Section 9.0). The PA was signed by the signatory agencies (FHWA, SHPO, ACHP, and NCDOT) on November 15, 2010, and lists eight principles that FHWA and NCDOT shall adhere to for replacement of the Bonner Bridge and development and implementation of future phases of the PBC/TMP Alternative. It was amended in 2013 to include a final agreement on the characteristics of bridge rails in the Refuge for Phase I and future phases.

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 an historic property.
- Selection of a new Preferred Alternative [i.e., a change from the PBC/TMP Alternative]

None of these conditions are met with Phase IIb or within its setting. A representative of SHPO (from NCDOT) serves on the NEPA/Section 404 Merger Team, concurred with the Phase IIb Selected Alternative, and has had an opportunity to indicate if additional consultation was desired.

Stipulation #IIA of the PA discusses bridge design within the Refuge, in particular the design of the bridge rail. In the context Phase IIb agency coordination, the SHPO, USFWS, and NCDOT agreed on a bridge rail design consisting of a 36-inch concrete parapet with two bar metal railing. This bridge rail design is reflected in the amended Stipulation #IIA in the 2013 first amendment to the 2010 PA.

## **10.0** Next Steps

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### **10.1** Phase IIb

Following the issuance of this Phase IIb ROD, NCDOT intends to accept and review Technical Proposals from qualified design-build contractors. NCDOT will then select a contractor and award a construction contract for Phase IIb. The Project Commitments (Appendix A) will be referenced in the construction contract to ensure that the selected

contractor is aware of and abides by all of the commitments. The construction contract also will require the selected contractor to abide by all applicable environmental permit conditions and stipulations. Federal-aid highway funding for the project is expressly conditioned upon NCDOT's compliance with the terms and conditions of all United States Department of the Interior permits issued for the project.

The necessary permits and approvals, listed in Section 10.3 below, will be finalized following the issuance of this Phase IIb ROD. Per the NEPA/Section 404 Merger Process, NCDOT will convene the project's Merger Team to discuss Concurrence Points 4B (30 Percent Hydraulic Review) and 4C (Permit Drawings Review). The drawings will be revised based on agency review and comments, and will be submitted with the permit applications to the appropriate agencies.

Phase IIb construction is expected to last approximately 3 to 3.5 years. Phase IIb construction will not begin until all of the necessary permits have been obtained.

## **10.2 Later Phases (NC 12 Transportation Management Plan)**

The coastal monitoring program component of the PBC/TMP (see Section 3.3.2 of the 2010 ROD) was funded and implemented by NCDOT in 2011, and is ongoing. New coastal conditions data for the Bonner Bridge Replacement Project (B-2500) project area is being collected related to ocean and estuarine shorelines; island elevation and dune crest; beach sand volume; vegetation; erosion rate; and critical buffer and vulnerability present and forecast as it relates to storm events, NCDOT maintenance of NC 12, and barrier island breaches. The updated coastal conditions data are published in an annual report. The latest monitoring report is titled *Coastal Monitoring Program, NC 12 Transportation Management Plan, TIP Project B-2500, 2014 Update* (Overton, 2016).

These data will be applied to a Refuge habitat/NC 12 vulnerability forecasting study. Through this program, NCDOT and USFWS will work together to develop and assess alternative future scenarios, including possible site-specific events and remedies. The purpose of the periodic Refuge habitat/NC 12 vulnerability forecasting study is to go beyond simply monitoring conditions and instead plan for potential events, such as storms, to minimize future threats to highway infrastructure and impacts to Refuge resources. In addition, the study and selection of each future phase will be carried through the NEPA/Section 404 Merger Process.

The coastal monitoring data included new shoreline position data through the end of 2014. A comparison of the 2060 high-erosion shoreline forecast from the 2008 FEIS (using data through June 2004) and updated forecasts (using data through 2011 and through 2014) was shown in Figure D-1 in Appendix D of the Revised Phase IIb EA. The 2060 high-erosion shoreline update using erosion trends data through 2011 (presented in the 2013 Phase IIb EA) was used in making refinements to the southern end of the Bridge within Existing NC 12 Easement Alternative. The changed shoreline

allowed the bridge to descend into Rodanthe in a manner that reduced visual impacts. The 2010 design carried the 30-foot-high bridge to the Rodanthe Historic District boundary to facilitate a future bridge extension once shoreline erosion reached the Refuge. A ramp to one side of the bridge was used to get traffic on and off the bridge. With the new design the bridge descended directly to grade just before the historic district boundary. The change in the shoreline from using data through 2011 to using data through 2014 did not reveal new opportunities to minimize impacts through further design changes, although some modifications that minimize impacts may be made as deemed prudent by the selected design-build team.

### **10.3 Permits and Approvals**

#### ***10.3.1 Phase IIb***

Construction of the Selected Alternative requires the permits and approvals listed below. 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 Selected 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 of the Selected Alternative are discussed in Section 3.5.1 under “Natural Systems Impacts.”

##### *US Fish and Wildlife Service Permits and Approvals*

A special use permit would be required for the temporary construction easement necessary to construct the Selected Alternative. A Deed of Easement would be required for the changes in the NC 12 easement associated with the Selected Alternative. 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 and Highway Easement Deed will be required with the Selected Alternative for the section of the proposed 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 Selected Alternative would involve construction in an 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 ..." Since that time, NCDEQ-DCM has indicated that the turn-around to be built where NC 12 would terminate at the Refuge boundary with the Selected Alternative may not meet ocean setback requirements. An exception to the ocean-setback requirements will be sought, if needed, in order to build the turn-around.

#### 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.

#### 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 Endangered Species Act 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.

#### **10.3.2 Later Phases (NC 12 Transportation Management Plan)**

The NC 12 Transportation Management Plan will guide the study and implementation of future phases of action in the project area through 2060. Future phases of the project likely will require a similar list of agency permits and approvals as Phase IIb. The exact approvals and permits that will be needed will depend upon future shoreline conditions and on what action is selected for implementation. FHWA will not approve a future phase of the project for construction until all necessary permits have been obtained for that particular phase.

## **11.0 Conclusion**

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Based on the above information and after consideration of the input received from other agencies, organizations, and the public, FHWA has determined that the environmental

studies completed for this project are in accordance with 23 CFR and 23 USC. Specifically, FHWA has determined that implementation of the Phase IIb Selected Alternative, as described in this Phase IIb ROD, as the next phase of the PBC/TMP Alternative selected for implementation in the 2010 ROD, is environmentally preferable and in the best overall public interest. FHWA has determined that there is no feasible and prudent alternative to the use of land from the Pea Island National Wildlife Refuge for the construction of Phase IIb, that the Phase IIb Selected Alternative would cause the least overall harm as the next phase of the PBC/TMP Alternative, and that the Phase IIb Selected Alternative includes all possible planning to minimize harm to the property. In the Revised Phase IIb EA, FHWA re-evaluated the impacts associated with the design modifications that occurred after the 2008 FEIS (taking into account changes in existing and forecast environmental conditions) and also assessed the impacts associated with the Selected Alternative. FHWA has determined that the modifications and changes assessed in the Revised Phase IIb EA do not result in any new, significant impacts not previously identified; therefore, a Supplemental FEIS is not required. The Phase IIb 2014B Bridge on New Location is hereby approved for implementation in accordance with the provisions of this Phase IIb ROD.

12/15/16

Date



John F. Sullivan III, P.E., Division Administrator  
Federal Highway Administration

# *Appendix A*

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## **Project Commitments**





# 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

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The following text lists the Project Commitments for the Bonner Bridge Replacement Project for all phases. This list was last updated in the Revised Phase IIb Environmental Assessment (B-2500B) (May 2016). 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 jetted to the tip elevation (depth of the tip of the pile). Bridge piles over land would be jetted or driven. Potential damage to wetlands, SAV, Pamlico Sound, and Oregon Inlet from jetting 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. In 2016, underwater archaeological studies **were** conducted in open water and **were** reviewed with the Office of State Archaeology. **With the exception of a large iron vessel (Pappy Lane Wreck) identified in previous surveys, no potentially significant anomaly or target was observed in the data. See Project Commitment 33 for how the Pappy Lane Wreck will be protected.** 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 and 2016 for Phase I, IIa, and IIb.

**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).

**26a. Sea Turtles and Atlantic Sturgeon in Pamlico Sound. NCDOT will implement the construction conditions for Phase IIb contained in the December 13, 2016 letter from NMFS. NCDOT will ensure the use of NCDOT's BMPs for soil and erosion control (see Commitment 4), and develop a spill prevention and pollution control plan to minimize impacts to wetlands, seagrasses, and the waters of Pamlico Sound. Turbidity curtains will be deployed around each bridge bent as the substructures are constructed. A "ramp-up" method will be used to initiate impact driving of piles. The "ramp-up" method involves slowly increasing the power of the impact hammer, and the noise it produces, over a period of time (between 5 and 20 minutes) to give marine species an opportunity to leave the**



**work area. NCDOT will maintain a year-round restriction on in-water pile driving between 9:00 PM and 8:00 AM, so that no in-water pile driving occurs during at least 11 hours per night. NCDOT will require the use of noise reduction measures (either bubble curtains or isolation casings) during the impact driving of 54-inch diameter cylindrical piles (if they are used). [Relevant Phase IIb only]**

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. Pappy Lane Wreck Remains. The remains of a large iron vessel (Pappy Lane Wreck) are in Pamlico Sound immediately west of Rodanthe. The wreck is eligible for inclusion in the National Register of Historic Places under Criterion D and **does not warrant preservation in place**. Therefore, FHWA and NCDOT will develop a data recovery program for approval by SHPO in accordance with the stipulations of

the PA. The data recovery program will be implemented prior to January 2018.  
[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.



# *Appendix B*

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**Public, Agency, and  
Non-Governmental  
Organization Comments on  
the Revised Phase IIb EA**



## B. Public, Agency, and Non-Governmental Organization Comments on the Revised Phase IIb EA

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<b>B.1</b>	<b>PUBLIC COMMENTS .....</b>	<b>B-3</b>
	A – B.....	B-3
	C – E .....	B-14
	F – G .....	B-20
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9879 Fox Hill Court  
Ellicott City, MD 21042  
410-781-8282  
rickrja@yahoo.com

July 14, 2016

Mr. Drew Joyner  
NC DOT Human Environmental Section  
1598 Mail Service Center  
Raleigh NC 27699-1598  
[PublicInvolvement2@ncdot.gov](mailto:PublicInvolvement2@ncdot.gov)

Subject: NC12 Rodanthe Breach Project Phase 2B Bonner Bridge Project

Dear Mr. Joyner,

Thank you for the opportunity to comment on the subject project. The purpose of this letter is to express my opposition to the NC 12 Rodanthe Breach Project, Phase 2B Bonner Bridge Project.

I write this letter from the perspective of a long time recreational water enthusiast and a professional wetland ecologist. As a recreational water enthusiast my family, my friends, and I have enjoyed vacationing on the Outer Banks for over 30 years and for over 20 years specifically in the Rodanthe area. Together we relish water sports in which there is no better place on earth to enjoy windsurfing, kiteboarding, paddle boarding, and surfing. As a professional ecologist I have over 37 years of experience in wetland ecology and more than 20 years of experience at the helm of Maryland's Tidal Wetlands Regulatory Program where I coordinated with the very agencies involved in the decision making process for the Rodanthe bridge project. These agencies include U.S. Environmental Protection Agencies, U.S. Fish and Wildlife Service, National Marine Fisheries Service, and the U.S. Army Corps of Engineers.

My opposition is base equally on the impacts to or associated with:

1. The environment;
2. Economics;
3. Recreation and;
4. Aesthetics

I will be brief in my comments but am available at your convenience to expound on any issue.

#### The Environment

- The Rodanthe bridge is proposed to be constructed in near shore shallow water habitat defined by the agencies listed above to be the most productive and valuable habitat in the

Pamlico estuary and its adjoining upland communities. This habitat provides for fish nursery and spawning and provides the habitat for tidal marshes and submerged aquatic vegetation. It is home to many aquatic vertebrate and invertebrate organisms including abundant shell fish that the State of North Carolina has expeditiously protected.

- The site is on the North American Atlantic Migration Flyway which the U.S. Fish and Wildlife Service's (FWS) avidly manages. For example several of the main objectives of the FWS are to protect and guide the conservation, development, and management of the Nation's fish and wildlife resources and to administer a national program to provide the public opportunities to understand, appreciate, and wisely use fish and wildlife resources. Several of their functions are to protect endangered species, manage migratory birds, restore significant fisheries, and conserve and restore wildlife habitat such as wetlands. Construction of the bridge as currently proposed is in direct opposition to each of these functions and objectives.
- In addition to the impacts currently identified to date, there are numerous unidentified and significant associated environmental impacts. To name just one, Construction Equipment Access. The bridge would be constructed using heavy barge mounted cranes. These barge or barge-like vessels draw significant water depths well in excess of what the agencies consider to be near shore shallow water habitat. This valuable habitat would need to be dredged to accommodate these vessels thereby directly impacting fish, shell fish, and submerged aquatic resources.
- In my tenure protecting and regulating water resources side by side with the federal agencies, I have never experienced a project with such significant environmental impacts that met the approval of the any state or federal agency. Associated with the dredging will be the need to properly dispose of the dredged material. There are no adequate upland dredged material placement sites within close or economical proximity of the site. Beach nourishment or replenishment is not an option due to the unsuitable mostly fine nature of the dredge material.

#### Economics

Several alternatives to the current proposal exist that are much more economical both short and long term. Additionally, the dollars spent by tourists to this paradise must also be considered. In the years that the very small group that includes my family, friends, and I have visited Rodanthe, we have spent significant resources on lodging, dining, supplies, clothing, and equipment. My estimate is that we have spent in excess of \$300,000 that goes directly to the business' in the Rodanthe and surrounding communities. Many of us will no longer venture to this area if the bridge is built and our dollars will be spent elsewhere.

#### Recreation

There is no better place than the Rodanthe area to bring family and friends to enjoy passive water sports and related activities. Here the land meets the Ocean, Sound, and Beach within a short

Richard J. Ayella • 2

walking distance. Rodanthe provide a place to windsurf, kiteboard, fish, ride waves, surf, sunbath, bird watch and do many other water and beach related activities.

Aesthetics

I cannot recall an evening in all of my years at the Outer Banks that I have not awed over the wonderful sunsets this area provides. Every sunset is beautiful and everyone is different. Image now, the sunsets over a new bridge. I don't think words can say anymore.

In conclusion, I strenuously oppose the proposed Rodanthe Bridge and respectfully request that a more viable alternative that reduces environmental, economic, recreational, and aesthetic impacts be chosen.

Sincerely,

Richard J. Ayella

**Joyner, Drew**

**From:** Judy Banks <judybnks1948@gmail.com>  
**Sent:** Wednesday, June 22, 2016 10:29 AM  
**To:** Service Account - Public Involvement 2  
**Subject:** NC12 Rodanthe Bridge

I attended the June 21, 2016 Open House Hearing in Rodanthe. The presentation and your staff available-for-questions represented the NC DOT well.

Obviously, this hearing was well attended by home owners from the Rodanthe Mirolo Beach area. Their concern obviously, was how the "jug handle" bridge in the Pamlico Sound would effect their property.

I am a resident and property owner in Hatteras Village, at the southern end of Hatteras Island. My interest in the bridge is for ingress and egress of Hatteras Island. My feelings about the bridge would predictably be different than those property owners in Mirolo Beach.

More than 20 years ago, I attended the Hatteras Island hearing for the 17 mile bridge (never built). At that time, I thought that if a bridge's purpose is to provide reliable ingress/egress for Hatteras Island, that proposal was the most effective.

Now 20+ years later, we are discussing the most EFFECTIVE manner of ingress/egress to Hatteras Island. In my opinion, the "jug handle" Pamlico Sound alternative is the most effective and in the long term the most reliable option for Hatteras Island residents.

The S curve area north of Mirolo Beach in Rodanthe is a Hot Spot that will always be susceptible to a breach from the ocean. Accepting that fact, means that the correct location of a bridge should be away from that area; not subjecting the foundation pilings to the direct tidal flow from the ocean. I agree with the suggested Pamlico Sound bridge sites, rather than a bridge within the existing NC 12 easement.

As to the concerns from the Mirolo Beach, northern Rodanthe property owners, I suggest that their property is inevitably going to be effected by the breach area north of Rodanthe, regardless of the placement of the bridge. In order to resolve the never ending manual protection of a surface roadway in the breach area, a bridge must be built. If a bridge is built and maintenance ceases on the surface right of way, a breach will occur. Inevitably, a breach will effect all property owners in northern Rodanthe. A breach infers literal drift accumulation ocean and sound side, migration of the breach area to the south and predictable shoaling sound side. Once maintenance of the existing NC12 easement is abandoned in the refuge property, a breach will occur.

Now, I once was a Realtor. My husband is currently a Realtor. That said, the truth remains the same. Purchasing property on an island is a bet on Mother Nature. You may own property for generations or you may lose it in the next hurricane. Ultimately, it is not the roll of the NC DOT, nor the state of North Carolina, to try to control Mother Nature in order to protect private property.

In my opinion, the purpose of this bridge is to provide long term effective and efficient ingress and egress to Hatteras Island. The Pamlico Sound bridge locations provide that.

Judy Banks

**Joyner, Drew**

**From:** Daniel Barron <barron320a@yahoo.com>  
**Sent:** Friday, June 17, 2016 11:57 AM  
**To:** Service Account – Public Involvement 2  
**Subject:** Rodanthe N.C. 12 Bridge Option

I live in Western Pennsylvania and have vacationed, almost exclusively, at the Outer Banks for almost 55 years. I am now 60 years old and I remember my family's first trip to the primitive camp ground located at the northern tip of Pea Island. The campsites were free, there were outhouses, and the one shower consisted of a pipe coming out of the ground with a hand pump. There was no enclosure, just a pallet to stand on. The campground is gone now. But my memories remain. My family now rents cottages, mostly in Buxton.

I am greatly relieved to see the construction of the new bridge to replace the Herbert C. Bonner bridge. I have been across it hundreds of times. I understand the reasoning for the "jug-handle" bridge. One of our vacation trips was almost canceled because of the opening of the new inlet north of Milo Beach. We were able to get onto the islands via a ferry from Swan Quarter. We arrived on a Sunday and they opened the new, temporary, bridge a few days later.

My main concern regarding the "jug-handle" bridge is that after it is in service the "tree - huggers" will make every effort to close all of the roads and access to the area between Milo Beach and the southern end of the Herbert C. Bonner bridge.

I would like some assurance from the government of North Carolina that every effort will be made to allow future access to the beaches of Pea Island. I know that the environmentalists want this area closed. They have stated this in their remarks while opposing the construction of the replacement of the Herbert C. Bonner bridge.

I try to keep informed about the beach access issues and other issues concerning the people who are trying to make a living or vacationing on the Outer Banks. I am a member of the N.C.B.B.A. and the O.B.P.A. I have written letters to many Congressmen and people in government about the desire to build the new bridge and keep the beaches open to the public.

My family and I enjoy driving out to "The Point" at Cape Hatteras to fish and look for seashells. In the past we would spend as many as 4 weeks vacationing at the Outer Banks in the summer. But now with the beach closing it is not worth the time and expense to vacation there in the summer when access to "The Point" is closed. Now we only go down in September and October.

I don't want to see my children and future generations denied access to the beaches I grew-up on and denied the memories I cherish!

Daniel Barron  
157 Davis Rd.  
Ellwood City, PA  
16117  
barron320a@yahoo.com  
724-944-7675

**COMMENT SHEET**

**NC 12 – Rodanthe Breach Long-Term Improvements  
(Bonner Bridge Replacement Project Phase IIb)  
Public Hearing  
TIP No. B-2500B  
Dare County**

**NAME:** Beverly G Boswell

**ADDRESS:** 1705 Sunset Ave KDH NC 27948

**E-MAIL:** bevboswell7@aol.com

**I HAVE THE FOLLOWING COMMENTS AND QUESTIONS:**

I am very concerned about Peoples Property.  
Why are we bowing to the environmentalist?

(This comment sheet continues on the other side.)

July 15, 2016

Drew Joyner  
Human Environment Section Head  
North Carolina Department of Transportation  
1598 Mail Service Center  
Raleigh, NC 27699-1598

Re: North Carolina Department of Transportation – TIP Project No. B-2500  
Phase IIB 2014B Bridge on New Location Preferred Alternative  
Response to Bonner Bridge Update Mailing – Issue No. 9 June 2016

Dear Mr. Joyner:

We are in receipt of the above referenced correspondence, wherein the North Carolina Department of Transportation (NCDOT) provides notification that the Revised Environmental Assessment (EA) for Phase IIB (Rodanthe Breach) of the Bonner Bridge Replacement Project has been released for public review and comment. While it appears that NCDOT has evaluated every imaginable impact to sea turtles, manatees, Atlantic sturgeon, and submerged aquatic vegetation, the EA is silent on what steps would be undertaken to protect the private citizens' homes and properties within the project's NC 12 bypassed area, between the Liberty Service Station and Wildlife Refuge Boundary from further shoreline erosion.

From the NCDOT's own website, it states that NCDOT is serving their mission of "Connecting people, products and places safely and efficiently with customer focus, accountability and environmental sensitivity to enhance the economy and vitality of North Carolina." There are dozens of property owners, citizens, families, in Mirlo Beach that have invested millions of dollars into the North Carolina real estate economy, paying hundreds of thousands of dollars in local taxes, and have helped generate millions of dollars in area business along Hatteras Island. All of these families have bought into the Hatteras Island area with the reasonable expectation that the only road to access our properties will be maintained and, by maintaining this road, NC-12, serving as a buffer to the ocean. Route 12 has been the anchor by which those of us who have invested heavily in the area have weathered numerous storms.

Upon review of the NC-12 alternatives, it appears that the focus of this project, although cloaked as resiliency measures, is primarily intended at protecting the Pea Island Wildlife Refuge and submerged aquatic vegetation in Pamlico Sound. In what NCDOT indicates as "returning the land to the refuge", it is evident that NCDOT is abandoning any future maintenance plans of highway 12. This plan will be financially devastating to every single homeowner in the affected area. NCDOT further indicates that this plan has the support of federal and state environmental resource and regulatory agencies, including the U.S. Fish and Wildlife Service and other agencies that will issue permits for its construction, once again alluding to the true nature of this project's intent of focusing only on soft environmental targets that no one outside of any environmental special interest group would even think twice about.

In capitulating to these special interest groups, NCDOT is failing to serve their mission of customer focus, accountability, and economic vitality. It is also evident that the NCDOT has failed to consider the financial impact this project will have on the local economy – economic revenue, tax generation, benefit-cost analysis of regular beach nourishment in the "hotspots" versus bridge construction and maintenance.

From the EA, these ancillary environmental aspects are being heavily prioritized and punitively, at the expense of the local economy. Investment in the communities, economy and the protection of its vitality is being neglected, specifically, taxpayers are being indiscriminately made "winners" and "losers" with the willful neglect of many taxpaying communities – this does not serve the mission of the NCDOT and projects grave doubt as to the State's commitment towards this goal. The NCDOT, who oversee the infrastructure for the "economy and vitality of North Carolina" will significantly stifle potential investors within the State and Country into the lifeblood of NC communities, contrary to the objectives of their mission, by signaling to all that NC is increasingly hostile to business and negligent of its citizens,

Of grave concern to families that reside within the bypassed area by the Rodanthe "S" curves are statements within the EA, specifically on page 4-15, wherein it states "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." It is evident that the NCDOT has no plan for any further stabilization plans for this area once this project is completed, leaving these families vulnerable and defenseless against financial ruin. Is this customer focus and accountability?

Rather than abandon the families within the Rodanthe "S" curves area, NCDOT needs to implement additional measures that would protect this vulnerable area. Periodic beach nourishment would be a cost-effective measure that can be implemented easily and has a proven track record in that area. Furthermore, NCDOT's own EA indicates that it has been established that beach nourishment would have no significant impact. Besides mitigating coastal erosion and protecting life and property through hurricane and storm damage reduction, beach nourishment projects can provide environmental, recreational, and aesthetic benefits. Nourishing and widening an eroding beach can protect threatened or endangered plants in the dune area; protect habitat behind dunes or next to beaches; create or restore habitat, lost through erosion, for sea turtles, shorebirds, and other beach organisms; and create new nesting areas for endangered sea turtles and spawning grounds for other species. Beach nourishment projects also can create and sustain wider beaches for recreational activities such as fishing and boating and protect infrastructure enjoyed by tourists. Healthy beaches not only are crucial to the nation's travel and tourism industry but also can help revitalize local economies by increasing property values, condominium rentals, and retail sales. Obviously, NCDOT is aware of the multiple benefits of beach nourishment as it has been implemented successfully in the past. However, the NCDOT's indifference to this preferred method of shore protection and environmental sustainability in the context of this project is just another example of failure to fulfill their mission to enhance the economy and vitality of North Carolina.

Another measure that NCDOT recognizes is the utilization of artificial reefs to reduce wave energy. The NCDOT is aware that artificial reef structures can be utilized as submerged breakwaters, providing wave attenuation for shoreline erosion control plus habitat enhancement. The EA is silent on the utilization of artificial reefs (or other shoreline protection measures for that matter), with the disturbing exception being the focus on protecting seagrass and EPH habitats rather than the economic vitality of the local

**TIMBERMILL  
ASSOCIATES, LLC**

community. It is imperative that NCDOT consider the use of this technology at the Rodanthe "S" curves "hotspot" in conjunction with other shoreline protection measures currently being utilized in other areas of this project. Demolished sections of the existing Bommer Bridge, engineered and strategically placed along the coastline in this area could provide a cost-effective solution to protecting the delicate ecosystem just south of the Refuge and provides a much-needed aid to a community that will be cut-off from future storm assistance.

On behalf of the many families and local business slated for economic ruin as a result of this proposal, I implore the NCDOT to revisit their own mission of "Connecting people, products and places safely and efficiently with customer focus, accountability and environmental sensitivity to enhance the economy and vitality of North Carolina." Capitalizing on environmental ideologies that hold no accountability or financial risk in this proposal at the direct expense of the fiscal health of the local Outer Banks economy is a dereliction of responsibility that NCDOT should not accept.

Very Truly Yours,



Shawn C. Brennan  
Christopher M. Brennan  
Michael A. Brennan  
Patrick M. Brennan  
Timbermill Associates, LLC - Family Owned Business

Cc: Honorable P. McCrory, Honorable R. Burr, Honorable T. Tillis, Congressman Walter Jones, Rep.  
Paul Tate

## A Solution for N.C. Route 12 Outer Banks

The basic problem is the undermining of the paved roadway by wave action from the Atlantic Ocean. This erosion process has taken place many times over the centuries and cut inlets from Oregon Inlet to Portsmouth Island. This fact was proven by ground penetrating radar surveys. In the past this was not a problem due to the fact that there was very little human activity on these Barrier Islands. This is totally not the case today. These Barrier Islands are to valuable an asset today to permit this random destruction to take place. So what is the solution to this problem, is it cost effective and will it serve the citizens that rely on these Barrier Islands?

First lets examine the construction of bridges to facilitate access on Route 12. Bridges are very expensive to construct and maintain. There is no direct access from these bridges for the general public a major problem. They do nothing for the existing balance of fresh and salt water in the Pamlico Sound. Bridges are a negative outlook and the surrender of these Barrier Islands to the Sea.

Another solution to this problem that would serve the citizens and the environment better is to prevent the Breaching of these Barrier Islands in the first place. The key to achieving this is to construct a roadway not on the highest ground where it can be easily undermined but at approximately elevation 5 using cross sections as detailed on the accompanying drawings. This design has revetments and pavement layers that allow drainage but are extremely resistant to breaching. This roadway section would need to be constructed over long distances at this elevation in order to allow vast amounts of water to cross from one side to the other without creating excess flow in a single area. This design allows total access to both the Atlantic Ocean and the Pamlico Sound. This design maintains the North Carolina Border with the Atlantic Ocean and also the Barrier Islands preventing them from being Breached.

Robert Brown

## North Carolina Route 12 Stabilization

Is there a viable solution to the maintenance of route 12 on the Outer Banks. My answer is Yes. Man over the last 5,000 years has benefited tremendously by altering or working with nature for the benefit of both mankind and nature. Erosion of the Outer Banks Coast Line presents a historic challenge to the wellbeing of both nature and mankind. No less than the State Border of North Carolina is at risk. Numerous studies have provided a great deal of information but no solutions other than a constant retreat and surrender.

Robert Young of WCU concluded there is no positive plan or outlook. Stanley Riggs ECU concluded the only reason the islands haven't collapsed is because of Human intervention. These conclusions are definitely going to become true if over regulation and lack of innovation are continued. Studies by ECU with ground penetrating radar has revealed many Inlets were cut through the Outer Banks over the last few centuries from Corolla to Portsmouth Island. These inlets closed themselves over time. Development and recreation on the Outer Banks leads one to conclude that this process of breaching is not an acceptable condition. This random chaos can be controlled. These natural resources are too valuable to the State of North Carolina to be left to chance when corrective action can be achieved.

The State of North Carolina should have the Sovereign Right to defend the State Borders at whatever effort it deems necessary. Including the Border with the Atlantic Ocean.

What is the cost of a surrender to the Sea.

1. No highway access to Hatteras.
2. What effect will daily tidal changes have on the Pamlico and Albemarle Sounds.
3. What will an increase in salinity have on future water supply.
4. What effect will daily tidal flow have on all forms of inland plant life.
5. What effect will uncontrolled tidal flow have on inland storm flooding.

These concerns should be addressed satisfactory before a doomsday outcome is allowed to be fulfilled.

With the predicted rise in Sea level over the next century the problem is compounded. But is that an excuse to surrender this treasure to the Sea. Can this roadway and the barrier islands be maintained at a reasonable cost. The answer is YES. Where is the proof this can be accomplished. One of the most apparent examples in this area is the man made islands of the Chesapeake Bay Bridge tunnel. These islands were built in open ocean conditions. Another example is the Zuiderzee dike between Holland and the Netherlands. This causeway is 25 feet above sea level 20 miles long and created 895 square miles of reclaimed land, Flevoland with a population of 400,000 people. These projects are examples of what can be done. Equipment and engineering has improved greatly since then. The Zuiderzee is a flood control dike. The amount of material to build this dike, flood locks and pumps was enormous. N.C. Route 12 on the Outer Banks is not required to serve any flood control function. Compared to the Zuiderzee maintenance of a roadway and shoreline on route 12 should be rather simple. The key to accomplishing this is that this roadway does not have to serve as a dike. This can be achieved by building a roadway low enough that it can be overwashed and not breached. During flood conditions such as hurricanes and extreme north east storms the road would be closed to traffic. After the storm with a little maintenance the roadway could be reopened.

A design to achieve these goals is shown in the accompany plans and models. One of the first areas to prove this design could be in the Pea Island area. Once a workable roadway is constructed then the resources that are constantly used to rebuild route 12 can be used for beach nourishment.

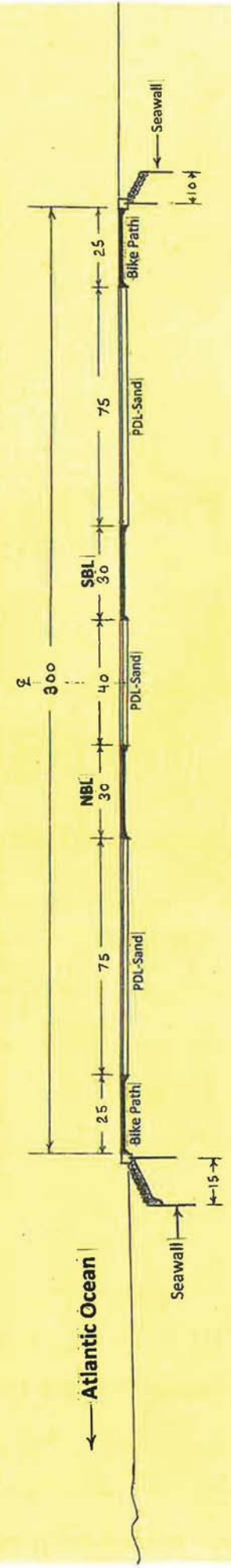
Robert Brown



# A Solution for Maintaining N.C. Route 12 Outer Banks and Preserving the N.C. State Border with the Atlantic Ocean

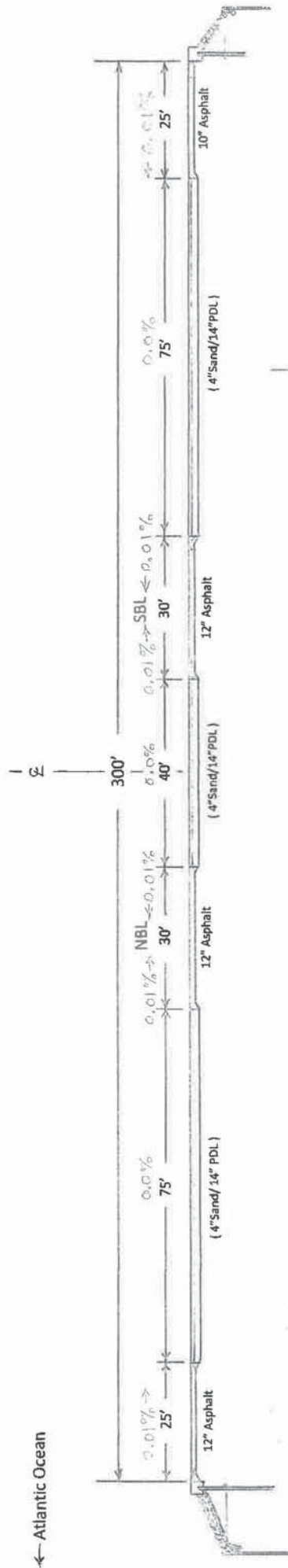


**Cross Section N.C. Rt.12 South of Oregon Inlet**



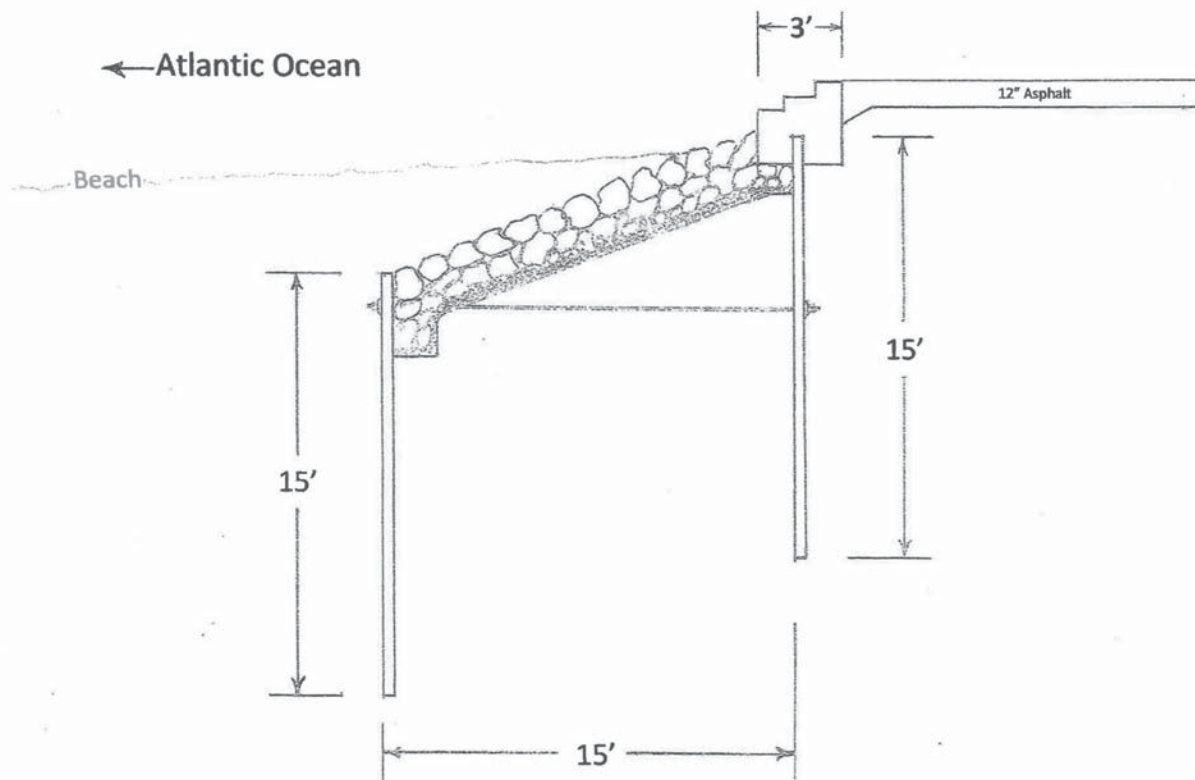
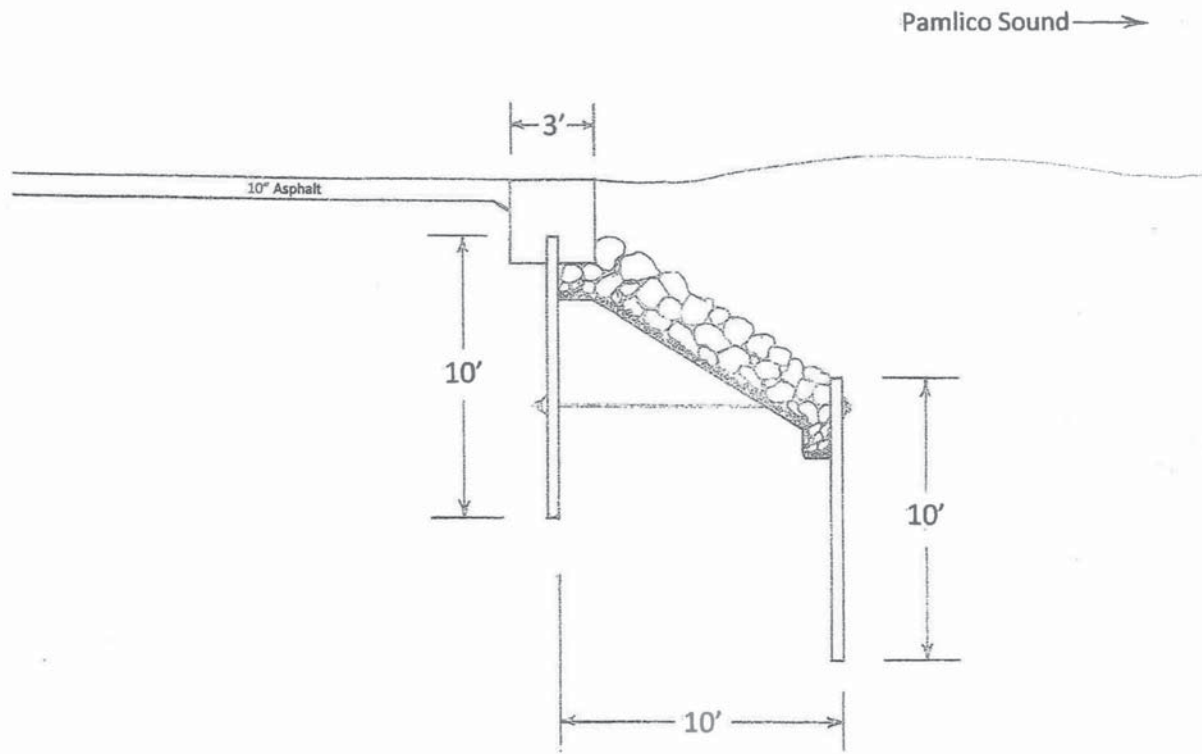
# A Solution for Maintaining N.C. Route 12 Outer Banks and Preserving the N.C. State Border with the Atlantic Ocean

Cross Section N.C. Rt.12 South of Oregon Inlet



These cross sections represent the ultimate desired outcome. All lane widths, median widths and bike paths can be adjusted to correspond to available land requirements. The containment wall structures on each side of this cross section have to be maintained even if they are buried below existing sand elevation.





Joyner, Drew

From: Ralph Buxton <ralphbuxton@gmail.com>  
Sent: Wednesday, June 29, 2016 1:18 PM  
To: Service Account - Public Involvement 2  
Subject: NC 12 - Rodanthe Breach Long - Term Improvements (Phase IIb)

I have a question about the information that presented at the Public Hearing on June 21 in Rodanthe. One of the maps showed the eroded beach in the project area by 2060. Could you please send me a copy of that map and also an explanation of what the erosion rate that was used was based on. Also, do you have any studies or other information on erosion rates in that area that I could get? Thank you.

Ralph Buxton

**COMMENT SHEET**

**NC 12 - Rodanthe Breach Long-Term Improvements  
(Bonner Bridge Replacement Project Phase IIb)  
Public Hearing  
TIP No. B-2500B  
Dare County**

**NAME:** Hannah Byrd  
**ADDRESS:** 23189 Pappy Lane Rodanthe, NC 27968  
**E-MAIL:** hannah.byrd@gmail.com

**I HAVE THE FOLLOWING COMMENTS AND QUESTIONS:**

- This bridge will greatly impact our property value on Pappy Lane — the current plan would not only block our view of the sound and use of the sound, but would add unsightly views where it lets off right next to our house as well as the noise from traffic.
- How do you plan to compensate all of the property owners who will lose property value, renters, and use of the sound?
- It seems that Northern Rodanthe is being sacrificed for the sake of appeasing the SELC and moving forward with the Bonner Bridge. What is the compensation plan for the entirety of Northern Rodanthe which will either be washed away with no more beach hour~~ment~~ or dune care, or will have major loss of property value with a bridge in our back yard? Surely, there must be a plan for this.

All bridge options are undesirable. Is there any way to put the NC 12 Easement back on the table?  
A long-term beach nourishment plan would benefit the residents of Northern Rodanthe, @ would be much less costly to tax-payers, would have less of an impact on the environment, and is the just thing to do.

\*Allowing the SEFC to have this kind of power, to remove access to Pea Island, is UNJUST. Comments may be mailed, faxed, or e-mailed by July 15, 2016 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

You may also drop written comments into the comments box tonight.  
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: Ross Byrd  
ADDRESS: 23189 Pappy Ln. Rodanthe, NC 27968  
E-MAIL: rossebyrd@gmail.com

#### I HAVE THE FOLLOWING COMMENTS AND QUESTIONS:

It seems that beach renourishment (\$25M) has worked. There have been no overwashes since. Why not continue beach renourishment, keep the current road and save millions? Or build a smaller bridge like New Inlet that is protected by beach renourishment? The jug handle bridge is absurd in comparison.

Is there any way that an alternative will be considered? Or has the settlement with SEFC already been cemented so that no other options can be considered?

We are on Pappy Lane and will experience an extreme loss of property value, rental income, and personal enjoyment of a property we have deeply invested in. All for a bridge that makes very, very little sense to us. Please advise. What can we do to change this?  
Thank you.

(This comment sheet continues on the other side.)

**Joyner, Drew**

**From:** James Charlet <hatterasjames@gmail.com>  
**Sent:** Thursday, July 14, 2016 3:34 PM  
**To:** Service Account - Public Involvement 2  
**Subject:** Rodanthe "Jug Handle" Bridge

Dear NCDOT,

As you well know, since the first roads were ever built anywhere, they at one point had to go through someone's property. None of those folks were ever happy, and it is quite understandable. As with SO many things involving huge numbers of people, often what is good for that huge majority is not so good for those taking the brunt. I would emphatically feel the same.

But the vast majority if not the entirety of the thousands of Hatteras Island permearnt residents, the thousands of non-resident property owners, and the MILLIONS of annual visitors her, "Thank You" for finally providing a safe, permanent access to Hatteras Island.

James Charlet

**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 Cohen*

**ADDRESS:**

*2615 S Colony Drive Salvo NC 27972*

**E-MAIL:**

*robber@emb.org*

**I HAVE THE FOLLOWING COMMENTS AND QUESTIONS:**

*Good presentation due in agreement with 2014 B.*

(This comment sheet continues on the other side.)

**Joyner, Drew**

**From:** Conway John W. <john.conway@leonardcompany.com>  
**Sent:** Friday, July 15, 2016 12:06 PM  
**To:** Service Account – Public Involvement 2  
**Cc:** 'giffj@gmail.com'; Daniel Abercrombie (bidnapper@gmail.com); 'Adam Jacono'  
**Subject:** Opposition to the NC 12 Rodanthe Breach Project, Phase 2B Bonner Bridge Project

This note is to express our objection to the planned elevated road structure you are considering to build in the sound to replace a portion of highway 12 in the northern area of Rodanthe. We spend several weeks a year vacationing in the Mirlo Beach area and are devastated to learn of this planned construction.

Please do not build this bridge it will ruin one of the greatest kayak, windsurf and kite boarding locations on the east coast. This location is special for its shallow water, and the possibility of riding winds from almost every possible wind direction. In addition there is a neighborhood of beautiful homes which can be rented by kite boarders and windsurfers for a world class vacation. If this bridge is built it will cut the value of the existing homes in northern Rodanthe in half or more.

If you must build an elevated roadway then build it in the existing highway ROW. An elevated roadway in this location would be much less expensive to build and maintain. It certainly would have much less impact on the environment.

We're not locals, however we've been visiting for many thirty years in spring and summer. A Merlo beach bypass sure seems like an expensive endeavor compared with just elevating the road on pilings for a mile or two.

Thank you for the opportunity to comment on the subject project. The purpose of this letter is to express my opposition to the NC 12 Rodanthe Breach Project, Phase 2B Bonner Bridge Project.

In conclusion, I strenuously oppose the proposed Rodanthe Bridge and respectfully request that a more viable alternative that reduces environmental, economic, recreational, and aesthetic impacts be chosen.



**John W. Conway**  
Manager, Customer Care  
AGUSTAWESTLAND PHILADELPHIA CORPORATION

3050 Reed Lion Road  
Philadelphia - PA - United States  
Tel. +12152811479 - Fax  
leonardcompany.com

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**Joyner, Drew**

**From:** Margie Dimig <madathome1@msn.com>  
**Sent:** Wednesday, June 22, 2016 6:15 PM  
**To:** Service Account – Public Involvement 2  
**Subject:** Rodanthe NEW alternative solution

Good Afternoon

I am a part time resident of North Carolina's Hatteras Island and own a home on Highway 12, MP39. I wish to submit my sincere objection to the newest, already locked in, alternative for the "jug handle". The entire process that ensued to get a replacement for Bonner bridge, the SECRET negotiations conducted with NCDOT and SELC absolutely nauseate me. I retired from the federal government two years ago. I know the process of negotiations. But I have never encountered a time where the government succumbed to an entity and have to do their bidding like puppies with their tails between their legs.

Now that that shameful event is behind us how dare you again allow the conservation groups to tell you where to put the bridge. How dare you allow SUBMERGED ACQUATIC VEGETATION to be your driving decision and not the lives, investments and livelihoods of actual living, breathing human beings. Some of whom have put everything they have into their businesses and now will be destroyed. There is no reason for this alternative when the alternative to go further out into the sound would work.

I have been coming to the outer banks and Hatteras Island for over 50 years. I have seen many changes, not all of them good. Hatteras Island and Ocracoke residents and visitors do need a stable and secure passage on and off the island. But there must be consideration for those that will lose everything in the name of plants. I can't even comprehend that choice.

And then there is Buxton, another very ignored "hot spot". I suppose someday there will be a bridge there also. I envision a time when visitors will only get to wade at the lighthouse as they cross over a bridge because the animals and vegetation will trump human kind.

I pray that while there is still a chance that the people who made these decisions will lay in their bed at night, take a good look at what they are doing to the people impacted, imagine if it was happening to themselves and give those residents in Rodanthe the possibility of hanging onto the dreams they made. I also believe in Karma, good and bad. And those that know this is a wrong choice, well I believe what comes around goes around, eventually.

Margie Dimig

**Joyner, Drew**

**From:** Rick Drumm <rick@outerbanker.com>  
**Sent:** Tuesday, June 28, 2016 9:00 AM  
**To:** Service Account – Public Involvement 2  
**Subject:** NC 12 new bridge proposal

Why can't the new bridge just shadow the current road; building an elevated bridge over top the old road - same foot print - less environmental concerns - and probably a lot less expensive....?? I read that this was the preferred plan but was "scrapped" due to exposure to the ocean?? Aren't most coastal bridges exposed to the ocean in some way? Oregon Inlet bridge for example? It's just not clear to me - and many of the residents and businesses most affected by this proposal - why the causeway or elevated bridge over the existing Rt 12 is not a feasible more realistic, less impactful and less expensive means of providing safe access to the Hatteras Island??

Thank you.

Respectfully submitted,

*Rick Drumm*

Rick Drumm, CRS, GRI, ABR, CDPE  
"Home Work" is what I do Best!

**RE/MAX Surfside**  
4417 N Croatan Hwy Suite 3  
Kitty Hawk, NC 27949  
252-305-9989 CELL  
252-653-5045 eFAX

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**FACEBOOK**

July 12, 2016

Mr. Drew Joyner  
NC DOT Human Environmental Section  
1598 Mail Service Center  
Raleigh, NC 27699-1598

Re: NC12 Rodanthe Breach Project Phas 2B Bonner Bridge Project

Dear Mr. Joyner:

This letter is to express our extreme objections to the planned elevated road structure you are considering to build in the sound to replace a portion of highway 12 in the northern area of Rodanthe. We spend six to eight weeks a year vacationing in the Mirlo Beach area and are devastated to learn of this planned construction.

Please do not build this bridge. It will ruin one of the greatest kite boarding locations on the east coast. This location is special for it's shallow water, and the possibility of riding winds from almost every possible wind direction. In addition there is a neighborhood of beautiful homes which can be rented by kite boarders and windsurfers for a world class vacation. If this bridge is built it will cut the value of the existing homes in northern Rodanthe in half or more. Who is going to compensate those homeowners for this incredible loss of value?

The bridge looks stupid and is stupid. We have 100 miles of fragile coastline. It makes no sense whatsoever to put a jug handle out into the sound to maintain the road for a couple of miles. Hurricanes and big storms will continue to hamper businesses on the Outer Banks from time to time. It's part of life. This bridge won't solve that problem. Yes you will have to replenish the beach and rebuild the road from time to time but on a net present value basis even DOT's conservative estimates show those costs to be far less than building this ridiculous bridge. In the thirty years that we have been vacationing in the Outer Banks this road has only had to be repaired a handful of times.

If you must build an elevated roadway then build it in the existing highway ROW. An elevated roadway in this location would be much less expensive to build and maintain. It certainly would have much less impact on the environment. And overall be much less of an eyesore to residents and visitors in northern Rodanthe. Given these reasonable alternatives it makes absolutely no sense at all to build an elevated roadway in the sound destroying a very very special place.

Thank you for your consideration,

Regards,  


Michael & Beth Dzman  
516 S. Hanover Street  
Baltimore, MD 21201

July 15, 2016

Mr. Drew Joyner  
NC DOT Human Environmental Section  
1598 Mail Service Center  
Raleigh, NC 27699-1598

Re: NC12 Rodanthe Breach Project Phase 2B Bonner Bridge Project

Dear Mr. Joyner:

This letter is to express our extreme objections to the planned elevated road structure you are contemplating building in Pamlico Sound to replace a portion of Highway 12 in Rodanthe. We spend six to eight weeks a year vacationing in the Mirlo Beach area and are devastated to learn of this possible construction.

Please do not build this bridge. It will ruin one of the greatest kite boarding and windsurfing locations on the east coast. This location is special for it's shallow water, and the possibility of riding winds from almost every possible wind direction. It is one of the few places in the entire Outer Banks where that can be done. Due to the extreme exposure the winds are also consistently stronger in this area. Most kite boarders and windsurfers consider this the best location on Pamlico Sound for board sports. There is a neighborhood of beautiful homes which can be rented by water enthusiasts leading to a truly world class vacation. If this bridge is built it will cut the value of the existing homes in northern Rodanthe by at least 50%. Probably more. No one will want to rent these homes. Who is going to compensate those homeowners for this incredible loss of value? As a real estate developer, I suggest you add \$50 million to your budget to compensate these owners for a 'taking' by the state. There is ample precedent for this type of compensation. If this bridge is built it will ruin one of the best areas for this type of recreation. We certainly will no longer travel to this area.

The bridge looks stupid and is stupid. We have 100+ miles of fragile coastline on the Outer Banks. It makes no sense whatsoever to put a jug handle out into the Sound to maintain the road for a couple of miles. Hurricanes and big storms will continue to hamper businesses on the Outer Banks from time to time. It's part of life. This bridge won't solve that problem. Yes you will have to replenish the beach and rebuild the road from time to time but on a net present value basis even DOT's conservative estimates show those costs to be far less than the hundreds of millions of dollars of tax payer money that will be spent to build this ridiculous bridge. In the thirty years that we have been vacationing in the Outer Banks this road has only had to be rebuilt a handful of times. The bridge won't eliminate the state's need to continually remove blown sand from long sections of Highway 12 north of Rodanthe.

An elevated roadway seems totally unnecessary. Maintenance of the existing road has got to be the least expensive alternative. However, if you must build an elevated roadway then build it in the existing highway ROW. An elevated roadway in the existing ROW would be much less expensive to build and maintain. It certainly would have much less impact on the environment. It certainly would be less of an eyesore/encumbrance to residents and visitors in northern Rodanthe. The existing homes along the ROW are already exposed to traffic and noise. Elevating the roadway will have only a marginal effect on the value of these properties. It could be designed in such a way as to allow local traffic access in the same ROW under the bridge.

*sent via email and US Mail*



Given these reasonable alternatives it makes absolutely no sense at all to build an elevated roadway in the sound unnecessarily destroying a very special place for recreation.

Please make us a party of record for this project and keep us of informed of any relevant activity by the State of North Carolina DOT. Please do not build this bridge.

Thank you for your consideration,

Regards,

Michael & Beth Dzaman  
516 S. Hanover Street  
Baltimore, MD 21201  
michaeldzaman@gmail.com  
410-528-8111

PS - This is a revised version of a letter that was mailed to the above address earlier this week.

**Joyner, Drew**

**From:** Michael <michaeldzaman@gmail.com>  
**Sent:** Friday, July 15, 2016 3:15 PM  
**To:** Kel Shipman, Service Account – Public Involvement 2  
**Cc:** Jim Meyer; John Nonenmacher; DK; Al Watson; Andy & Lora Geer DDS; BRUCE HARRINGTON; Bruce Powers; Casey Niemi; Dave Iseri - BABA; Debbie Hage; ecrossle; Glenn Reynolds - Island Creek windsurfer; Javier Garriz; Jean Nonen; Bick Pratt; Gray Hall; Emily Huyhn; Steven Schrems; Steve Ketelhut; Pat Murphy; Eric Rasche; Lynda Johnson; Patty Johnson; Kel Shipman; Kenny McGibbon; Michelle Niklas; Carol King; Brad J Pratt; Chris Miles; Jason Milles; James Schrems; Michael Schrems; Sarah Rilinger; Derek Loomis; Christopher Smashe; Hunter Howard; Darren; Bill Sheffel; Rick; Mitch Mitchell; Bob Montemorano; Luke Davis; Jeffrey McFarland; Kurt Rabideu; Scott Weller; Edward C. Pedersen  
**Subject:** Re: Opposition to the Jug Handle (Today is last day to send your comments)

Well said Kell!!!

----- Original Message -----  
**From:** "Kel Shipman" <keshipman@gmail.com>  
**To:** PublicInvolvement2@ncdot.gov  
**Cc:** "Jim Meyer" <meyer998@me.com>; "Michael" <michaeldzaman@gmail.com>; "John Nonenmacher" <jibeho@aol.com>; "DK" <dougkon@gmail.com>; "Al Watson" <alskissail@gmail.com>; "Andy & Lora Geer DDS" <GeerAndy@yahoo.com>; "BRUCE HARRINGTON" <bruce5219@gmail.com>; "Bruce Powers" <rpowers1@cox.net>; "Casey Niemi" <Casey.Niemi@gmail.com>; "Dave Iseri - BABA" <dlsieri@hgl.com>; "Debbie Hage" <dehpt2@yahoo.com>; "ecrossle" <ecrossle@hvc.rr.com>; "Glenn Reynolds - Island Creek windsurfer" <greynoldsarchitect@gmail.com>; "Javier Garriz" <jgarriz@mac.com>; "Jean Nonen" <sdqj27@gmail.com>; "Bick Pratt" <bickpratt@gmail.com>; "Gray Hall" <grayfin62@gmail.com>; "Emily Huyhn" <etyh1968@gmail.com>; "Steven Schrems" <stevenschrems@gmail.com>; "Steve Ketelhut" <sketelhut@yahoo.com>; "Pat Murphy" <murphy1324@msn.com>; "Eric Rasche" <ericrasche1@gmail.com>; "Lynda Johnson" <uberwaterbug@gmail.com>; "Patty Johnson" <4sonomamma@gmail.com>; "Kel Shipman" <keshipman@gmail.com>; "Kenny McGibbon" <kbcmcgibbon@sc.rr.com>; "Michelle Niklas" <michelleniklas@gmail.com>; "Carol King" <kingcarolh@yahoo.com>; "Brad J Pratt" <bradley.j.pratt@gmail.com>; "Chris Miles" <c.j.miles.11@gmail.com>; "Jason Milles" <jmilles.jason21@gmail.com>; "James Schrems" <jschrems@charter.net>; "Michael Schrems" <mikesaboarder@me.com>; "Sarah Rilinger" <srilinger@gmail.com>; "Derek Loomis" <dloomis@starpower.net>; "Christopher Smashe" <chris@excelontheweb.com>; "Hunter Howard" <huntershoward@gmail.com>; "Darren" <DHoward@wje.com>; "Bill Sheffel" <ysheffel@starpower.net>; "Rick" <rickria@yahoo.com>; "Mitch Mitchell" <Mitch.Mitchell@relayhealth.com>; "Bob Montemorano" <rmontemorano@gmail.com>; "Luke Davis" <lukewdavis@gmail.com>; "Jeffrey McFarland" <jmcfarland86@gmail.com>; "Kurt Rabideu" <kurt.rabideu@fastmail.fm>; "Scott Weller" <waterline71@hotmail.com>; "Edward C. Pedersen" <ecpedersen@milegal.org>  
**Sent:** 7/15/2016 12:38:23 PM  
**Subject:** Opposition to the Jug Handle (Today is last day to send your comments)

**This letter opposes building the "Jug Handle" bridge, in favor of leaving "well enough for now" alone! Please join me sharing your thoughts at the email above ([Publicinvolvement2@ncdot.gov](mailto:Publicinvolvement2@ncdot.gov)). Today is the cutoff date. Thank you.**

The Outer Banks are unique in that the islands are not anchored to offshore coral reefs like some other barrier islands and as a consequence they often suffer significant beach erosion during major storms. **This is a fact.** Not even one engineering firm, government agency or environmental expert has even once predicted the exact location of a major breach in the island chain. OBX is a different place calling for different thinking. Solutions on this island have perhaps a 30 year window of success at best and more likely significantly less.

I write this letter as a small reminder that sometimes, the "do nothing" scenario is the best course of action. In other words, **build the temporary bridge at the cut and keep repairing the weak parts of the road as they happen until completely forced to take more serious action.** As I understand it, this was the first plan of the DOT until the Environmental groups held the Bonnor Bridge repairs hostage on this very point. Their goal is to remove all roads from Pea Island and if we want to appease them, then a ferry would be a much better solution.

Please hear the voices of the property owners of Mirlo Beach and property owners just south, the thousands of visitors that rent these homes solely because of their location on the sound and access to clean wind and unobstructed sunset views, and finally the tax payers being asked to invest a crazy amount of money. The current plan to implement the Jug Handle not only spends too much money, it wipes out many millions of dollars of property value, income and annual tourism dollars, making **it the costliest compromise that doesn't make anyone happy on either side!** So let's please not make this JUG HEAD move.

I believe that the "Do Nothing" scenario, in this case is the best solution for all (Except perhaps the environmentalist who will not be happy until nobody has access to PEA ISLAND).

If the environmental engineers are correct and beach erosion by 2060 is where they say it will be, then none of this matters anyhow because 1/2 of the island at the entrance to Rodanthe will be gone in 44 years. I say let nature give them what they want, at the pace that nature wants to give it them, but not sooner!!

Thank you.

Kel Shipman  
Engineer  
Nature Lover  
Kiteboarder  
Frequent OBX visitor and money spender

June 14, 2016

Mr. Drew Joyner  
Human Environment Section Head  
NCDOT  
[publicinvolvement2@ncdot.gov](mailto:publicinvolvement2@ncdot.gov)

Mr. Joyner

We are opposed to a bridge being built in the sound in Northern Rodanthe. The road should be elevated through the Rodanthe/S-turn "Hot spot" in the existing road way and built to 25-year standard like the "New inlet" bridge, reducing costs. The island is too dynamic to support 50-year planning. The route at the North end of NC12 could have a "Jug Handle shape" immediately north of Mirlo Beach to appease the SELC, providing them with the anchor for their 17-mile bridge and minimizing the effect on Northern Rodanthe. All of the issues presented below will still pertain.

Everyone wants a better and more secure transportation corridor through the outer banks. We understand its vital for business, commerce, and emergency access. What we don't want is to feel we have taken a back seat to closed door meetings and agreements made out of the light. These public hearings appear to be after the fact and to inform us only.

This process has led many in the local community of Rodanthe to question the motives and processes that have occurred with decisions regarding the Rodanthe bridge. We "the little people" feel like we have been left out of a process that will immediately and distinctly effect our futures, and our children's futures. We feel that we were given up as a bargaining chip while dealing with the SELC. This will be a life changing issue for many of the local people. Many of the homes in the area will foreclose because of reduced rental income the owners have come to expect, and property values will plummet for the next several years.

Decisions Without Representation

During the litigation between NCDOT and SELC in 2015, decisions were made by a group of involved parties; i.e. USFS, Fish and game, Core of Engineers, Hatteras Electric Coop etc. that effect the people who live immediately adjacent to the project. Please explain why negotiations to change the "Preferred Alternate" routing did not include a representative from the community of Rodanthe? While we were not part of the lawsuit, we are the ones who will have live with the decision made by the committee. This decision (placement of the bridge and use of taxpayer dollars) is a worse case example of group speak and caving to special interest at the cost of a few.

What were the deciding issues that turned the primary selected alternative route; placing an elevated roadway in the existing NC12 easement, into a non-viable alternative? How much money was spent on that plan before and after the SELC brought the new litigation with the culmination of a "new preferred route"?

During October and November of 2015 core sample drilling was performed along the inside of the study zone. It appeared that drilling was only performed along the inner most section of the study area and not in the whole study zone. Why was core drilling not performed at the distal/west end of the study area, if a final decision on bridge location had not been already decided. (2013 Alternative)

In the latest flyer sent to some homeowners, the decision has been made to change the routing of the bridge to the closer to the shore route "Jug Handle" version 2014B. This decision was made on the basis of effect on aquatic plants. As a person who lives here full time, and spends hours each day in the Sound, it is apparent the aquatic plants also exist in the area where you are proposing the new 2014B version, its dependent on the time of year and temperatures. That rationale only works as assessment to another entity in the decision making committee. So the 2013 version of the bridge was thrown out because of aquatic plants location and amount, moving the bridge location closer to the shore. Who made that decision and why does it trump the homeowners' that live immediately adjacent? WE ARE ADAMANTLY OPPOSED TO MOVING THE BRIDGE CLOSER TO THE SHORELINE THAN THE 2013 BRIDGE VERSION. Run off pollution, Noise, light pollution, loss of view, restrictions of use, are all reasons for our position.

#### Wind Sports and Sound Use

This area is one of 4 major wind sport activity areas on Hatteras north of Buxton; the Canadian Hole, Real Water Sports, Kitty Hawk and Northern Rodanthe. On any windy day you will find many wind sport enthusiasts using the area. These people are many of the visitors" that rent the homes and pump money into the local economy. Real and Kitty Hawk use the area at the North end terminus of the bridge area for kite surfing lessons. The bridge would be a disaster for wind sports. The height of the bridge itself would change the wind currents and natural flow over the island. Since these people have been using this area since the 1980's many will continue to come, attempting to use the area. What will the rules be regarding the bridge and wind sports? How close will wind sports be allowed? Who will enforce it? Will it shut down the entire study area? Has there been research into the dollar amount loss and safety issues this will cause?

#### Sound Water Quality

We now consume food caught in the sound, crabs, fish, clams and oysters. What effect will the bridge have on the quality of these food sources? Not taking into consideration the damage to the area during construction. Increased concentrations of pollution from tires, fuel and oil run-off into the sound poisoning the water. What type of documentation exists that supports the bridge relating to this? Did the environmental assessment address these concerns?

#### Migratory Birds

In September and October Cormorants by the thousands migrate south exactly where you are proposing the bridge. Why is it better for the birds to have the bridge in the sound and not down the NC 12 easement. What documentation exists to support the bridge relating to this?

#### Feeding birds

There are several groups of Pelicans that use this bay daily for feeding. They arrive in the morning again in the afternoon. What effect will the bridge construction have on their feeding habits.

This year has been seen a bumper crop of Horseshoe Crabs mating in the area. What effect will the bridge have on them, and what documentation exists to support it.

#### Notification of Public Hearing

Many of the people that live in the immediate area of the bridge are second home owners and live long distances from the area to attend public hearings at short notice. We feel that NCDOT has done a poor job in keeping the people most affected by this decision informed. Several of the homeowners on the Sound received flyers/notification in the mail. My wife and I being located one house from the Sound have received no notification regarding the public hearing other than word of mouth in the neighborhood. While this project has taken on wings since the settlement with the SELC, it is important everyone affected is notified. Have all public hearing notification guidelines been observed during this process?

In closing, we are strongly opposed to a bridge in the sound, especially as close to the shore your current 2014B version. We feel that NCDOT's previous decision (raised highway in existing NC12) was made in the best interest to all involved. It appears at this point special interests have more influence on the decision than the local residents. LOCAL LIVES MATTER, SAVE OUR SOUND!

Regards,

Guy & Sandy Finn  
23163 Corbina Dr W  
PO BOX 24  
Rodanthe NC 27968-0024  
951-313-8690

July 11, 2016

Mr. Drew Joyner  
Human Environment Section Head  
NCDOT  
publicinvolvement2@ncot.gov

Mr. Joyner,

We adamantly oppose the Rodanthe Bridge in the Pamlico Sound. We believe there are other viable solutions that would have less negative impact to the community. We submitted a letter prior to the open house/public meeting and now request additional information from questions that we have after talking with NCDOT staff at the community meeting.

#### Notification and Public Hearing

We, and most (if not all) of our neighbors, were not notified by mail of the public meetings held in January 2014 or June of 2016. Many of the people that own homes in this area are part time residents or absentee owners. Hopefully, you are aware that Rodanthe more or less shuts down in January and very few people are available for the NCDOT's meetings as they were scheduled. While notification may have been accomplished via newspaper postings, public notices, local mail, etcetera, most property owners didn't receive this information in a timely manner; moreover, there were very few people (locals or remote owners) present to verbally spread the word. The first question and a request:

- 1) Is there any documentation on the notification to individual property owners for the January 2014 meeting via US mail?
- 2) If yes, we'd like a copy of the mailing list and the notification letter.

There are approximately 100 Rodanthe properties that fall into a reasonable radius for notification. The 2014 notification process is an important component of the community's concern. We were told verbally and in writing that the 2014B project's final decision is the result of involved agencies and public input derived during the January 2014 meeting.

The 2016 Rodanthe NCDOT Preferred Alternative community meetings at the three locations June 20, 21, and 22 were open houses designed to inform, relay information, and allow staff to answer questions about the project as finalized. While we think the staff did an admirable job presenting the preferred alternative, they were not there to receive input and help Rodanthe formulate a decision because the decision had already been made. The fact that the 2014B project is supposedly commissioned and moving forward came as a shock to ourselves and many in the community.

The June meetings had no decision makers present that the community could talk with or influence for change. While we were allowed verbal comment to NCDOT staff, there were no minutes of a public hearing recorded.

During these meetings, we were told that the final decision for the 2014B bridge version was based on the involved (state & federal) parties and public input gained from the January 2014 public hearing.

Again, since many of us were not informed in January 2014, there was not sufficient community input on the final decision. A second question and request:

- 3) Are there minutes available from the 2014 public hearings for us to review?
- 4) If yes, we'd like a copy of notes from those hearings or meetings and a list of state and federal employees in attendance.

#### 2014 B Alternative

The proposed Bridge is too close to shore and will have severe financial, visual, noise, and recreational impacts to the immediate homes located in the area. Additionally, many of the homes are vacation rental BUSINESSES that rely greatly on Pamlico Sound as a recreational area for wind surfers, kite boarders, sail boats, and other water sports enthusiasts. If 2014B is allowed to be built, it will severely impact these owners' ability to rent these properties. These rental businesses also provide customers that support grocery, retail, and rental businesses in the area, which also generate local and state taxes. Much of Rodanthe community's revenue and tax base will be lost if a Sound side bridge is built.

We were told at the 2016 community meeting that the reason for the bridge re-location was to minimize the effect on EFH (Environmental Fish Habitat) and SAV (Submerged Aquatic Vegetation). In reviewing the handout that was provided at the public meeting referencing Page 12, Table 1 Essential Habitat, the difference in the two proposals are: 2013, 11.23 acres of permanent impact on EFH & SAV, and 2014B 10.50 acres of permanent impact EFH & SAV. A difference of 3/4 of an acre of EFH and SAV from the 2013 version to the 2014B version! Next to the last question and a request:

- 5) The Rodanthe community, as well as us, would like to know who exactly made these decisions?
- 6) We request a list of the state and federal offices, including contacts within, that participated in and drove the 2014B solution to NC-12's reconstruction.
- 7) Who represented the local community while state and federal bureaucrats made these decisions?

#### Preferred Alternative

What exactly was the process that changed the preferred alternative from building an elevated roadway in the existing NC12 right of way to a bridge in the Pamlico Sound? We feel that a much scaled down version of the elevated section coming into Rodanthe would be less expensive and with beach nourishment would be a viable option.

The state's isolated decision process (minimizing local input) is the reason the community feels threatened, angry, and frustrated about the way project 2014B became the preferred alternative. Adding to Rodanthe's angst is that the project is proceeding with construction in an unusually expedited manner. If the community had been represented during litigation, some of these issues may have been addressed earlier building community support for alternatives to the 2014B project.

We look forward to your response to these questions and requests.

Sincerely,

Guy and Sandy Finn  
PO BOX 24  
23163 Corbina Dr. West  
Rodanthe, NC 27968-0024  
(951) 313-8690  
phoschekguy@gmail.com

---

**Joyner, Drew**

**From:** Roger Fitzgerald <fitz@fitzgeraldengineeringinc.com>  
**Sent:** Saturday, July 02, 2016 7:31 AM  
**To:** Service Account – Public Involvement 2  
**Subject:** NC12 Rodanthe Breach Project Phase 2B Bonner Bridge Project

NCDOT,

Thank you for proposing a solution to the erosion at S-curves. The project as designed should give 40 years of service for NC12 and that is as much as we can expect for a barrier island as the sea level rises.

I've been visiting the Avon area since 1985 and I would like to see NC12 stay open.

My question is this: What is the elevation of the bridge/ causeway that curves out in the sound?

Thank you,

Roger

**Joyner, Drew**

**From:** Michael E C Gery <gerymbx@gmail.com>  
**Sent:** Monday, July 11, 2016 10:37 AM  
**To:** Service Account – Public Involvement 2  
**Subject:** Rodanthe Breach Improvements

Thank you for presenting the options recently for making improvements to NC12 in the Rodanthe area, and for taking comments. With grave reservations, I support the "preferred alternative" of the 2014B Bridge on New Location.

My reservations extend from two previously stated positions related to this project:

1. The 17.5-mile bridge between Bodie Island and Rodanthe (now considerable "not affordable") would have accomplished the goals of the NCDOT and all state and local government entities at the time they all approved it, and it certainly would have been "affordable" in today's terms, and in fact would be in operation today. The multi-phased, ill-planned approach NCDOT has taken since then is not only much more expensive than the Long Bridge, but also more disruptive to local business and the environment, and it will surely be destroyed in coming storms.

2. It is impossible to consider the economics and efficacy of these phased "improvements" to NC12 here without seeing a total plan and picture of the project. Phasing in these projects presents continual surprises and cannot fairly estimate the costs and environmental impact. Planning in this way also reinforces the general opinion of the NCDOT as short-sighted, and without vision, as evidenced by dropping the Long Bridge.

\*\*\*\*\*  
Michael E.C. Gery  
Roanoke Island, N.C.

**Joyner, Drew**

**From:** rob <girfrj@hotmail.com>  
**Sent:** Friday, July 15, 2016 10:53 AM  
**To:** Service Account – Public Involvement 2  
**Subject:** Rodanthe/Mirlo Beach Bridge Disaster

Given the information I have reviewed for this proposed bridge project I am greatly opposed to it and believe it to be a great misuse of tax payer money. Given the highly viable alternative options, the only reason I can think of to go with this bridge option is political fraud.

I am not familiar enough with all the details and facts, so I cannot intelligently speak in detail on the matter. But others are and I want to be put on record advocating that their voice be heard.

I love the OBX and spend 1-2 weeks a year with my family there for the past 17 years. I don't think the bridge will take away from the aesthetics of the area but I do believe a more economical solution is all ready available. Also, I think the proposed traffic routing for this bridge will result in significantly more traffic jams.

Thank you for reading.

Rob

**Joyner, Drew**

**From:** LINDA GRANDE <linda@counselingheals.com>  
**Sent:** Thursday, July 14, 2016 8:06 PM  
**To:** Service Account – Public Involvement 2  
**Subject:** NC12 Rodanthe Breach Project Phase 2B Bonner Bridge Project

Dear Mr. Joyner –

I am writing this letter to let you know the concern my husband and I have about this bridge. We have been vacationing in the area for the past 20 years.

We are concerned about the environmental impact this bridge will have in the shallow waters near shore. With the expense of this project we wonder if all other alternatives have been fully explored.

This bridge will ruin a beautiful world class location for windsurfing and kiteboarding. With that the area will see a decrease in revenue as the tourists that participate in these sports will go elsewhere.

Also, of concern is the impact on the homes, how they will be financially impacted from having their beautiful sound view eliminated.

We want to go on record that we are opposed to this plan. Also, please include this email for future updates about the decisions.

Sincerely,  
Linda M. Grande  
Paul P. Cudome  
2305 Bright Leaf Way  
Baltimore, MD 21209  
410-456-0739

**Joyner, Drew**

**From:** bette gray <bettegray25475@gmail.com>  
**Sent:** Friday, July 15, 2016 12:04 PM  
**To:** Service Account – Public Involvement 2  
**Subject:** Rodanthe Bridge

Dear Sir:

I am writing to advise you that I am in total opposition to the NC Department of Transportation's proposal to build a bridge in the Pamlico Sound in Northern Rodanthe.

I am a native of Hatteras Island, full time resident of Waves and owner of a soundfront home in Northern Rodanthe. According to information posted in the news media and several meetings held locally it appears the bridge proposal was already confirmed before public knowledge.

For those of us who call this area home a loss of our environmental assets will cause a loss in tourism and many of us hardships to survive in these northern villages. There will be a great loss in visitors and income from rental houses, loss from local business, loss of jobs and tax payer dollars.

This area is a major wind sport activity area, boating and fishing. I am strongly opposed to a bridge being built in the sound. There are too many economic issues that will destroy this area and effect Hatteras Island.

SAVE OUR SOUND,

Bette R Gray  
POB 37  
Rodanthe, NC 27968  
bettegray@gmail.com  
252-987-2495

**Joyner, Drew**

**From:** DaveNCL@aol.com  
**Sent:** Friday, July 15, 2016 3:36 PM  
**To:** Service Account – Public Involvement 2  
**Cc:** Fearing, Malcolm K; Gray, Walt L; Tenyson, Nicholas J; McCrory, Pat; Rep. Paul Tine; Senator Bill Cook; warrenj@darenc.com; damny.couch@hattersrealty.com; allenb@darenc.com; beverly.boswell@darenc.com; Woodard@darenc.com; garyg@darenc.com; jshea@darenc.com; margarette.umphlett@darenc.com; wallyo@darenc.com  
**Subject:** Jug Handle Bridge Planned for Rodanthe, NC

David A. Hadley  
2604 Wingate Hill Court  
Raleigh, NC 27606

July 15, 2016

Mr. Drew Joyner  
NCDOT – Human Environment Section  
1598 Mail Service Center  
Raleigh, NC 27699-1598

Re: Jug Handle bridge planned for Rodanthe, NC

Dear Mr. Joyner:

My son, Christopher Hadley, his wife Krystine and I own the 6 bedroom sound front beach house property at 23176 Pappy Lane Rodanthe, NC. Our property is in very close proximity to the proposed "jug handle bridge" that NCDOT plans to build in the Pamlico Sound over the next several years. From available plans, it appears that the landing for the bridge will be within about 30 feet of our home and thus our home will bear the greatest negative impact from the planned bridge (and the NCDOT staff agreed with this assessment at the public hearings held this past June). Some of the anticipated impacts include:

- A dramatic increase in noise level due to all the traffic that enters or leaves Hatteras Island flowing within a few feet of our home
- Loss of privacy
- Loss of the serene natural beauty of the Sound (as the bridge is planned to circle around the back of our home)
- Loss of rental income due to the factors above
- Loss of kite boarder rentals during "off peak weeks" as these folks have advised that our house will be much less desirable for kite boarding if the bridge is built due to the physical constraints that a bridge would impose
- Significant loss of rental income during the construction phase of the project
- Loss of property value due to the above factors

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Our property is very profitable and generates about \$100K in gross rental income per year, and both the rental income and property value are certain to fall if the bridge is constructed. For these reasons we are adamantly opposed to the proposed bridge and we will be compelled to seek legal recourse if changes are not implemented.

Acceptable mitigation would include any, or a combination of the following:

- Implement beach nourishment in lieu of spending hundreds of millions of dollars on a bridge that local residents are adamantly opposed to (this would be the most desirable and cost effective option)
- Move the landing for the bridge north of Pappy Lane (and preferably north of Mirlo Beach)
- Provide cash compensation in consideration of the reduced property value and loss of projected rental income
- Purchase our property at market value and at a price point that would enable us to purchase a comparably equipped property in the area with a similar rental income history

We hope that you can empathize with our situation, and we remain hopeful that this issue can be resolved without any need for legal remediation.

Sincerely,

David A. Hadley

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**Joyner, Drew**

**From:** Ted Hamilton <tedsalvo@earthlink.net>  
**Sent:** Tuesday, June 14, 2016 9:12 AM  
**To:** Service Account – Public Involvement 2  
**Subject:** RE: Rodanthe (S-Curve) Bridge Public Hearings

Thanks,

My only public comment for the record is that I want to see the Liberty Gas Station and Store to remain so I support the current preferred alternative (2014B Bridge on New Location Alternative) but do not support any revision to that current preferred alternative alignment that would cause the Liberty Gas Station and/or store to be closed.

-----Original Message-----

**From:** Service Account – Public Involvement 2  
**Sent:** Jun 14, 2016 8:31 AM  
**To:** Ted Hamilton  
**Subject:** RE: Rodanthe (S-Curve) Bridge Public Hearings

Mr. Hamilton,

The information you linked is a bit dated, but the conclusion is the same. Current information is located at [www.ncdot.gov/projects/NC17Rodanthe](http://www.ncdot.gov/projects/NC17Rodanthe). Current project maps, including the preferred alternative (2014B Bridge on New Location Alternative) are located under the "Public Involvement" section. The Liberty Gas Station should remain with that alternative. Please let me know if you need anything else.

Sincerely,

Drew Joyner

**From:** Ted Hamilton [mailto:[tedsalvo@earthlink.net](mailto:tedsalvo@earthlink.net)]  
**Sent:** Thursday, June 09, 2016 1:14 PM  
**To:** Service Account – Public Involvement 2  
**Subject:** Fw: Rodanthe (S-Curve) Bridge Public Hearings

I may have found what I'm looking for.

Could you confirm that this is the currently proposed alignment that looks as if the Liberty Gas Station would be spared.

<http://www.ncdot.gov/projects/bonnerbridgephase2/download/B22500BridgeNewLocationAlternativeFinal.pdf>

-----Forwarded Message-----

>From: Ted Hamilton  
>Sent: Jun 8, 2016 12:43 PM  
>To: PublicInvolvement2@ncdot.gov  
>Subject: Rodanthe (S-Curve) Bridge Public Hearings  
>  
>  
>  
>I will be unable to attend the June public hearings.  
>  
>Could you send me a link that will show me the details of the current Rodanthe terminus at NC-12.  
>  
>My interest is that the Liberty Gas Station (Mac's Store) is the only year round gas station in the Tri-Village area. I would not like to see that gas facility eliminated.  
>  
>  
>

>Cheers Y'all  
>  
>Ted A. Hamilton  
>(aka Salvo Jimmy)  
>Salvo NC / Hampton VA

Cheers Y'all

Ted A. Hamilton  
(aka Salvo Jimmy)  
Salvo NC / Hampton VA

Cheers Y'all

Ted A. Hamilton  
(aka Salvo Jimmy)  
Salvo NC / Hampton VA

Email correspondence to and from this sender is subject to the N.C. Public Records Law and may be disclosed to third parties.

Cheers Y'all

Ted A. Hamilton  
(aka Salvo Jimmy)  
Salvo NC / Hampton VA

**Joyner, Drew**

**From:** Krystine Hilton <Krystine.hilton@midtel.net>  
**Sent:** Friday, July 15, 2016 8:30 PM  
**To:** Service Account – Public Involvement 2  
**Subject:** FW: Feedback on jug handle bridge for NCDOT

It looks like someone had a typo in an article that I got this email address from, I hope due to this you will still accept my comments.

**From:** Krystine Hilton [mailto:Krystine.hilton@midtel.net]  
**Sent:** Friday, July 15, 2016 4:09 PM  
**To:** 'publicinvolvement2@ncdot.gov' <publicinvolvement2@ncdot.gov>  
**Subject:** RE: Feedback on Jug handle bridge for NCDOT

Ref: Jug Handle bridge planned for Rodanthe, NC

Dear Sirs,

My husband Christopher Hadley and I, Krystine Hadley, also own a 6 bedroom soundfront beach house property at 23176 Pappy Lane Rodanthe, NC. It is our understanding that you propose to build a bridge that will impact our property significantly. This was confirmed at a meeting in recent meeting in Manteo, NC on where the presenter confirmed that our property in fact would be the most negatively impacted property in the current proposal. We take issue with this proposal for several reason, none inconsequential. Some of the anticipated impacts include:

- Loss of property value due to the above factors
- Loss of rental income
  - Loss of kite boarder rentals during "off peak weeks" as these folks have advised that our house will be much less desirable for kite boarding if the bridge is built due to the physical constraints that a bridge would pose
- A dramatic increase in noise level due to all the traffic that enters or leaves Hatteras Island which will have a direct impact on our property.
- Loss of privacy
- Loss of the serene natural beauty of the Sound (as the bridge will circle around the back of the home)

Our property is currently very profitable and generates about \$100K in gross rental income per year, and both the rental income and property value are certain to fall if the bridge is constructed. For these reasons we are adamantly opposed to the proposed bridge and we will be compelled to seek legal recourse if changes are not implemented.

Acceptable mitigation would include any of the following:

- Implement beach nourishment in lieu of spending hundreds of millions of dollars on a bridge that the local population is adamantly opposed to (this would be the most desirable option)

- Move the landing to an already owned state property either north or south of Pappy Lane
- Purchase our property at appraised value, under guidelines spelled out in

We remain hopeful that this issue can be resolved without any need for legal remediation.

Sincerely,  
Christopher Hadley  
Krystine Hadley

**Joyner, Drew**

**From:** Thomas Hollowell <thollowell@designdata.com>  
**Sent:** Friday, July 15, 2016 8:26 AM  
**To:** Service Account – Public Involvement 2  
**Cc:** Michael Dzaman  
**Subject:** Rodanthe bridge connector

Please consider the following statement into the record.

What a complete mis-guided project this will be if allowed to go forward. This project was a sell out to get the Southern Environmental Law group off your backs so that the Bonner bridge could be replaced. Not sure who wears the pants at NCDOT, but now that you're well on your way with the Bridge replacement, go back and get the deal for the "Jug Handle in the sound" off the books.

Any land owner in the affected area will have their property value significantly reduced, the environmental impacts will be devastating, and obviously solution to the problem (elevate the road within the existing ROW over the washout prone areas) will have been scuttled.

Thomas Hollowell  
208 Old Ferry Rd  
Elkton MD  
21921

Mr. Drew Joyner  
NCDOT, Section Head, Human Environment Section  
1598 Mail Service Center  
Raleigh, NC 27699-1598

Dear Mr. Joyner:

I am writing on behalf of the MirloBeach Homeowners Association (MBHOA) as authorized by their board of directors (of which I am a member) to comment on the Rodanthe Bridge Alternatives, both the New Location Alternative (NLA), which is the current NCDOT preferred alternative, and the Existing Easement Alternative (EEA), which is the previous NCDOT preferred alternative.

**The MBHOA opposes both bridge alternatives and favors beach nourishment as the long-term solution for protecting NC 12 in northern Rodanthe.** A 2-mile bridge in either location defies common sense. However, these options are believed to be the most expedient politically and from a regulatory perspective. This seems nothing short of a tragedy of governance and a mockery of the Merger Process, which has been a laudable effort to create a consensus among many agencies with divergent missions. We implore NCDOT and the Merger Team to do what is best for the long term, for the citizens of Dare County, and the millions of visitors to Hatteras Island from all over the world. The reasons for our position are summarized below. Over the past 5 years, we 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, Beth Smyre, Jerry Jennings, Warren Judge, and a number of local residents and retailers). In this public document, we prefer to not name individuals as information sources; however, we would be happy to provide further details about our sources, our analyses, and our organization upon request.

**1. Cost effectiveness and flexibility.** The initial estimated cost of a Rodanthe Bridge (circa 2013) was approximately \$100 million; the next year the estimated cost had grown to \$200 million. We find it hard to believe that the cost of a bridge to be constructed in 2017 or 2018 is still \$200 million. Moreover, this cost is incurred immediately and protects only 2 miles of NC 12. It has no option value. Additionally, maintenance cost in the sound or beach/ocean will be very high. For the NLA, we wonder if the design specifications require standards sufficient to sustain inlet formation anywhere along the bridge that might change the water depth from 3 - 6 feet to 10 - 20 feet. Beach nourishment on the other hand, is less expensive and provides tremendous flexibility. It is a solution that can be applied quickly to anywhere on Hatteras Island where NC 12 might be damaged. From a purely financial perspective, it is very attractive. For example, a \$200 million "endowment" to support nourishment would \$8 million per year (at 4% return rate), which more than pays for the 3-year expected life of the recent emergency nourishment. Informal analyses of the emergency nourishment after 21 months (both our own and that of one of the coastal scientist named above) suggests that this level of nourishment will protect NC 12 for 5 - 10 years. If that proves true over the long run, nourishment is MUCH less expensive. Moreover, in this endowment calculation, the \$200 million would always be available in the future to help build a bridge if nourishment fails to be sustainable, or if there is an

unanticipated natural disaster because the ongoing nourishment is being funded only by returns on the endowment. Other forms of present value analyses lead to similar conclusions. More generally, 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). We realize that things are different in the public sector, but still ... that is no excuse for financial mismanagement.

**2. The current process (i.e., Revised Environmental Assessment (EA) for Phase IIb of the Bonner Bridge Replacement Project) is out of date, unfair, and possibly illegal; a new, thorough, evidence-based analysis of the alternative solutions is needed.** 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. In the words of one of the experts, it was based on "back of the envelope" calculations. Much more directly applicable data is now available from the emergency nourishment of this hot spot and from the Nags Head nourishment project. The opinions of the panel experts can now be informed by hard data. Informally, the opinion of virtually everyone on Hatteras Island, including people close to the decision makers, is that this process is a charade designed to make good on deals cut behind closed doors by NCDOT and SELC.

**3. Then NCDOT Secretary Tata promised that beach nourishment would be re-evaluated in light of new data.** In a letter from Secretary Tata (April 10, 2013) that responded to our letter requesting further study based on data from nourishment, he repeated the arguments for the NCDOT preferred solution (which is no longer preferred) and then said, "*Nevertheless, NCDOT will review the recent Nags Head beach nourishment project, data collected by the USACE, and other relevant information to determine if further consideration of a long-term beach nourishment alternative is warranted.*" Governor McCrory's name is on the letterhead along with Tata's, and he was copied the letter. We expect the State of North Carolina to honor its explicit commitments.

**4. Bridges create a serious public safety hazard.** Currently, both the sound and the ocean are aquatic playgrounds almost all year long. There are no hard structures in these waters. The NLA bridge puts hard structures into the sound; the EEA bridge is designed to be on the beach and in the active ocean with 10 years as erosion proceeds unchecked. In the sound, such structures are serious hazards for boaters when the weather is bad. Boats in distress will not simply be grounded in shallow water (which is what happens now), they face the real risk of being smashed against the pylons. The bridge will also become a hazard to kite boarders for similar reasons, and because kite boarding is an extreme sport and boarders will be strongly tempted to use the bridge for stunts. For the EEA bridge, most beach users will avoid the hard structures, but many children and adults, surfers, boogie boarders, and swimmers will find these structures attractive and entertaining once they are on the beach and in the water. 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 the formation of stable, deepened rip currents will create unexpected hazards. These outer banks beaches are unprotected by lifeguards, and we 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 injuries and fatalities will increase. If bridges were a cancer risk, the NLA and EEA would have been ruled out long ago.

**5. Bridges reduce public access to Hatteras Island.** Although the stated mission of the USFWS for wildlife refuges emphasizes protecting natural habitats, especially endangered species, it does include providing benefits to the general public. NC 12 through the Pea Island Wildlife Refuge currently provides a tremendous public benefit. Anyone with a car can pull over, walk 100 yards and experience the pristine beauty of uncrowded (often empty) natural beaches. It is essentially free, like the Mall in Washington DC -- a national treasure. Bridges will take 2 out of 11 miles of access away from the general public.

**6. By design, both bridges remove all protection that property owners have against both erosion and inlet formation and create uncompensated economic losses for property owners in northern Rodanthe.** Erosion is predictable and expected. Inlet formation is commonplace over long time horizons, but location and timing are hard to predict. A major inlet at this location will gradually move south and destroy many properties (i.e., 100 - 150 homes) along the length of either bridge before NCDOT begins protecting NC 12 (and the homes on either side). 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 a 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 and, as such, deserves protection.

**7. As described in the earlier Environmental Assessment, a bridge on the Current Easement will disrupt or destroy the visual and cultural characteristics of the Outer Banks of 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).

**8. The environmental risks of beach nourishment have been greatly exaggerated.** Evidently, the main objection to nourishment at the policy level of the USFWS in the temporary reduction in mole crab (or sand flea) availability after a nourishment project, and mole crabs are a primary food source for waterfowl. However, there are methods for mitigating this temporary disturbance, including some developed by USFWS. Inlet formation is a risk anywhere on the Outer Banks. However, this portion of Hatteras Island has not had a "natural" inlet for over 100 years. The inlet that was formed during Hurricane Irene (which was itself a 100-year storm) was "man made" insofar as it was primarily caused by the clearing of Paul's Ditch and roadside drainage ditches (which focused an exceptional volume of water into the ditch) plus the sand bags installed on the east side on NC 12 (which allowed the water to break through in only one area). This assessment is now acknowledged by coastal science experts.

Thank you for your consideration of the concerns of the Mirllo Beach Homeowners Association.

Sincerely,



Wes Hutchinson  
Vice President, Mirllo Beach Homeowners Association

**Joyner, Drew**

**From:** Hutchinson, John Wesley <jwhutch@wharton.upenn.edu>  
**Sent:** Friday, July 15, 2016 3:41 PM  
**To:** Office of the Governor; njtennyson@nc.gov  
**Cc:** William.j.biddlecome@usace.army.mil; mike\_bryant@fws.gov; Service Account - Public Involvement 2; Warren Judge; Tom Kligge  
**Subject:** Reminder of a Promise to Mirllo Beach  
**Attachments:** MBHOA comment letter on Rodanthe Bridges.pdf; ATT00001.htm; Sec Tata reply April 10 2013.pdf; ATT00002.htm

Dear Governor McCrory and Secretary Tennyson:

I am the vice president of the Mirllo Beach Home Owners Association (MBHOA) located in Rodanthe, NC. Yesterday, we submitted our comment on NCDOT preferred alternative for a long-term solution for protecting NC 12 in Rodanthe (see attached). Today, I am writing to remind you of the promise made by former NCDOT Secretary Anthony Tata (see attached letter dated April 10, 2013). For many years, our organization has advocated an evidenced-based approach to evaluating beach nourishment as the long-term solution. This was not possible in 2013, but it is possible now because of data available from the 2014 USACE emergency nourishment project in Rodanthe and the 2011 Nags Head beach nourishment project.

Then Secretary Tata promised in 2013,

"... NCDOT will review the recent Nags Head beach nourishment project, data collected by the USACE, and other relevant information to determine if further consideration of a long-term beach nourishment alternative is warranted."

By all accounts both nourishment projects have been very successful. We believe that good science, good economics, and common sense will reveal that beach nourishment is a cost effective, flexible long-term solution that makes wasteful spending on a bridge unnecessary. If an unbiased, evidence-based analysis reveals that a bridge is better, so be it. At least our homes will be sacrificed to the ocean for the right reasons.

Therefore, we request that you make good on Secretary Tata's promise, review the data now available, and make your analyses and conclusions available to the public. We also request access to that data so it can be independently reviewed by us and the coastal science experts with whom we consult.

Thank you for your efforts on behalf of all of the stakeholders affected by the Rodanthe Bridge decision.

Wes Hutchinson



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

1501 MAIL SERVICE CENTER, RALEIGH, N.C. 27699-1501

PAT McCRODY  
GOVERNOR

ANTHONY J. TATA  
SECRETARY

April 10, 2013

Mr. Wes Hutchinson  
Marketing Department  
746 Jon M. Huntsman Hall  
The Wharton School  
University of Pennsylvania  
Philadelphia, PA 19104-6340

Subject: NC 12 Beach Nourishment

Dear Mr. Hutchinson:

Thank you for your correspondence dated March 12 regarding the North Carolina Department of Transportation's (NCDOT) transportation management plan for NC Highway 12 (NC 12). During my visit to the Outer Banks on March 11, I saw first-hand the conditions of the roadway and protective dunes, and I heard from those who are impacted daily by these conditions. These experiences reinforced the commitment Governor McCrory and I have to making NC 12 a safe, viable, and sustainable thoroughfare.

NCDOT recently contracted with the US Army Corps of Engineers (USACE) to perform a one-time beach nourishment project at the Rodanthe "S-curves," designed to protect the NC 12 roadway until a long-term solution can be implemented in that area. While our federal and state regulatory agency partners have been supportive of beach nourishment as a short-term, stop-gap measure, serious environmental, regulatory, and financial concerns remain about whether an adequate supply of suitable beach sand (one that meets both federal and state requirements) would be available for a long-term beach nourishment alternative (spanning at least 50 years). At this time, the position of NCDOT, the Federal Highway Administration (FHWA), and our respective state and federal agency partners remains that a bridge alternative is the safest and most reliable long-term option for NC 12 in the northern Rodanthe area.

The decision to eliminate from consideration a long-term beach nourishment alternative was not made until after consultation with coastal scientists and engineers, many of whom echoed concerns about the use of prolonged beach nourishment in an area with some of the highest erosion rates in the State. Nevertheless, NCDOT will review the recent Nags Head beach nourishment project, data collected by the USACE, and other relevant information to determine if further consideration of a long-term beach nourishment alternative is warranted.

PHONE 919-707-2600 FAX 919-733-9150

Mr. Wes Hutchinson  
April 10, 2013  
Page 2

NCDOT will hold meetings to gather input from the public during the summer of 2013, before a final decision is made regarding the Rodanthe project. I encourage you to attend those meetings, talk with NCDOT staff about the proposed alternatives, and share further comments and relevant information. All comments that NCDOT receives will be carefully considered prior to the selection of an alternative.

If you have any additional comments or questions about our future transportation management plans for NC 12, please feel free to contact Ms. Beth Smyre, Project Planning Engineer, at (919) 707-6043 or at [bsmyre@ncdot.gov](mailto:bsmyre@ncdot.gov).

Sincerely,

Anthony J. Tata

AJT/vb

cc: Governor Pat McCrory  
Jerry Jennings, P.E., NCDOT Division 1 Engineer  
Beth Smyre, P.E., NCDOT Project Planning Engineer

**Joyner, Drew**

**From:** James Hutt <brooke.hutt@gmail.com>  
**Sent:** Monday, June 13, 2016 9:43 AM  
**To:** Service Account – Public Involvement 2  
**Subject:** Comment on NC 12 at Rodanthe

The June 2016 Update letter was interesting and informative, although it seemed to be written by someone experienced with the terminology of the various projects and phrases rather than writing with the goal of having an uninformed person understand what is happening and why.

I assume that an Environmental Assessment has to do with the impact of plants and animals when land is taken for highways and developmental purposes.

My comment is probably not related to the Environmental Assessment if I understand its intent but I didn't notice any reference to an EA (Economic Assessment – a vailed attempt at humor...).

It would seem to me that the cost of a bridge or causeway would far exceed the cost of rebuilding a section of road after a major storm. How many times has the road been repaired over how many years and what has been the average cost of these repairs? How many more repairs could be made before the cost of a causeway becomes economical?

For example, the temporary bridge cost over \$10M from what I understand. If we had filled the breach with sand and repaved the road, what would that have cost by comparison? Who assumed that the breach would be permanent as we now see that it has filled in? And, there was false start in re-working the temporary bridge. What did that cost? By comparison, the breach north of Hatteras Village was filled and repaved after Isabel. What was that cost? (I assume that there are other issues (inter-agency, future forecasts for hurricanes that travel up the sound, convenience to the public). But, if you had a limited budget and budget options, what would be the least cost option and its impact on people and the environment (in simple terms), and a similar analysis for each more expensive option. What other concepts have been explored, (e.g., pre-positioned sand piles, pre-planned agreements for access to public lands)? Notice the pre-positioned equipment on the road south of the Oregon Inlet bridge.

BTW (that's by the way...) – not that this is the intent of my comment, but I wonder if a causeway from Hatteras to Ocracoke rather than a causeway into Rodanthe would be more widely appreciated by the local communities on Hatteras and Ocracoke Islands. It would have a considerable economic impact.

The breaches after storms and hurricanes are an inconvenience associated with the islands' economy and undoubtedly have a significant environmental impact to plants and animals. From a local economic perspective, the problem with breaches is the recovery time.

Are we spending our money wisely?

P.S. I would have thought that the Update would have mentioned a FAQ organized around topics and summary responses from the project staff.

J B Hutt  
Long term Vacation property owner,  
Hatteras NC

**Joyner, Drew**

**From:** Adam Jacono <ajacono@gmail.com>  
**Sent:** Friday, July 15, 2016 9:00 AM  
**To:** Service Account – Public Involvement 2  
**Subject:** Rodanthe bridge

Hello,

I just wanted to show my support in suspending the large "jug handle" bridge development process in Rodanthe. My family visits the area every year and were disappointed the the northern tip of the town will be compromised. Milo beach is a fantastic destination for water sports enthusiasts and I fear bridge development will eventually lead to restrictions to the area, making the location otherwise worthless for sound-side access, reducing value of those properties, and displacing economy-sustaining enthusiasts. That area in particular contains a fragile ecosystem which would be easily disturbed with heavy machining, dredging, and long term maintenance of the bridge.

Thank you,

Adam Jacono  
ajacono@gmail.com  
370 Walnut Lane  
North East MD 21901



**Joyner, Drew**

**From:** Frank Adam Jakob <capehatreal@yahoo.com>  
**Sent:** Friday, June 24, 2016 10:38 PM  
**To:** Service Account – Public Involvement 2  
**Subject:** Proposed NC Hwy 12 Jug Handle is an Accident Waiting To Happen

Dear NCDOT,

Please see my comments below sent to the Dare County Commissioners.

Frank A. Jakob, President (concerned local citizen with 4 generations of family living on Hatteras Island)

Cape Hatteras Realty and Construction Corp  
PO Box 249  
Salvo, NC 27972

252-305-1184

Begin forwarded message:

**From:** Frank Adam Jakob <capehatreal@yahoo.com>  
**Subject:** NC Hwy 12 Jug Handle is an Accident Waiting To Happen  
**Date:** June 23, 2016 at 10:58:55 PM EDT  
**To:** woodard@darenc.com  
**Cc:** wallyvo@darenc.com, warrenj@darenc.com, allenb@ddarenc.com, beverly.boswell@ddarenc.com, margarette.umplett@ddarenc.com, DCBOC@ddarenc.com, garyg@ddarenc.com, rhonda@ddarenc.com

Dear Dare County Chairman Woodard and Dare County Commissioners:

Please take a moment to read my brief response to the DOT Proposed "S" curve bridge solution.

Please don't waste our tax dollars "Painting Yourself into a Corner."

I hope their is someone smart enough to look at the overall picture. I am a former Project Engineer (building power plants + Steel Mills) and have lived 40+ yrs in the Tri-Villages. I have first hand experience in this immediate area, because I lost my house & business to the ocean ( 1-1/2 miles south on he "S" curve) when the sound and ocean meet at the Chicamacomico Fire House during Hurricane Gloria ( and rebuilt afterwards, out of pocket with no insurance or help from SBA or FEMA).

This Proposed New Bridge is a disaster waiting to happen !

DOT Engineers and planners are Not looking at the overall picture. The ocean over washes..... NE lo SW ...and the sound over washes SW to NE.....over and over and over ....NC Highway 12 in Rodanthe (former inlet area.....look at the old maps from past 200 yrs)... not only in the "S" curve

12

....but all of NC 12 from "S" curve down to Atlantic Ave (Pier Road) and beyond. Remember what happened Aug 2011 during Hurricane Irene? How about 1985 Hurricane Gloria? How about every Nor'easter past 40+ yrs?? There was another inlet cut (as usual) from Pier Road to Sound @ Atlantic Ave..... 1-1/2 miles south of "S" Curve. This happens every Nor'easter.....can't get off on an Island.

The are building a bridge to "No Where" at the bottom of the ramp @ Mac's. This will be under water during a normal Nor'Eastern...let alone Tropical Depression or Hurricane ..... and vehicles will Not be able to get off the ramp heading south, nor get on the ramp heading north.....needless to say the traffic congestion at the "Bottleneck" ???..... trying to make a turn during tourist season.

This is a Public Safety and Welfare Hazard!

The bridge should continue to the (100+/- acres) @ Salvo Campground because 95%+ traffic goes south to Avon-Buxton-Frisco-Hatteras + Ocracoke terminal, especially during season (mid week) when all the tourist from up North OBX take a day trip to the Cape Hatteras Lighthouse and Ferry To Ocracoke.

Leave NC 12 "Where is"...."As is"....for all local traffic for RWS. It is very common practice for all resort areas to beach nourish every 7+/- yrs. Our barrier islands are dynamic moving westerly. Take a look at Portsmouth Island which was the center of trade in the 17th century until the inlet filed up and then it became a Ghost Town. (I go there frequently on fishing excursions....Portsmouth has a natural beach ....just like it used to be on Hatteras Island before Park Service and Pea Island Refugee....small dunes and ocean over wash allowed beach natural dune line to migrate and inlets come and go ).

It's like painted yourself into a corner. Need to look at the over all picture. I pointed this out to several so called DOT consultants at the RWS meeting and was told they were Only hired to by-pass the "S" curve and have budget restraints. If so, then continue beach nourishment until funds are obtained to do it right.

I hope people will write in their comments officially to Park Service. I will. If you don't stand up with official written comments during limited comment period....then you don't have any right to complain about the outcome.

End Result is a New Bridge across Oregon Inlet and Leggat Bridge @ New Inlet and road to No Where???

Why do you think they call it "New Inlet" ????

PS - Our DOT Representative, Malcolm Fearing has first hand knowledge of this, when he lost 30+ condo's at/K/a Pamlico Station to the Ocean overwash (erosion) just 1 block north of the Rodanthe Pier.

Thank you for reading and have a good day !

13

Frank A Jakob  
PO Box 249  
Salvo, NC 27972

Cape Hatteras Realty and Construction Corp  
252-305-1184

[CapeHatReal@yahoo.com](mailto:CapeHatReal@yahoo.com)

"Failing to Plan, is Planning to Fail".....Ben Franklin

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**Joyner, Drew**

**From:** Frank A Jakob <capehatreal@yahoo.com>  
**Sent:** Tuesday, June 28, 2016 11:19 AM  
**To:** Service Account - Public Involvement 2  
**Subject:** Re: Proposed NC Hwy 12 Jug Handle is an Accident Waiting To Happen

Great

Need to look at the overall picture.

The "S" curve to just the tip of the iceberg

Thanks and Have a Great Day !

Frank A. Jakob, President

252-305-1184

Realtor - Broker (owner) Auctioneer

Contact me for a " FREE" copy

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[www.OuterBanksRealEstateInformation.com](http://www.OuterBanksRealEstateInformation.com)

Email: [CapeHatReal@yahoo.com](mailto:CapeHatReal@yahoo.com)

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"Failing to Plan, is Planning to Fail" ...Ben Franklin

**Joyner, Drew**

**From:** Lynda Johnson <llyadybugs@me.com>  
**Sent:** Thursday, July 14, 2016 11:54 AM  
**To:** Service Account - Public Involvement 2  
**Subject:** Bridge

Please reconsider the bridge location... Poor plan/impact to economy and ecosystem.

Sent from my iPhone

June 15, 2016, VIA CERTIFIED MAIL June 17, 2016

Mr. Drew Joyner  
Human Environment Section Head  
NCDOT  
[publicinvolvement2@ncdot.gov](mailto:publicinvolvement2@ncdot.gov)

Dear Mr. Joyner

We are writing to advise you that we are in total opposition to the NC Department of Transportation's (NCDOT) proposal to build a bridge in the Pamlico Sound in Northern Rodanthe. We see this as an unnecessary development project at the expense of too many people, businesses, wild and aquatic life. This proposed roadway will forever change our island's lifestyle, culture and economy.

We have owned two houses on Hatteras Island for close to 20 years. We truly love our sound house as it has an exquisitely unique environment. We love our community, contribute to it, and have an undisturbed natural habitat that is hard to find elsewhere.

We have tried to follow along with the NCDOT's proposed bridge ventures, alternates and reasoning for all of it. We are so saddened to see what many others consider to be a "compromise" between government and environmentalist groups is, in actuality, going to result in a future entire loss of the area.

While we agree that there are reparations required for secure travel to the island, we feel this has not been a widely discussed issue amongst the people who it will affect the most. There must be a better way to communicate with local residents and property owners and to allow our voices to be heard. Please explain why the proposed elevated bridge moved? Why can't we use the existing park easements? Please explain why negotiations to change the "Preferred Alternate" routing did not include a representative from the community of Rodanthe?

Many of us have dedicated our lives to our endeavors in Rodanthe, we pay our taxes, have survived storm damage, repaired our homes, community and livelihoods at great expense --- to now possibly have it go away because of an environmentalist group (SELC) that we do not believe is concerned about our environment at all.

We question anyone's objectives and motives for interrupting one of the most pristine places still left on the Atlantic coast. We are extremely concerned about the impacts to the Pamlico Sound and its resident's that are being left unsaid.

**Sound Water Quality**

What effect will the bridge have on the quality of our water and food sources? Not taking into consideration the damage to the area during construction. Increased concentrations of pollution from tires, fuel and oil run-off into the sound poisoning the water. What type of documentation exists that supports the bridge relating to this? Did the environmental assessment address these concerns?

#### Fish and Wildlife

There are turtles, oysters, crabs, clams, mussels and fish that call these shallow waters home. We have many migratory and birds that will be effected. There are horseshoe crabs, string rays, and moccasins that consider this a mating area. There are numerous land species that roam the area. The impact of a bridge on the numerous species that have in recent years begun to thrive again seems extremely detrimental. What documentation exists in relationship to the bridge and the thousands of species who cohabitate here?

#### Economics

Loss of our environmental assets will cause a loss in tourism, thereby effecting the ability of many of us to survive in Rodanthe. There will be a loss of income revenue from visitors and rental houses, greatly effecting the cash flow into the area, causing a loss of businesses, reduction of jobs for the community, and ultimately, tax payer dollars. What studies have been done to quantify the monetary loss of tourism?

#### Wind Sports and Sound Use

This area is one of 4 major wind sport activity areas on Hatteras. What will the rules be regarding the bridge and wind sports? How close will wind sports be allowed? Who will enforce it? Will it shut down the entire study area? Has there been research into the dollar amount loss and safety issues this will cause?

#### Planning and Development

What were the deciding issues that turned the primary selected alternative route, placing an elevated roadway in the existing NC12 easement, into a non-viable alternative?

How much money was spent on that plan before and after the SELC brought the new litigation with the culmination of a "new preferred route"?

Why wouldn't the DOT attempt to use as much of the existing infrastructure and easements as possible?

Why was core drilling not performed at the distal/west end of the study area, if a final decision on bridge location had not been already decided. (2013 Alternative)

What was the effect of the test drilling on the area?

Were water samples taken at the shoreline?

Now proposal 2014B is citing aquatic plants as a reason for relocating the bridge closer to shore? To which, has anyone in the deciding committee ever been in the Pamlico Sound?

What sort of water and soil pollution tests have been performed?

What sort of long term studies have been done on the effects of any bridge on all of Hatteras Island?

What sort of studies on future restricted areas and safety have been done?

#### Notification of Public Hearing

Many of the people that live in the immediate area of the bridge are second home owners and live long distances from the area to attend public hearings at short notice. We feel that NCDOT has done a poor job in keeping the people most affected by this decision informed. Have all public hearing notification guidelines been observed during this process?

In closing, we are strongly opposed to a bridge in the sound. There are just too many economic, cultural and environmental issues that will destroy the island. We request a formal response and formal notifications going forward via the address below.

SAVE OUR SOUND!

Regards,



Amy Jones & Tom Aschmoneit  
8 Brian Court  
Salisbury Mills, NY 12577  
amyjonesasch@gmail.com  
646-207-3317

C: Walt Gray, Chief Deputy Secretary  
Nick Tennyson, Secretary of Transportation

**Joyner, Drew**

**From:** Rick <rmaj73@gmail.com>  
**Sent:** Saturday, June 25, 2016 8:56 PM  
**To:** Service Account -- Public Involvement 2  
**Subject:** NC-12 Rodanthe Breach Long-Term Improvements (Bonner Bridge - Phase IIb) Public Hearing/Comments

Sent from Mail for Windows 10  
Attn: Mr. Drew Joyner

The purpose of this email is to provide comments on the subject proposal. I attended the Open House Hearing on June 22, 2016 in Manteo and was impressed by the presentation and thoroughness of the information provided. My comments are:

1. The 2014 Bridge on New Location (Preferred) terminates at the southern end well into the community of Rodanthe thus resulting in local property owner concerns with the view from sound front lots to the west with the proposed bridge. The original proposal of the Bridge within existing NC12 easement extended into the community along the current easement. Could the Preferred bridge revised to return to the current easement just within the Refuge Boundary and continue as a bridge within the current easement? This would alleviate many of the property owner concerns.
2. There is currently a plan for an additional parking area within the Refuge at the north end of the Preferred design. Recommend contacting the Park Service to recommend an additional parking area at the south end just inside the refuge boundary. This would allow access for Park Service employees and the public to the park and the associated beach areas. Noting that this location is a great surfing location. A concern for the park service is that this parking area would most likely be Rodanthe "S" Curves Hot Spot; however, it would also be within the Beach Nourishment Area thus mitigating the risk.
3. The Bonner Bridge Replacement initiatives solve the aging Bonner Bridge, Pea Island Breach and Rodanthe "S" Curve situations. The presentation Figure 2 also includes a hot spot just beyond the Bonner Bridge south end, just south of the Canal Zone Hot Spot and at the Sandbag Area Hot Spot. Are there any additional plans to mitigate overwash and blowing sand resulting in continued road closures?

Thank you for your attention to Public Comments and your efforts to continue to improve our transportation along our Outer Banks.

Richard Jones  
104 Swan View Drive  
Kill Devil Hills, NC 27948  
Rmaj73@gmail.com  
(757) 344-0658

**Joyner, Drew**

**From:** Imp900@comcast.net  
**Sent:** Thursday, July 14, 2016 10:52 PM  
**To:** Service Account -- Public Involvement 2  
**Subject:** Donner Bridge Phase 2

Dear NC DOT,

I'm writing to express my opposition to NC DOT's "Jug Handle" solution on NC 12 in Rodanthe, also known as Bonner Bridge Phase 2. Elevating NC 12 north of Rodanthe is far more cost effective solution to flooding on NC 12 in the Pea Island NWR. Secondly it will also be less disruptive to the residents, homeowner, businesses and overall nature of Rodanthe, NC.

Thank you for your consideration in this matter.

Sincerely  
James Kelley

COMMENT SHEET

NC 12 – Rodanthe Breach Long-Term Improvements  
 (Bonner Bridge Replacement Project Phase IIb)  
 Public Hearing  
 TIP No. B-2500B  
 Dare County

NAME: AJITA LYER

ADDRESS: 20147 E. Thelma Ave. Wives NC

E-MAIL: \_\_\_\_\_

I HAVE THE FOLLOWING COMMENTS AND QUESTIONS:

Breath Newsham!

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(This comment sheet continues on the other side.)

July 12, 2016

Gentlemen,

I am writing this to unequivocally oppose the continuing usurpation of rights of the citizens of Dare County, Hatteras Island and in particular of the Village of Rodanthe by the capitulation of NCDOT to the changes to the short bridge into Rodanthe from their original plan without renewed judicial review through the appellate court system.

Mr. Everett Spence, who has resided on Corbina Drive in Rodanthe since 1970, as well as myself and four generations of my family, residents for more than 45 years, strongly oppose and are indignant to the fact that we have been cast to the waves of the ocean by the environmentalist without an opportunity to vote on this critical and lifesaving issue.

I have long believed, having stayed here through three major hurricanes, that the people of Hatteras and Ocracoke Islands are entitled to a safe, elevated transportation system that would be provided by a causeway down existing Highway 12, similar to what is successfully found in the Florida Keys.

This solution as opposed to a bridge in the Sound would be economically feasible given the current severe period of economic restraint and uncertainty found on this island and our nation.

Furthermore, it would concurrently allow state and local governments to apply the financial and moral tenants of Article 1, Section 8, Clause 18 of the United States Constitution by hiring a workforce that is locally based. At 5.1 percent, Dare County's current unemployment rate is higher than the state average. Since access is going to be reduced to the Pea Island 'Duck Farm' there should be more monies available for this causeway because of the reduction in staff of Fish & Wildlife and US Park Service personnel that will no longer be needed to "farm ducks" and require humans to purchase permits to enjoy those acres that our tax dollars have already purchased.

A well-constructed causeway would also provide areas with easy access by emergency personnel to operate efficiently and change direction as needed in an emergency situation, such as lightning strikes causing fires in marshland, plane crashes or other disasters.

Additional funds can be re-cooped in the savings that would remain in the hands of the appropriate government agencies, not having to expend funds in the area of eminent domain for those properties of year round residents and visiting tourists.

There is the issue of lighting and appropriate candle power which would not be harmful to the environmental or human populations. It's obvious to me that NCDOT, the environmentalists and local public safety officials that lighting isn't important since from the time that the 'lego' or

short bridge opened there was no attempt to have adequate lighting other than daylight hours to save lives. The absence of lighting already cost one fatality and not one more is needed.

No more traffic lights are needed on Hatteras Island due to increased speeding vehicular traffic. It also will be no longer be necessary to euthanize certain waterfowl and then refrigerate them to feed to other developmental projects.

In closing I agree with Thomas Jefferson's statement that "a little rebellion, now and then, is a good thing, and is necessary in this political world as storms in the physical. It is a medicine necessary for the physical and health of the government and the people."

Respectfully submitted,



Warren C. Martin, Jr.

---

**Joyner, Drew**

**From:** Angela Maslar <gela@stny.rr.com>  
**Sent:** Tuesday, June 07, 2016 7:06 PM  
**To:** Service Account – Public Involvement 2  
**Subject:** Rodanthe bridge

Hi there, I'm just wondering if the notes for the meetings on the Rodanthe bridge will be posted online somewhere? Thanks very much, Angie Maslar

noisy polluting, distracting, tourist-ruining BRIDGE in the sound:

2/8/16

## OBX BRIDGE PROBLEM

Hello my name is Kate E. Mercer. My grandparents own a beach house down at the OBX. We live in front of the wreck in the sound where you're going to put this bridge. I have many reasons why you shouldn't. I know you want to build this bridge because there is a place where it floods a little, but you guys put up that tiny bridge so it wouldn't flood as much and its doing fine.

Okay let's get down to business, the reason I sent this letter is because our beach house is exactly in front of the wreck and would you like it if you sat on your top deck to look at the evening sunset and all you could see, hear, and smell were honking horns, pollution, and

CARS!!!!!!!!!!!!!! Well I feel like I could cry because I am 10 yrs. old and I have been to that beach since I was born! And when my mom told me about this I was crying. That's why I wrote this because so many people who live down there are furious with YOU GUYS! My

grandfather let's say has about 20 people who are his friends that like to windsurf, and they won't be able to if you do this. They won't because they can't actually get past the wreck. And do you know how many times my 3 cousins and my brother William R. Mercer plus me have gone on the front of my grandfather Robert's board. Also I have an English Golden Retriever that runs like the wind with his cousin Elsa in the sound. (that's their favorite spot) My brother Will and my dad go kayaking to the islands down the shore and won't be able to with that big bridge. Please I beg you to just fix the Oregon Inlet Bridge so that people can enjoy their vacation if they live near my beach house. The population of tourism will go down because people will not be relaxed where I am. That's a lot of people.

Thank You so much, have a great rest of your day, please think about what I said.

From: Kate Mercer

## Petition

Please sign my petition to save Pea Island and human and animal residents from a

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**Joyner, Drew**

**From:** Jim Meyer <meyer998@me.com>  
**Sent:** Friday, July 15, 2016 4:37 PM  
**To:** Michael  
**Cc:** Kel Shipman; Service Account – Public Involvement 2; John Nonenmacher; DK; Al Watson; Andy & Lora Geer DDS; BRUCE HARRINGTON; Bruce Powers; Casey Niemi; Dave Iseri - BABA; Debbie Hage; ecrossle; Glenn Reynolds - Island Creek windsurfer; Javier Garriz; Jean Nonen; Rick Pratt; Gray Hall; Emily Huynh; Steven Schrems; Steve Kettelhut; Pat Murphy; Eric Rasche; Lynda Johnson; Patty Johnson; Kenny McGibbon; Michelle Niklas; Carol King; Brad J Pratt; Chris Miles; Jason Miles; James Schrems; Michael Schrems; Sarah Rilingler; Derek Loomis; Christopher Smashe; Hunter Howard; Darren; Bill Sheffield; Rick; Mitch Mitchell; Bob Montemorano; Luke Davis; Jeffrey McFarland; Kurt Rabideu; Scott Weller; Edward C. Pedersen  
**Subject:** Re: Opposition to the Jug Handle (Today is last day to send your comments)

Agree! Thanks everyone for your support. We will keep you posted.  
Jim Meyer

Sent from my iPhone

On Jul 15, 2016, at 1:15 PM, Michael <michaeldzaman@gmail.com> wrote:

Well said Kel!!!

----- Original Message -----  
From: "Kel Shipman" <kshipman@gmail.com>  
To: PublicInvolvement2@ncdot.gov  
Cc: "Jim Meyer" <meyer998@me.com>; "Michael" <michaeldzaman@gmail.com>; "John Nonenmacher" <jbeho@aol.com>; "DK" <dougkon@gmail.com>; "Al Watson" <alskissal@gmail.com>; "Andy & Lora Geer DDS" <GeerAndy@yahoo.com>; "BRUCE HARRINGTON" <bruce5219@gmail.com>; "Bruce Powers" <rpowers1@cox.net>; "Casey Niemi" <Casey.Niemi@gmail.com>; "Dave Iseri - BABA" <djseri@hgl.com>; "Debbie Hage" <deht2@yahoo.com>; "ecrossle" <ecrossle@hvc.rr.com>; "Glenn Reynolds - Island Creek windsurfer" <gregynoldsarchitect@gmail.com>; "Javier Garriz" <jgarriz@mae.com>; "Jean Nonen" <sdqj27@gmail.com>; "Bick Pratt" <bickpratt@gmail.com>; "Gray Hall" <stevenschrems@gmail.com>; "Steve Kettelhut" <skettelhut@yahoo.com>; "Pat Murphy" <murphy1324@msn.com>; "Eric Rasche" <ererasche1@gmail.com>; "Lynda Johnson" <ubervaterbug@gmail.com>; "Patty Johnson" <4sonomamma@gmail.com>; "Kel Shipman" <kshipman@gmail.com>; "Kenny McGibbon" <kbmegibbon@ee.rr.com>; "Michelle Niklas" <michelle.niklas@gmail.com>; "Carol King" <kingcarolh@yahoo.com>; "Brad J Pratt" <bradlev.j.pratt@gmail.com>; "Chris Miles" <c.l.miles11@gmail.com>; "Jason Miles" <miles.jason21@gmail.com>; "James Schrems" <jschrems@charter.net>; "Michael Schrems" <mikesaboarder@me.com>; "Sarah Rilingler" <srilingler@gmail.com>; "Derek Loomis" <loomislawns@gmail.com>; "Christopher Smashe" <chris@excellentweb.com>; "Hunter Howard" <huntershoward@gmail.com>; "Darren" <DHoward@vje.com>; "Bill Sheffield" <wsheffel@starpower.net>; "Rick" <rickria@yahoo.com>; "Mitch Mitchell" <Mitch.Mitchell@relyhealth.com>; "Bob Montemorano" <rmontemorano@gmail.com>; "Luke

Davis" <lukewdavis@gmail.com>; "Jeffrey McFarland" <jmcfarland86@gmail.com>; "Kurt Rabideau" <tateamator@fastmail.fm>; "Scott Weller" <waterline71@hotmail.com>; "Edward C. Pedersen" <cepdedersen@millegal.org>  
Sent: 7/15/2016 12:38:23 PM  
Subject: Opposition to the Jug Handle (Today is last day to send your comments)

**This letter opposes building the "Jug Handle" bridge, in favor of leaving "well enough for now" alone**

**Please join me sharing your thoughts at the email above  
(PublicInvolvement@ncdot.gov). Today is the cutoff date. Thank you.**

The Outer Banks are unique in that the islands are not anchored to offshore coral reefs like some other barrier islands and as a consequence they often suffer significant beach erosion during major storms. **This is a fact.**

Not even one engineering firm, government agency or environmental expert has even once predicted the exact location of a major breach in the island chain. OBX is a different place calling for different thinking. Solutions on this island have perhaps a 30 year window of success at best and more likely significantly less.

I write this letter as a small reminder that sometimes, the "do nothing" scenario is the best course of action. In other words, **build the temporary bridge at the cut and keep repairing the weak parts of the road as they happen until completely forced to take more serious action.** As I understand it, this was the first plan of the DOT until the Environmental groups held the Bonnor Bridge repairs hostage on this very point. Their goal is to remove all roads from Pea Island and if we want to appease them, then a ferry would be a much better solution.

Please hear the voices of the property owners of Mirlo Beach and property owners just south, the thousands of visitors that rent these homes solely because of their location on the sound and invest a crazy amount of money.

The current plan to implement the Jug Handle not only spends too much money, it wipes out many millions of dollars of property value, income and annual tourism dollars, making **it the costliest compromise that doesn't make anyone happy on either side!** So let's please not make this JUG HEAD move.

I believe that the "Do Nothing" scenario, in this case is the best solution for all (Except perhaps the environmentalist who will not be happy until nobody has access to PEA ISLAND).

If the environmental engineers are correct and beach erosion by 2060 is where they say it will be, then none of this matters anyhow because 1/2 of the island at the entrance to Rodanthe will be gone in 44 years. I say let nature give them what they want, at the pace that nature wants to give it them, but not sooner!!

Thank you.

Kei Shipman  
Engineer  
Nature Lover  
Kiteboarder  
Frequent OBX visitor and money spender

Thank you for providing information on the Rodanthe bridge proposals.

First of all, we don't support any of the "proposed alternatives". All of this is quite a reaction to 2 breaches at Mirlo in recent years—Irene and Sandy. The cost of the proposed alternative is staggering—a heck a lot of beach replenishment could be done for the total costs of any of these alternatives. This appears to be major surgery when a band-aid would work. Why not move the road to west, closer to the existing power lines? Why is any bridge being proposed for 2 miles long for a hot spot of maybe a couple of hundred feet? Why is this knee jerk reaction being proposed based on what "could" happen to the coastline in the future? I've been coming to the RWS area for over 40 years; I'm quite aware of coastal changes that have happened during that time—none rise to the level of what's being proposed. Which leads me to the conclusion that the bridge replacement for our area has more to do with giving acres to the refuge and getting people out of the refuge than actually providing safe transit for the area's residents—there is no logical reason for any bridge to start as deep in the refuge that is proposed by any of the so-called alternatives, other than whatever deal NCDOT has made with the refuge management. (After I recently read an article in a Virginia paper, my original opinion seems to be correct—NCDOT has made a deal with the refuge. It would be refreshing if so much consideration was given to the residents of Hatteras Island).

And to add insult to injury, I learned during the recent presentation that included in this preferred alternative, there will be one, I repeat—ONE, parking lot at the north end for people to use to enjoy the beach within the refuge. And that the parking lot at the south end of the temporary bridge, which was historically a place to park and walk over the dunes, will be closed once that bridge construction is completed. That means for all of the 14 miles included in the refuge, there will be only two places to legally park—at the Refuge visitor center (although I'm beginning to wonder why a visitor center is even needed since by ongoing action no visitors are wanted) and at the north end of the preferred bridge in Rodanthe. That absolutely defies logic—has any consideration been given to how this complies with ADA? What accommodations, if any, are being made for handicapped individuals who would like some access to the beach in the refuge, only to have 2 lots for parking available for all visitors. I saw no areas allowing for easy access for the disabled.

I'm not a property owner in the Mirlo Beach area, but am a property owner/resident in Salvo. However, your current alternatives will forever change the Rodanthe area and will negatively impact both residents, business owners, and visitors. No amount of money can make up for losing a business your parents spent their lifetimes building. I see lots of kiteboarders enjoying the sound in that area—once the preferred bridge is built that will cease. Surely, there are other, less invasive, more cost effective ways to provide safe transit on Hwy 12 in the Rodanthe area. This whole project feels like a drip, drip, drip scenario—given how much of the beach is closed to visitors in the Cape Hatteras National Recreational (chuckle, chuckle) Seashore, now an additional 2 miles or so will be unaccessible in the refuge. At this rate, pretty soon we'll be able to look at the beach from our vehicle as we drive on a "no stopping allowed" road—look but don't touch. I urge you to consider other alternatives than what I saw proposed at the meeting.

Respectfully,

Carl and Polly Moffatt

26058 Galleon Drive, Salvo, NC

July 14, 2016

Mr. Drew Joyner  
Human Environment Section Head  
NCDOT  
[publicinvolvement2@ncdot.gov](mailto:publicinvolvement2@ncdot.gov)

Mr. Joyner

My husband and I own several rental investment properties on the Outer Banks, both on Hatteras and in Nags Head. One of our properties is sound front on Pappy Lane, right north of where NCDOT plans to build their newly selected preferred option, the 'Jug handle bridge'.

We support a long term solution to provide highly reliable transportation to Hatteras Island. We are very opposed to a bridge being built in the sound in Northern Rodanthe as the solution. It will impact us, all our neighbors, and the general public in a very negative way. There is a better solution and it must be reassessed.

First and foremost it will greatly degrade the quality of life and deface the truly unique landscape of the Pamlico Sound a national treasure and attraction for millions of Americans.

Second it will greatly impact our financial investment in Hatteras Island in a negative manner preventing further planned investment and persuading divestiture of the island.

Finally, it is a blatant misuse of taxpayer funds and betrayal of taxpayer's best interests. A much more cost effective and multi-beneficial solution exists and has come to light since this process has started.

#### **Loss of investment and rental opportunity**

On a personal level, the jug-handle bridge will decimate our rental income as we will not get bookings from water sports guests who book our property for only the specific reason to kite board on the sound. As do all our neighbors guests. This negative impact will be the greatest during the years of construction and may cause foreclosure on our and many other properties in the area.

We bought this property as a means of income for our retirement. A bridge will destroy that investment and our retirement.

It will diminish the value of our investment property and destroy a beautiful and unique natural resource, our Pamlico Sound which is a national treasure.

The sound bridge not only affects us but all property investors in northern Rodanthe. Millions of dollars in property values will be diminished with the building of this Jug-Handle bridge.

#### **Disagree with the premise of 50 year erosion timeline.**

The data cited as used for the decision of the preferred choice is stale, as totally new data points have arisen that were not part of the evaluation of options. Most notably and with the most potential for positive impact is the successful 2014 beach nourishment project of northern Rodanthe. This option of

nourishment was on the table originally. The reasons for not considering it further have been eliminated. Now it is the most cost effective and logical choice to address the comprehensive needs of reliable Peas Island access and securing that the island is still there to access in the future. No Nourishment, no beach, no vacation rentals, no future for Hatteras. We will be left with a very expensive bridge to nowhere. Nourishment is greatly cheaper option than a bridge in the sound.

#### **Failure of government to serve the local taxpayer's best interests above outside special interest**

**Closed door meeting to appease SELC has driven this high cost alternative, destroying millions of dollars in property value and disenfranchising property owners and investors.**

Everyone wants a better and more secure transportation corridor through the outer banks. We understand it is vital for business, commerce, and emergency access. What we don't want is to feel we have taken a back seat to closed door meetings and agreements. Prior to the closed door meeting with the SELC, NCDOT's preferred option was an elevated road through the Rodanthe S-turn.

**There was no consideration given to involve non-resident owners to solicit their input.** Not residing permanently in Rodanthe, we were promised at least 30 day notice to make plans to attend these meetings. We were given less than 2 weeks and the meeting were not held as originally presented in March but at the height of our rental season, making it extremely difficult for property owners to attend. These public hearings appear to be just a formality after the fact.

#### **Waste of taxpayer money.**

Nourishment proven in Nags Head and Rodanthe. Nourishment also used in other states to combat erosion. Nourishment cost 25mil, no road washout at s-turns since nourishment.  
Cost of bridge \$178-198Mil, what about maintenance costs? The bridge costs 8 times more than to nourish the beach.

What is the long term plan for rest of Hatteras at other hot spots – e.g. Buxton? Buxton was nourished 40 years back and if maintained via nourishment then would not have problems encountered today.

The road should be elevated through the Rodanthe/S-turn "Hot spot" in the existing road way and built to 25-year standard like the "New inlet" bridge, reducing costs. The island is too dynamic to support 50-year planning. The route at the North end of NC12 could have a "Jug Handle shape" immediately north of Mirlo Beach to appease the SELC, providing them with the anchor for their 17-mile bridge and minimizing the effect on Northern Rodanthe. All of the issues presented below will still pertain.

This process has led many in the local community of Rodanthe to question the motives and processes that have occurred with decisions regarding the Rodanthe bridge. We "the little people" feel like we have been left out of a process that will immediately and distinctly effect our futures, and our children's futures. We feel that we were given up as a bargaining chip while dealing with the SELC. This will be a life changing issue for many of the local people. Many of the homes in the area will foreclose because of reduced rental income the owners have come to expect, and property values will plummet for the next several years.

#### **Decisions Without Representation**

During the litigation between NCDOT and SELC in 2015, decisions were made by a group of involved parties; i.e. USFS, Fish and game, Core of Engineers, Hatteras Electric Coop etc. that effect the people

who live immediately adjacent to the project. Please explain why negotiations to change the "Preferred Alternate" routing did not include a representative from the community of Rodanthe? While we were not part of the lawsuit, we are the ones who will have live with the decision made by the committee. This decision (placement of the bridge and use of taxpayer dollars) is a worse case example of group speak and caving to special interest at the cost of a few.

What were the deciding issues that turned the primary selected alternative route; placing an elevated roadway in the existing NC12 easement, into a non-viable alternative? How much money was spent on that plan before and after the SELC brought the new litigation with the culmination of a "new preferred route"?

During October and November of 2015 core sample drilling was performed along the inside of the study zone. It appeared that drilling was only performed along the inner most section of the study area and not in the whole study zone. Why was core drilling not performed at the distal/west end of the study area, if a final decision on bridge location had not been already decided. (2013 Alternative)

In the latest flyer sent to some homeowners, the decision has been made to change the routing of the bridge to the closer to the shore route "Jug Handle" version 2014B. This decision was made on the basis of effect on aquatic plants. As a person who lives here full time, and spends hours each day in the Sound, it is apparent the aquatic plants also exist in the area where you are proposing the new 2014B version, its dependent on the time of year and temperatures. That rationale only works as an assessment to another entity in the decision making committee. So the 2013 version of the bridge was thrown out because of aquatic plants location and amount, moving the bridge location closer to the shore. Who made that decision and why does it trump the homeowners' that live immediately adjacent? WE ARE ADAMANTLY OPPOSED TO MOVING THE BRIDGE CLOSER TO THE SHORELINE THAN THE 2013 BRIDGE VERSION. Run off pollution, Noise, light pollution, loss of view, restrictions of use, are all reasons for our position.

#### Wind Sports and Sound Use

This area is one of 4 major wind sport activity areas on Hatteras north of Buxton; the Canadian Hole, Real Water Sports, Kitty Hawk and Northern Rodanthe. On any windy day you will find many wind sport enthusiasts using the area. These people are many of the visitors" that rent the homes and pump money into the local economy. Real and Kitty Hawk use the area at the North end terminus of the bridge area for kite surfing lessons. The bridge would be a disaster for wind sports. The height of the bridge itself would change the wind currents and natural flow over the island. Since these people have been using this area since the 1980's many will continue to come, attempting to use the area. What will the rules be regarding the bridge and wind sports? How close will wind sports be allowed? Who will enforce it? Will it shut down the entire study area? Has there been research into the dollar amount loss and safety issues this will cause?

#### Sound Water Quality

We now consume food caught in the sound, crabs, fish, clams and oysters. What effect will the bridge have on the quality of these food sources? Not taking into consideration the damage to the area during construction. Increased concentrations of pollution from tires, fuel and oil run-off into the sound poisoning the water. What type of documentation exists that supports the bridge relating to this? Did the environmental assessment address these concerns?

#### Migratory Birds

In September and October Cormorants by the thousands migrate south exactly where you are proposing the bridge. Why is it better for the birds to have the bridge in the sound and not down the NC 12 easement. What documentation exists to support the bridge relating to this?

#### Feeding birds

There are several groups of Pelicans that use this bay daily for feeding. They arrive in the morning a again in the afternoon. What effect will the bridge construction have on their feeding habits.

This year has been seen a bumper crop of Horseshoe Crabs mating in the area. What effect will the bridge have on them, and what documentation exists to support it.

#### Notification of Public Hearing

Many of the people that live in the immediate area of the bridge are second home owners and live long distances from the area to attend public hearings at short notice. We feel that NCDOT has done a poor job in keeping the people most affected by this decision informed. Several of the homeowners on the Sound received flyers/notification in the mail. My wife and I being located one house from the Sound have received no notification regarding the public hearing other than word of mouth in the neighborhood. While this project has taken on wings since the settlement with the SELC, it is important everyone affected is notified. Have all public hearing notification guidelines been observed during this process?

In closing, we are strongly opposed to a bridge in the sound, especially as close to the shore your current 2014B version. We feel that NCDOT's previous decision (raised highway in existing NC12) was made in the best interest to all involved. It appears at this point special interests have more influence on the decision than the local residents. LOCAL LIVES MATTER, SAVE OUR SOUND!

Respectfully

Morris Neuman & Jer Mehta  
23177 Pappy Lane  
Rodanthe NC 27968  
914-273-5561

**Joyner, Drew**

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**From:** Jerry Nordskog <founding1001@yahoo.com>  
**Sent:** Thursday, June 23, 2016 11:11 AM  
**To:** Service Account – Public Involvement 2  
**Subject:** Rodanthe Brudge

I like the elevated road idea. If done properly i think it should last many years. Bridge is ok and would provide a nice view of the sound but not allow off ramps.

Sent from Yahoo Mail on Android

**Joyner, Drew**

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**From:** Jerry Nordskog <founding1001@yahoo.com>  
**Sent:** Thursday, June 23, 2016 11:19 AM  
**To:** Service Account – Public Involvement 2  
**Subject:** Bridge

If you justify a bridge because it is less susceptible to "ocean forces", what about Rodanthe? Are we going to elevate it later?  
Just elevate the road and let the protesters live with what happens later. At least with the bridge the other communities on hwy 12 will have outside access without a ferry system.

Sent from Yahoo Mail on Android

**Joyner, Drew**

**From:** KERTOR@aol.com  
**Sent:** Thursday, June 23, 2016 12:18 PM  
**To:** Service Account – Public Involvement 2  
**Cc:** Gray, Walt L; Tennyson, Nicholas J; McCrory, Pat; Rep. Paul Tine; Senator Bill Cook  
**Subject:** Rodanthe sound bridge

Mr. Joyner,

I own a sound front lot in Mirlo Beach, Rodanthe. I am writing to express my opposition to the proposed bridge in the sound. This bridge will ruin a premier sailing spot, it will destroy the beauty of the area, and it will greatly reduce the value of many area properties.

I think that either the elevated highway or the beach nourishment program should be the primary option. Either of these would cause much less harm, both to the sound environment and the area property owners.

Thank you for your consideration.

Keith Orr  
393 Hammastown Road  
Greensburg, PA 15601  
724-688-2256

**Joyner, Drew**

**From:** Bpayne4237 <bpayne4237@aol.com>  
**Sent:** Friday, July 15, 2016 9:39 AM  
**To:** jwhutch@wharton.upenn.edu; Service Account – Public Involvement 2  
**Cc:** tkligge@gmail.com; sfhigdon@gmail.com; hatterashurricane@gmail.com; glangner27968@gmail.com; paulababin@yahoo.com; lakeviewfinancial@comcast.net; verrecchiolaw@gmail.com  
**Subject:** Re: Mirlo Beach HOA Comment on Rodanthe Bridge EA and Preferred ALternative

Wes,

Good Morning. I was not withholding comment yesterday, just simply not had an opportunity to see your letter or respond.

The letter is very well written and I believe a clear statement regarding the facts and opinions of all of MBHOA. So far that, your efforts are greatly appreciated.

As previously stated, the problem is the deal cut with NCDOT and SELC for the Bonner Bridge. Although I have not recently reviewed "the deal", I believe that it pertains to "if they build a bridge, not they must build a bridge" and if they do this (the sound) is the option we will not oppose.

That being said, and if my memory is correct, that would still leave nourishment open as an option. I think there are two very important names mentioned in your letter, McCrory and Tata, and that we should capitalize on their statements if we are going to have success. Tata is gone so it is his successor, but I don't think McCrory has much political capital left after LGBT.

So, maybe there is an outside chance that we can impede the process long enough for a discussion.

In today's world, I believe that our only option may be Social Media. If we have the right message out there it can work much more effectively and quickly than the legal system and is open to a much broader base. The only question is what message should we put out there?

Personally, I don't subscribe to or even use Social Media on any level. But if the right message was put out I am well aware of it's potential impacts and so is NCDOT, The Governor, and The SELC.

Just a thought, otherwise, I think you have done a tremendous job (as well as others) with your work on this piece and have my full support.

Thanks again,  
Brad

-----Original Message-----

**From:** Hutchinso, John Wesley <jwhutch@wharton.upenn.edu>  
**To:** publicinvolvement2 <publicinvolvement2@ncdot.gov>  
**Cc:** Thomas Klige <tkligge@gmail.com>; sfhigdon@gmail.com; Higdon <sfhigdon@gmail.com>; Bpayne4237 <bpayne4237@aol.com>; Daniel Richards <hatterashurricane@gmail.com>; Gary Langner <glangner27968@gmail.com>; paulababin@yahoo.com; Babin <paulababin@yahoo.com>; Gina Stevenson <lakeviewfinancial@comcast.net>; verrecchiolaw <verrecchiolaw@gmail.com>  
**Sent:** Thu, Jul 14, 2016 10:35 pm  
**Subject:** Mirlo Beach HOA Comment on Rodanthe Bridge EA and Preferred ALternative

Mr. Drew Joyner  
NCDOT, Section Head, Human Environment Section  
1598 Mail Service Center  
Raleigh, NC 27699-1598  
Dear Mr. Joyner:

I am writing on behalf of the MirloBeach Homeowners Association (MBHOA) as authorized by their board of directors (of which I am a member) to comment on the Rodanthe Bridge Alternatives, both the New Location Alternative (NLA), which is the current NCDOT preferred alternative, and the Existing Easement Alternative (EEA), which is the previous NCDOT preferred alternative. A pdf file of this letter is attached.

**The MBHOA opposes both bridge alternatives and favors beach nourishment as the long-term solution for protecting NC 12 in northern Rodanthe.** A 2-mile bridge in either location defies common sense. However, these options are believed to be the most expedient politically and from a regulatory perspective. This seems nothing short of a tragedy of governance and a mockery of the Merger Process, which has been a laudable effort to create a consensus among many agencies with divergent missions. We implore NCDOT and the Merger Team to do what is best for the long term, for the citizens of Dare County, and the millions of visitors to Hatteras Island from all over the world. The reasons for our position are summarized below. Over the past 5 years, we 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, Beth Smyre, Jerry Jennings, Warren Judge, and a number of local residents and retailers). In this public document, we prefer to not name individuals as information sources; however, we would be happy to provide further details about our sources, our analyses, and our organization upon request.

**1. Cost effectiveness and flexibility.** The initial estimated cost of a Rodanthe Bridge (circa 2013) was approximately \$100 million; the next year the estimated cost had grown to \$200 million. We find it hard to believe that the cost of a bridge to be constructed in 2017 or 2018 is still \$200 million. Moreover, this cost is incurred immediately and protects only 2 miles of NC 12. It has no option value. Additionally, maintenance cost in the sound or beach/ocean will be very high. For the NLA, we wonder if the design specifications require standards sufficient to sustain inlet formation anywhere along the bridge that might change the water depth from 3 - 6 feet to 10 - 20 feet. Beach nourishment on the other hand, is less expensive and provides tremendous flexibility. It is a solution that can be applied quickly to anywhere on Hatteras Island where NC 12 might be damaged. From a purely financial perspective, it is very attractive. For example, a \$200 million "endowment" to support nourishment would \$8 million per year (at 4% return rate), which more than pays for the 3-year expected life of the recent emergency nourishment. Informal analyses of the emergency nourishment after 21 months (both our own and that of one of the coastal scientist named above) suggests that this level of nourishment will protect NC 12 for 5 - 10 years. If that proves true over the long run, nourishment is MUCH less expensive. Moreover, in this endowment calculation, the \$200 million would always be available in the future to help build a bridge if nourishment fails to be sustainable, or if there is an unanticipated natural disaster because the ongoing nourishment is being funded only by returns on the endowment. Other forms of present value analyses lead to similar conclusions. More generally, 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). We realize that things are different in the public sector, but still, that is no excuse for financial mismanagement.

**2. The current process (i.e., Revised Environmental Assessment (EA) for Phase IIb of the Bonner Bridge Replacement Project) is out of date, unfair, and possibly litigable; a new, thorough, evidence-based analysis of the alternative solutions is needed.** 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. In the words of one of the experts, it was based on "back of the envelope" calculations. Much more directly applicable data is now available from the emergency nourishment of this hot spot and from the Nags Head nourishment project. The opinions of the panel experts can now be informed by hard data. Informally, the opinion of virtually everyone on Hatteras Island, including people close to the decision makers, is that this process is a charade designed to make good on deals cut behind closed doors by NCDOT and SELC.

**3. Then NCDOT Secretary Tata promised that beach nourishment would be re-evaluated in light of new data.** In a letter from Secretary Tata (April 10, 2013) that responded to our letter requesting further study based on data from nourishment, he repeated the arguments for the NCDOT preferred solution (which is no longer preferred) and then said, "Nevertheless, NCDOT will review the recent Nags Head beach nourishment project, data collected by the USACE, and other relevant information to determine if further consideration of a long-term beach nourishment alternative is warranted." Governor McCrory's name is on the letterhead along with Tata's, and he was copied the letter. We expect the State of North Carolina to honor its explicit commitments.

**4. Bridges create a serious public safety hazard.** Currently, both the sound and the ocean are aquatic playgrounds almost all year long. There are no fixed structures in these waters. The NLA bridge puts hard structures into the sound; the EEA bridge is designed to be on the beach and in the active ocean with 10 years as erosion proceeds unchecked. In the sound, such structures are serious hazards for boaters when the weather is bad. Boats in distress will not simply be grounded in shallow water (which is what happens now), they face the real risk of being smashed against the pylons. The bridge will also become a hazard to kite boarders for similar reasons, and because kite boarding is an extreme sport and boarders will be strongly tempted to use the bridge for stunts. For the EEA bridge, most beach users will avoid the hard structures, but many children and adults, surfers, boogie boarders, and swimmers will find these structures attractive and entertaining once they are on the beach and in the water. 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 the formation of stable, deepened rip currents will create unexpected hazards. These outer banks beaches are unprotected by lifeguards, and we 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 injuries and fatalities will increase. If bridges were a cancer risk, the NLA and EEA would have been ruled out long ago.

**5. Bridges reduce public access to Hatteras Island.** Although the stated mission of the USFWS for wildlife refuges emphasizes protecting natural habitats, especially endangered species, it does include providing benefits to the general public. NC 12 through the Pea Island Wildlife Refuge currently provides a tremendous public benefit. Anyone with a car can pull over, walk 100 yards and

experience the pristine beauty of uncrowded (often empty) natural beaches. It is essentially free, like the Mall in Washington DC -- a national treasure. Bridges will take 2 out of 11 miles of access away from the general public.

**6. By design, both bridges remove all protection that property owners have against both erosion and inlet formation and create uncompensated economic losses for property owners in northern Rodanthe.** Erosion is predictable and expected. Inlet formation is commonplace over long time horizons, but location and timing are hard to predict. A major inlet at this location will gradually move south and destroy many properties (i.e., 100 - 150 homes) along the length of either bridge before NCDOT begins protecting NC 12 (and the homes on either side). 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 a 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 and, as such, deserves protection.

**7. As described in the earlier Environmental Assessment, a bridge on the Current Easement will disrupt or destroy the visual and cultural characteristics of the Outer Banks of 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." Homes 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).

**8. The environmental risks of beach nourishment have been greatly exaggerated.** Evidently, the main objection to nourishment at the policy level of the USFWS in the temporary reduction in mole crab (or sand flea) availability after a nourishment project, and mole crabs are a primary food source for waterfowl. However, there are methods for mitigating this temporary disturbance, including some developed by USFWS. Inlet formation is a risk anywhere on the Outer Banks. However, this portion of Hatteras Island has not had a "natural" inlet for over 100 years. The inlet that was formed during Hurricane Irene (which was itself a 100-year storm) was "man made" insofar as it was primarily caused by the clearing of Paul's Ditch and roadside-drainage ditches (which focused an exceptional volume of water into the ditch) plus the sand bags installed on the east side on NC 12 (which allowed the water to break through in only one area). This assessment is now acknowledged by coastal science experts. Thank you for your consideration of the concerns of the Mirlo Beach Homeowners Association. Sincerely,

Wes Hutchinson  
Vice President, Mirlo Beach Homeowners Association

-----  
Stephen J. Heyman Professor and Professor of Marketing  
Faculty Director, Wharton Behavioral Laboratory  
Marketing Dept., 763 Jon M. Huntsman Hall  
The Wharton School, University of Pennsylvania  
Philadelphia, PA 19104-6340

<https://marketing.wharton.upenn.edu/profile/195/>  
office: (215) 898-6450

**Joyner, Drew**

**From:** Jeep & Anne Picher <jpa.picher@gmail.com>  
**Sent:** Friday, July 15, 2016 9:03 AM  
**To:** Service Account – Public Involvement 2  
**Subject:** Opposition to the NC 12 Rodanthe Breach Project

Thank you for the opportunity to comment on the subject project. The purpose of this email is to express my opposition to the NC 12 Rodanthe Breach Project, Phase 2B Bonner Bridge Project.

We are long term vacationers to the Rodanthe area, 12 weeks per year in the spring and fall and are having great difficulty in understanding the building of the proposed "jug handle" bridge in the Pamlico Sound...i.e. the cost impact, the environmental impact and the future economic impact. Why would you not simply build an elevated highway where the existing Highway 12 runs now....that would cause the least impact and provide a reliable highway for the local residents.

If the "jug handle" bridge is built sadly that will be the end of our vacations at the Outer Banks and our contribution to the local economy.

Yours sincerely  
Anne Picher  
Jean Pierre Picher  
32 Ch Carman  
Chelsea, Quebec, Canada J9B 2K3  
jpa.picher@gmail.com

Mr. Drew Joyner  
Human Environment Section Head  
NCOT  
publicinvolvement2@ncot.gov  
June 22, 2016

Dear Mr. Joyner,

My wife and I have owned a home on the sound in the area of Rodanthe that will be devastated by the proposed "bridge in the sound". We have enjoyed this house at 23160 Corbina Drive West for seventeen years. The name of the house says it all...."Windsafari". The wind is an important aspect of this home and many other homes in the affected area. Free access to the sound is necessary to enjoy windsurfing and kiting in the sound in the area enclosed in the bridge on the sound. This bridge will rule out usage for these sports.

We paid top dollar for a house on the sound and the bridge will destroy the value of our home. Will there be compensation? This house was part of our retirement nest egg and we also hoped we would be able to pass it on to our children and grandchildren.

In addition to these destructive observations there is the loss of the beautiful sunsets. We can't put a value on this aspect of our home. To us the sunsets are invaluable. The value of our home will definitely decrease because of the loss of this attribute.

I ask you, why you would follow the guidelines of an environmental group that professes a belief that the water will rise in the oceans rapidly, quickly swallowing the OBX and its bridges. If they truly believe their scare tactics I suggest you agree with them and make the wiser and cheaper bridge over the existing road. Tell them it is because of their predictions about the rapidly approaching sea rise that you rejected the bridge in the sound and you don't want to be part of a project that may end up being another "Bridge to Nowhere" that is seen to this day in the Pea Island Refuge.

Please don't make my family take the brunt of this ill conceived project.

Sincerely,



Bob And Chris Rowland



**Joyner, Drew**

**From:** Kel Shipman <kelshipman@gmail.com>  
**Sent:** Friday, July 15, 2016 12:38 PM  
**To:** Service Account – Public Involvement 2  
**Cc:** 'Jim Meyer'; 'Michael'; 'John Nonenmacher'; 'DK'; 'Al Watson'; 'Andy & Lora Geer'; 'DDS'; 'BRUCE HARRINGTON'; 'Bruce Powers'; 'Casey Niemi'; 'Daive Iseri - BABA'; 'Debbie Hage'; 'ecrossle'; 'Glenn Reynolds - Island Creek windsurfer'; 'Javier Garriz'; 'Jean Nonen'; 'Bick Pratt'; 'Gray Hall'; 'Emily Huynh'; 'Steven Schrems'; 'Steve Kettelhut'; 'Pat Murphy'; 'Eric Rasche'; 'Lynda Johnson'; 'Patty Johnson'; 'Kel Shipman'; 'Kenny McGibbon'; 'Michelle Niklas'; 'Carol King'; 'Brad J Pratt'; 'Chris Miles'; 'Jason Miles'; 'James Schrems'; 'Michael Schrems'; 'Sarah Rillinger'; 'Derek Loomis'; 'Christopher Smashe'; 'Hunter Howard'; 'Darren'; 'Bill Sheffel'; 'Rick'; 'Mitch Mitchell'; 'Bob Montemorano'; 'Luke Davis'; 'Jeffrey McFarland'; 'Kurt Rabideu'; 'Scott Weller'; 'Edward C. Pedersen'  
**Subject:** Opposition to the Jug Handle (Today is last day to send your comments)

**This letter opposes building the "Jug Handle" bridge, in favor of leaving "well enough for now" alone!**

**Please join me sharing your thoughts at the email above (PublicInvolvement2@ncdot.gov). Today is the cutoff date. Thank you.**

The Outer Banks are unique in that the islands are not anchored to offshore coral reefs like some other barrier islands and as a consequence they often suffer significant beach erosion during major storms. **This is a fact.**

Not even one engineering firm, government agency or environmental expert has even once predicted the exact location of a major breach in the island chain. OBX is a different place calling for different thinking. Solutions on this island have perhaps a 30 year window of success at best and more likely significantly less.

I write this letter as a small reminder that sometimes, the "do nothing" scenario is the best course of action. In other words, **build the temporary bridge at the cut and keep repairing the weak parts of the road as they happen until completely forced to take more serious action.** As I understand it, this was the first plan of the DOT until the Environmental groups held the Bonnor Bridge repairs hostage on this very point. Their goal is to remove all roads from Pea Island and if we want to appease them, then a ferry would be a much better solution.

Please hear the voices of the property owners of Mirolo Beach and property owners just south, the thousands of visitors that rent these homes solely because of their location on the sound and access to clean wind and unobstructed sunset views, and finally the tax payers being asked to invest a crazy amount of money. The current plan to implement the Jug Handle not only spends too much money, it wipes out many millions of dollars of property value, income and annual tourism dollars, making **it the costliest compromise that doesn't make anyone happy on either side!** So let's please not make this JUG HEAD move.

I believe that the "Do Nothing" scenario, in this case is the best solution for all (Except perhaps the environmentalist who will not be happy until nobody has access to PEA ISLAND).

If the environmental engineers are correct and beach erosion by 2060 is where they say it will be, then none of this matters anyhow because 1/2 of the island at the entrance to Rodanthe will be gone in 44 years. I say let nature give them what they want, at the pace that nature wants to give it them, but not sooner!!

Thank you.

Kel Shipman  
Engineer  
Nature Lover  
Kiteboarder  
Frequent OBX visitor and money spender

**Joyner, Drew**

**From:** Service Account – Public Involvement 2  
**Sent:** Tuesday, June 14, 2016 8:22 AM  
**To:** Sara Small; Service Account – Public Involvement 2  
**Subject:** RE: Public Meetings Rodanthe NC 12

Ms. Small,  
I apologize for the delayed response. There is no online comment option, but citizens can send comments via email to [publicinvolvement2@ncdot.gov](mailto:publicinvolvement2@ncdot.gov) or mail comments to Drew Joyner, NCDOT – HES, 1598 Mail Service Center Raleigh, NC 27699-1598. The comment deadline is for all comments. Please let me know if I can be of further assistance.

Drew Joyner

**From:** Sara Small [<mailto:sara.small@darenc.com>]  
**Sent:** Tuesday, June 07, 2016 4:20 PM  
**To:** Service Account – Public Involvement 2  
**Subject:** Public Meetings Rodanthe NC 12

Hello,

I am writing to inquire if there is a way for residents to make comments online regarding the Rodanthe NC Bridge Option. I received the press release from a colleague and am preparing it for distribution and for the Dare County website. The release states "Comments will be accepted through July 15, 2016." Is that for mailed comments? Should the comments be mailed to the address listed for Drew Joyner? Thanks!

**Sara Small**  
*Media Specialist*  
Department of Public Relations  
P.O. Box 1000, Manteo, NC 27954  
252.475.5900 phone  
252.475.9376 fax  
[www.darenc.com](http://www.darenc.com)



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**Joyner, Drew**

**From:** christopher smashe <[chris@excelontheweb.com](mailto:chris@excelontheweb.com)>  
**Sent:** Friday, July 15, 2016 2:42 PM  
**To:** Service Account – Public Involvement 2  
**Subject:** NC12 Rodanthe Breach Project Phase 2B Bonner Bridge Project

I would like to put my name down as opposition to the phase 2 Bonner bridge project. There are many other options that would not cost this much money and have less of an impact on the area. Let nature take its course.

Chris Smashe  
Raleigh NC

**Joyner, Drew**

**From:** Service Account - Public Involvement 2  
Friday, June 24, 2016 8:56 AM  
**To:** Everett Spence, Service Account - Public Involvement 2  
**Subject:** RE: Preferred option is a 2.4-extending from the southern end of the Pea Island

Mr. Spence,  
Project information can be found at [www.ncdot.gov/projects/NC12Rodanthe](http://www.ncdot.gov/projects/NC12Rodanthe). Please let me know if I can be of further assistance.  
Sincerely,  
Drew Joyner

**From:** Everett Spence [mailto:[ewspence@gmail.com](mailto:ewspence@gmail.com)]  
**Sent:** Friday, June 17, 2016 8:47 AM  
**To:** Service Account - Public Involvement 2  
**Subject:** Preferred option is a 2.4-extending from the southern end of the Pea Island  
Requesting copy of proposed Rodanthe Pea Island Bridge project.

E. W. Spence LLC  
804 350 4708

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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:** Glenn Stevens

**ADDRESS:** 2724 Linda Marie Dr. Canton VA 22129

**E-MAIL:** GStevens@ncnm.org

**I HAVE THE FOLLOWING COMMENTS AND QUESTIONS:**

I have owned a soundfront home at the end of Whimble Shoals dr. for 20 years. This bridge destroys the love of hikeboards and windsurfers forever! Furthermore, I will lose 50% of the value of my home. No renters! No property value! Build your bridge but compensate me for my loss!

Hundreds of sport enthusiasts will now go elsewhere. You have ruined paradise!!!



(This comment sheet continues on the other side.)

Joyner, Drew

From: Mark and Sue <msvizer@hotmail.com>  
Sent: Friday, July 15, 2016 4:05 PM  
To: Service Account - Public Involvement 2  
Cc: 'Michael'  
Subject: "NC12 Rodanthe Breach Project Phase 2B Bonner Bridge Project"

We're not locals, but we've been visiting for over thirty years in spring and fall. A Merio beach bypass sure seems like a diamond encrusted, gold plated solution compared with just elevating the road on pilings for a mile or two.

How often has that area actually been closed for more than a day or two, other than after Hurricane Irene?

\$200,000,000 sure would cover a lot of overtime and a few new dozers and a whole lot of army surplus mobile temporary bridges.

Mark and Sue Vizer  
123 Rosewood Drive  
Lansdale, PA 19446

215-460-0999

**COMMENT SHEET**

NC 12 - Rodanthe Breach Long-Term Improvements  
(Bonner Bridge Replacement Project Phase 1b)  
Public Hearing  
TIP No. B-2500B  
Dare County

NAME: CHARLES WATSON

ADDRESS: RODANTHE & MARSH HEAD

E-MAIL: DAVE301DAY@SPRINKLE.COM

I HAVE THE FOLLOWING COMMENTS AND QUESTIONS:

I WINE RESILIENCY BECOME A KIND OF A GROUP OF PEOPLE WHO WANT TO AVOID A BRIDGE AND THE CURRENT RIGHT OF WAY @ THE 'SALARIES', I FEEL THAT THIS GROUP IS ONLY LOOKING OUT FOR THEIR PERSONAL PROPERTY & INTEREST IN RODANTHE / MARSH HEAD

MY PERSONAL OPINION IS THAT THE 'LAW-ABIDING' BRIDGE IS THE ONLY REAL ALTERNATIVE AVAILABLE DUE TO THE EROSION RATE, AND IF THE CURRENT ROADWAY IS RAISED THERE WILL BE SOME WEST OF THE RAISED ROADWAY WITHIN 5-10 YEARS.

(This comment sheet continues on the other side.)

**Joyner, Drew**

**From:** John Zayanoskosy <zayansjohn@gmail.com>  
**Sent:** Friday, July 15, 2016 1:11 PM  
**To:** Service Account – Public Involvement 2  
**Cc:** Governor's Office  
**Subject:** REVISED BRIDGE PLANS - RODANTHE, N.C.

NCDOT, Drew Joyner, Nora McCann-

Based on conversations with Drew and Nora and having a ownership interest on a property within Corbina Drive, Rodanthe I am against the most recent approval of the 2014B Revised Bridge Plan.

My preference is to push the Bridge out further into Pamlico Sound as was first proposed and changed due to US Wildfire input. If NCDOT can change plans based on US Wildlife opinions it can change plans with input from the PEOPLE IMPACTED NOT JUST THE FISH IMPACTED or opinions from others.

- 1.) Your decision to have three (3) straight meetings on weeknights Monday 6/20, Tuesday 6/21 and Wednesday 6/23 is unacceptable. I am from out of state and cannot be there on a weeknight. Excellent planning by NCDOT. Is it unreasonable to have a meeting on a weekend when in and out of state people are in the area? Please answer this question. NCDOT has to wake up and be real. I know government holds the power over the citizens and this is a good example.
  - 2.) Your drawings are unacceptable as it shows a 2 lane bridge with both cars going the same way. I assume you are building 2 bridges or it is a one way bridge. Someone has to explain this or will it magically change on the website one day. The Governor will then have to explain how this happened. Wake up.
  - 3.) I have left messages with Drew and Nora and either someone calls back 4 days later or someone does not call back until a 2nd call is made.
- Please listen to the people since people do not forget. Your public input is kind and nice but simply a process. At the end NCDOT does what it wants to do but people do not forget and eventually someone pays the price.

In closing you wanted input and you have it. Now it comes down to if NCDOT listens and do what is best for the people.

Remember what happened most recently in England and the Cincinnati Zoo. People and lives came first in Cincinnati and not wildlife.

In closing the recommendation is to move the bridge out further into the Sound. Your internal closed door meetings are what it is all about - transparency. Think of that when you discuss the project and what you tell the people at the end.

John Zayanoskosy  
908-938-0103 Cell

**Joyner, Drew**

**From:** Paul Zoeckler <paulzoeckler@gmail.com>  
**Sent:** Sunday, July 10, 2016 7:26 AM  
**To:** Service Account – Public Involvement 2  
**Subject:** Rodanthe jug handle bridge project

I am not a resident, but a concerned bi-annual visiting kiter at the Mirlo Beach development. This area will be severely impacted by the proposed jug handle bridge, completely eliminating kiting and windsurfing from it's shores. Not only that, but the incredible views will be destroyed by this bridge. We all know that nature will eventually take out the whole breach area, but why not go with the other option of a straight bridge following the existing highway. It would be like Key West, connecting islands with bridges, allowing most things to remain as always. In time, many of the houses will be destroyed in the breach area, but views and water sports (a big money maker) will not be impacted for a very long time. In the end, the straight functioning bridge will remain without speeding up the demise of very special water sport haven. Thanks for listening, Paul

From: Wheeler, Tracey L SAW [mailto:Tracey.L.Wheeler@usace.army.mil]  
 Sent: Friday, September 09, 2016 12:38 PM  
 To: McCann, Nora A  
 Cc: Biddlecome, William J SAW; Barnes, Kyle W SAW; Matthews, Monte K SAW  
 Subject: B 2500 Phase II Revised EA Comments

Nora,  
 The US Army Corps of Engineers has reviewed the Revised Environmental Assessment and Section 4(f) Evaluation for the NC 12 - Rodanthe Breach Long Term Improvements Bonner Bridge Replacement Project Phase IIb document, received on June 10, 2016. We have the following comments:

1. The jurisdictional delineation expires in 2017. Please be aware that if the delineation must be current in order for a permit to be issued, I recommend that you coordinate with me to discuss a renewal of the delineation.
2. Section 4.4 on page 4-59 states that the anticipated impacts to wetlands are discussed in Section 4.1.5. Section 4.1.5 describes biotic communities, but does not describe impacts. Impacts are discussed in Section 4.2.5.2 on page 4-33.
3. Because the construction of the bridge will occur in Section 10 Waters, the USCG has authority to authorize all impacts associated with bridge construction. The USACE review will be limited to impacts associated with road construction. Please separate out fill impacts associated with approach construction from fill impacts associated with piling installation.
4. The document discusses development of an SAV Mitigation Plan that will be required to offset impacts to EFH and SAV areas. If this Plan requires activities in jurisdictional areas additional permitting may be required. Please coordinate with USACE to determine permit requirements.

Thank you for following up with this office to incorporate our comments in the document. If you have any questions about this or any other matter, please feel free to contact me.

Tracey L. Wheeler  
 Acting Field Office Chief  
 U.S. Army Corps of Engineers  
 Raleigh Regulatory Field Office  
 3331 Heritage Trade Drive  
 Wake Forest, North Carolina 27587  
 (919) 554-4884 ex 24

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://corpsmainpul.usace.army.mil/cm\\_apex/f?p=136:4:0](http://corpsmainpul.usace.army.mil/cm_apex/f?p=136:4:0)

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**Basic Comment Details**

From: Phone: Email:

**Response**

Dear Sir: Thank you for comment concerning the Bonner Bridge Phase IIb, ~~Rodanthe~~ Bridge. My name is Nora McCann and I am the project manager for this project. Your comment will become part of the public comment record for this project. At the end of the public comment period, (July 15, 2016) all comments will be compiled and addressed.

Sincerely, Nora McCann (919) 707-6043

- 
- 
- 
- 

Send Reply to Citizen

**Comment History**

Tracking Number: HDFSCDGLIX

Sent By: Date/Time: 7/14/2016 10:58 PM  
 Comment:  
 Dear NC DOT,

I'm writing to express my opposition to NC DOT's "Jug Handle" solution on NC 12 in Rodanthe, also known as Bonner Bridge Phase 2. Elevating NC 12 north of Rodanthe is far more cost effective solution to flooding on NC 12 in the Pea Island MWR. Secondly it will also be less disruptive to the residents, homeowner, businesses and overall nature of Rodanthe, NC.

Thank you for your consideration in this matter.



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
Southeast Regional Office  
263 13th Avenue South  
St. Petersburg, Florida 33701-5505  
<http://sero.nmfs.noaa.gov>

July 22, 2016

F/SER47:KR/pw

(Sent via Electronic Mail)

Robert Hanson, PE  
Project Development & Environmental Analysis Manager  
N.C. Department of Transportation  
1516 Mail Service Center  
Raleigh, North Carolina 27699-1516

Attention: Rodger Rochelle

Dear Mr. Hanson:

NOAA's National Marine Fisheries Service (NMFS) reviewed the *NC 12 - Rodanthe Breach Long-Term Improvements Bomber Bridge Replacement Project Phase 1Ib, Revised Environmental Assessment (EA)* signed by the Federal Highway Administration (FHWA) on May 24, 2016 and by the North Carolina Department of Transportation (NCDOT) on May 13, 2016. The purpose of the revised EA is to present updates in the project setting, preferred alternative, and environmental impact analysis since release of the original EA in December 2013. The revised EA evaluates 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. The EA principally focuses on two construction alternatives: 1) Bridge within Existing NC Highway 12 Easement Alternative and 2) Bridge on New Location Alternative (extending through a 2.1-mile portion of Pamlico Sound). EA Section 1.1 explains how the revised EA relates to previously completed environmental reviews, including the 2008 Final Environmental Impact Statement (FEIS) 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 3.4 identifies Bridge on New Location 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 NMFS provides the following comments pursuant to the authorities of the Fish and Wildlife Coordination Act and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

*Consultation History*

The NMFS has participated in all Merger Team Meetings held to date for Phase II of the Bomber Bridge Replacement Project. The North Carolina Department of Transportation (NCDOT) initiated an EFH consultation through a request for review of the *Environmental Assessment NC 12 - Rodanthe Breach Long-Term Improvements Bomber Bridge Replacement Project Phase 1Ib,*

dated December 2, 2013. The NMFS provided consultation by letter dated January 31, 2014, after determining the proposed project would adversely affect federally managed species and their EFH. Within the letter referenced, the NMFS provided two EFH conservation recommendations: (1) the Final EA should identify the Bridge within Existing NC Highway 12 Easement Alternative as the selected alternative for the Rodanthe Breach Area, and (2) all project plans reflect all practicable avoidance and minimization. Lastly, the NMFS met with NCDOT on December 1, 2015, to discuss minimization and mitigation of project impacts to submerged aquatic vegetation (SAV) and salt marsh. The NMFS worked with NCDOT to develop a habitat restoration and monitoring plan.

*Essential Fish Habitat*

The site of the proposed project includes shallow estuarine bottom, estuarine emergent wetlands, and SAV. The SAFMC identifies shallow estuarine bottom and estuarine emergent wetlands as EFH for penaeid shrimp and estuarine-dependent species of the snapper-grouper complex. The South Atlantic Fishery Management Council (SAFMC) also identifies SAV as a Habitat Area of Particular Concern (HAPC) for estuarine-dependent species of the snapper-grouper complex. HAPCs are a subset of EFH that are rare, particularly susceptible to human-induced degradation, especially important ecologically, or located in an environmentally stressed area. The SAFMC identifies these areas as EFH because larvae and juveniles concentrate and feed extensively and shelter within these habitats. As a consequence, growth rates are high and predation rates are low, which makes these habitats effective nursery areas for shrimp and snapper. The SAFMC provides additional information on EFH for federally managed species in Volume IV of the *Fishery Ecosystem Plan of the South Atlantic Region*<sup>1</sup>.

The potential impacts to EFH are addressed in the 2008 FEIS Section 4.7.6.2 as well as the revised EA Section 4.2.5.5 and Table 8 (Comparison of Key Impacts of the Phase 1Ib Alternatives). The NCDOT is developing an EFH Assessment Addendum as part of on-going coordination with NMFS on the Rodanthe Breach Long-term Improvement Project. Upon completion, these documents will constitute the EFH assessment required for the proposed project.

*Comments on Habitat Conservation*

The NMFS accepts the Bridge on New Location Preferred Alternative as the Least Environmentally Damaging Practicable Alternative (LEDPA) because it minimizes impacts on the PINWR, the ocean shoreline and surf zone, and shallow-water estuarine habitats. As specified in the design-build plans, all three bridge alignments would impact SAV and salt marsh habitat. A major focus of Merger Team meetings since publication of the EA in December 2013 has been an evaluation of bridge alignment to avoid and minimize impacts to SAV. The NCDOT has conducted extensive aerial mapping surveys and on-site surveys to assess SAV coverage within the proposed bridge alignments. SAV habitat impacts vary by bridge length and alignment over the Pamlico Sound. Direct impacts to EFH for the preferred alignment (2014B) are estimated at 2.70 acres with impacts from shading estimated ranging from 7.92 to 10.50 acres. As presented, the preferred alignment would have the least impact to SAV.

<sup>1</sup> Available at <http://safmc.net/EcosystemLibrary/FEFVolumeIV>



The revised EA includes several environmental commitments by NCDOT to minimize construction impacts to the extent practicable. Temporary work bridges would be constructed to minimize impacts to the shallow estuarine bottom. Contractors would submit for review sediment and erosion control plans for each stage of construction. Disposal of dredged materials would be determined based on the character of the material dredged and availability of approved disposal sites. Bridge piles in open water would be jetted and spoils disposed at an approved disposal site. The NCDOT would coordinate with cooperating regulatory agencies to develop a blasting program that would minimize adverse environmental impacts if use of explosives were required during construction. Water quality would be monitored through construction. Generalized environmental impacts to water quality are expected to be temporary in nature and of short duration (days) following construction and maintenance activities.

The NCDOT proposes a mitigation plan that includes construction of a SAV habitat restoration site that couples an oyster reef with a seagrass restoration area located in the reef shadow. Native seagrasses would be planted behind the oyster reef (wave break) in order to further seagrass propagation. The location of the mitigation site is yet to be determined as well as the target acreage; however, the NMFS agrees with NCDOT that 6.01 acres of SAV impact delineated in 2014 is a defensible impact calculation unless construction monitoring or post-construction monitoring warrant further impact assessment. The NMFS believes a monitoring schedule should be included in the mitigation plan. Environmental monitoring should include restoration benchmarks, defined success criteria, and measures allowing for adaptive management.

B-58

#### EFH Conservation Recommendations

Section 305(b)(4)(A) of the Magnuson-Stevens Act requires NMFS to provide EFH Conservation Recommendations for any federal action or permit which may result in adverse impacts to EFH. Therefore, NMFS recommends the following to ensure the conservation of EFH and associated fishery resources:

1. The Final EA should identify the Bridge on New Location with preferred alignment 2014B as the selected alternative for the Rodanthe Breach Area.
2. All permanent and temporary impacts to SAV and salt marsh habitat should be fully mitigated after project plans reflect all practicable avoidance and minimization. The NMFS commits to assisted NCDOT during development of the avoidance and minimization measures as well as the compensatory mitigation plan, including evaluations of the amounts of mitigation necessary.
3. Out-of-kind mitigation credit should not be approved for construction of the wave break (oyster reef) within the SAV mitigation site.
4. A comprehensive monitoring plan with restoration benchmarks and defined success criteria should be developed for the SAV mitigation site. The mitigation site should be monitored for five years.

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 the 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. Please direct related questions or comments to the attention of Dr. Ken Riley at our Beaufort Field Office, 101 Pivers Island Road, Beaufort, North Carolina 28516-9722, or at (252) 728-8750.

Sincerely,



Virginia M. Fay  
Assistant Regional Administrator  
Habitat Conservation Division

/ for

cc: NCDOT, Rdrochelle@ncdot.gov  
NCDOT, Namecann@ncdot.gov  
FHWA, Ron.Lucas@dot.gov  
NCDEQ, Doug.Huggett@ncdenr.gov  
NCDEQ, Cathy.Brittingham@ncdenr.gov  
NCDEQ, Shane.Staples@ncdenr.gov  
USACE, Tracey.L.Wheeler@usace.army.mil  
EPA, Militischer,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, Ken.Riley@noaa.gov





United States Department of the Interior

Office of the Secretary  
Office of Environmental Policy and Compliance  
1849 C Street, NW - MS 2462 - MFB  
Washington, D.C. 20240

JUL 11 2016

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PEP/NRM

ER13-0786

Mr. Robert P. Hanson, PE  
Project Development & Environmental Analysis Section Head  
North Carolina Department of Transportation  
1548 Mail Service Center  
Raleigh, North Carolina 27699-1548

Subject: NC-12 Rodanthe Breach Long Term Improvement (Bonner Bridge Replacement Project Phase IIb), Federal Aid Number: BRNHF-0012(56), TIP Number: B-2500B, in Dare County, North Carolina

Mr. Hanson:

The Department of the Interior (Department) has reviewed the Federal Highway Administration (FHWA) and North Carolina Department of Transportation (NCDOT) Revised Environmental Assessment and Section 4(f) Evaluation (EA) for the NC 12 Rodanthe Breach Long-Term Improvements (Bonner Bridge Replacement Project Phase IIb), Dare County, North Carolina. We offer the following comments and recommendations for your consideration.

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 improvement 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 revises the EA released in 2013 and includes updates to the project setting, project alternatives, and impact findings. It also identifies a new Preferred Alternative, the Bridge on a New Location Alternative with new alignment.

**U.S. Fish and Wildlife Service Comments**

Section 4.2.4 of the revised EA discusses updated impacts of the Phase IIb detailed study alternatives as they relate to impacts on Parks and Recreation. Under part 4.2.4.2 (page 4-28) that refers to the Bridge Within Existing NC 12 Easement Alternative, it describes a preference of the Fish and Wildlife Service (FWS) to sacrifice direct motor vehicle access to the Pea Island National Wildlife Refuge (FWS-Refuge) in favor of eliminating the need for artificial dunes to maintain NC 12. It also states the FWS "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...." Similar language is found on page 4-31 under this same section, stating that "users will have to rely on alternate access which FWS-Refuge has indicated it would provide." Similar language was also made under section 5.4.1.4. This language needs to be clarified.

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This statement was in reference to the earlier long-bridge proposal, whereby vehicle access via a NCDOT maintained road would be lost along the entire length of the existing highway easement. This statement was not directed at the Phase IIb alternative alone. The FWS indicated it would work with NCDOT and FHWA on alternatives for public access to FWS-Refuge. To this effect, FWS applied for an Alternative Transportation Planning grant from FHWA which would provide the capability and capacity to develop an Alternative Transportation Plan for FWS-Refuge. The FWS-Refuge said that in those areas where NCDOT removed portions of their maintained highway and restored them to a natural state that pedestrian access would be allowed under the same policies that exist where the highway continues to exist. The Department understands that NCDOT will construct a parking area on the east side of the highway just north of the north landing of the Phase IIb bridge regardless of alignment.

On page 4-42 of the revised EA, an incorrect biological conclusion is given for the federally threatened rufa red knot (*Calidris canutus rufa*). The correct biological conclusion is "May Affect, Likely to Adversely Affect". This was the biological conclusion of the FHWA in their January 5, 2015, request for reinitiation of formal Section 7 consultation. On February 9, 2015, the FWS issued an addendum to a Biological Opinion (originally issued on July 10, 2008) for this project. This addendum provided an incidental take statement for the rufa red knot.

**National Park Service Comments**

Sections 4.1.7 and 4.2.5.5 address essential fish habitat, including soundside wetlands (estuarine emergents), submerged aquatic vegetation in the sound (seagrass), and open waters in the sound not exceeding six feet in depth. The National Park Service (NPS) calculates that its total amount of land situated in the sound under the proposed bridge where the bridge leaves FWS-Refuge for 150 feet in length, at all water depths, totals 1/3 of an acre of land, more or less, which is the basis for these comments. The NCDOT, a number of State agencies and the National Oceanic and Atmospheric Administration have been studying the sound side waters for all of the Bonner Bridge B-2500 projects, including this one, for at least the last four years, by aerial photography and ground-truthing the results with field work sampling in the estuarine waters abutting the land. Presumably the agencies have been receiving the research results, but the NPS has not received this information at its offices, other than what has been directly requested by the Cape Hatteras National Seashore. The Department recommends that this information be located in a central place where all the agencies could access the material in a usable format and timely manner while this project is ongoing. The NPS further suggests that NCDOT require all of its contractors and State agencies doing the research to invite the Cooperating Agencies in this project to participate or observe these field activities firsthand, throughout the project, and for as long as such studies are required under the prerequisite permits.

**Section 4(f) Evaluation Comments**

The Section 4(f) Evaluation adequately describes a range of alternatives, and the affected Section 4(f) resource properties, however potential project impacts to those resources and potential avoidance, minimization and mitigation is still being developed.

Page 5-25 states: "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

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design and permit processes progress. Therefore, all possible planning to minimize harm has and will continue to be done for Phase IIb."

The Department has no objection to the approval of the Section 4(f) contingent upon:

1. A list of agencies that still require consultation are provided in the FHWA and NCDOT National Environmental Policy Act decision document and coordination with "appropriate agencies" includes FWS, National Marine Fisheries Service, and NPS.
2. A Memorandum of Agreement (MOA) is developed/signed, that discloses all avoidance, minimization, and specific details of mitigation efforts, as well as who is responsible for each effort identified and the associated agencies that still require coordination.
3. Full execution of the avoidance, minimization and mitigations identified in the MOA.

In conclusion, we have worked in good faith with FHWA and NCDOT 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. For matters related to the FWS comments, contact Gary Jordan with the FWS, 551 F Pylon Drive 33726, Raleigh, North Carolina 27636; telephone 919-856-4520. For matters related to the NPS comments, contact Anita Barnett with the National Park Service, Southeast Regional Office; Atlanta Federal Center, 1924 Building, 100 Alabama Street, S.W., Atlanta, Georgia, 30303; telephone 404-507-5706.

Sincerely,

Mary Josie Blanchard  
Acting Director, Office of Environmental  
Policy and Compliance

cc: John Sullivan, FHWA  
Rodger Rochelle, NCDOT  
Gary Jordan, FWS  
Pete Benjamin, FWS  
Anita Barnett, NPS



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

July 12, 2016

Mr. Robert P. Hanson, P.E.,  
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 Revised Federal Environmental Assessment (EA) for the Proposed NC 12 Rodanthe Breach Long-term Improvements, Bonner Bridge Replacement Project, Phase IIb; Federal Aid No. BRNH-0012(56), TIP No. B-2500B, Dare County, North Carolina

Dear Mr. Hanson:

The U.S. Environmental Protection Agency (EPA) has reviewed the subject document and is providing comments in consistent with §309 of the Clean Air Act and §102(2)(C) of the National Environmental Policy Act (NEPA). The North Carolina Department of Transportation (NCDOT) and the Federal Highway Administration (FHWA) propose to construct a new bridge south of the Pea Island National Wildlife Refuge to just north of the Rodanthe Historic District. The revised Phase IIb EA presents updates in the project setting, project alternatives, and impact findings that have occurred since the issuance of the December 2013 EA. This revised Phase IIb EA is established on the previous NEPA documentation for the Bonner Bridge Replacement Project (B-2500) as its basis. Additionally, the revised EA provides NEPA compliance documentation in accordance with the Parallel Bridge Corridor with NC 12 Transportation Management Plan Alternative (PBC/TMP Alternative) as the selected alternative. Lastly, the revised EA takes into account the stipulations related to Phase IIb included in an April 30, 2015, litigation settlement and agreement (the "Agreement") between the FHWA, NCDOT, the North Carolina Department of Environmental Quality-Division of Coastal Management (NCDEQ-DCM), and the Defenders of Wildlife and National Wildlife Refuge Association. The Agreement did not predetermine the selection of a Preferred Alternative; instead, it reaffirmed the NCDOT's collaborative NEPA/Section 404 Merger Process in working together to achieve consensus based on harmonizing numerous environmental resource concerns with long-term infrastructure sustainability, engineering design, and constructability constraints within a dynamic marine ecosystem.

The NC 12 Rodanthe Breach Long-Term Improvements/Bonner Bridge Replacement project is in the NEPA/Section 404 Merger process and the USEPA has been an active member of this

**Department of Environmental Quality  
Project Review Form**

**Project Number:** 16-0383 (14-0268)      **County:** Dare      **Date Received:** 06/15/2016

**Due Date:** 7/11/2016

**Project Description:** Environmental Assessment - Revised EA - Proposal to replace the Herbert C. Bonner Bridge - Phase IIB Rodanthe Breach Long-Term Improvements TIP No. B-2500B

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	<input type="checkbox"/> Air Quality
<input type="checkbox"/> Fayetteville	<input checked="" type="checkbox"/> DWR	<input checked="" type="checkbox"/> NC Natural Heritage
<input type="checkbox"/> Mooresville	<input checked="" type="checkbox"/> DWR - Public Water	<input type="checkbox"/> Waste Mgmt
<input type="checkbox"/> Raleigh	<input checked="" type="checkbox"/> DEMLR (LQ & SW)	<input type="checkbox"/> Water Resources Mgmt (Public Water, Planning & Water Quality Program)
<input checked="" type="checkbox"/> Washington	<input type="checkbox"/> DWM-UST	<input checked="" type="checkbox"/> DWR-Transportation Unit
<input type="checkbox"/> Wilmington		<input type="checkbox"/> Wildlife - DOT Travis Wilson
<input type="checkbox"/> Winston-Salem		<input type="checkbox"/> Coastal Management
		<input checked="" type="checkbox"/> DCM-Marine Fisheries
		<input type="checkbox"/> Military Affairs
		<input checked="" type="checkbox"/> DMF-Shellfish Sanitation
		<input type="checkbox"/> Wildlife
		<input checked="" type="checkbox"/> Wildlife - DOT Travis Wilson

**Manager Sign-Off/Region:** \_\_\_\_\_      **Date:** 2016-06-30      **In-House Reviewer/Agency:** SYBRENNE MORSON/NCMHP

**Response (check all applicable)**

No objection to project as proposed.       No Comment

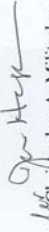
Insufficient information to complete review       Other (specify or attach comments)

If you have any questions, please contact:  
Lyn Hardison at lyn.hardison@ncdenr.gov or (252) 948-3842  
943 Washington Square Mall Washington NC 27889  
Courier No. 16-04-01

team including the proposed projects under Phase II. Significant progress on developing viable solutions for this complex infrastructure project have been made since 2012, including concurrence on the Least Environmentally Damaging Practicable Alternative (LEDPA), CP3, on June 17, 2015, and an agreement on Avoidance and Minimization Measures, CP4a, on January 14, 2016. The NCDOT's Project Commitments (i.e., the "Green Sheets," pages 1 - 10) attest to the substantial work conducted by NCDOT and the resource agencies. The USEPA has provided specific technical review comments in an attachment to this letter (See Enclosure A).

In general, the USEPA supports the proposed project's Purpose and Need, the new Preferred Alternative (Bridge on New Location), the Avoidance/Minimization measures taken to date, and the ongoing work to minimize harm to natural and human resources. Please feel free to contact Dr. Cynthia F. Van Der Wiele of my staff at vanderwiele.cynthia@epa.gov or 919-450-6811 should you have any questions concerning these comments. The USEPA appreciates the opportunity to provide comments on the NC 12 project and requests a copy of the FONSI when it becomes available. The USEPA anticipates remaining an active participant in the NEPA/Section 404 Merger process as the project continues to move forward.

Sincerely,

  
Christopher A. Militscher  
Chief, NEPA Program Office

Resource Conservation and Restoration Division

Enclosure A - Detailed Review Comments

cc: Ron Lucas, FHWA  
Tracey L. Wheeler, USACE  
Cathy Brittingham, NCDCM  
Gary Jordan, USFWS  
Gary Ward, NCDWR Washington Regional Office  
Travis Wilson, NCDWR

State of North Carolina  
 Department of Environment and Natural Resources  
 INTERGOVERNMENTAL REVIEW - PROJECT COMMENTS

Reviewing Office: Washington  
 Project Number: 16-0383 Due Date: 7/11/2016  
 County: Dauphin

After review of this project it has been determined that the ENR permit(s) and/or approvals indicated may 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 this form. All applications, 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 (statutory 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. Two-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 technical conference usual. Receipt of permit required after 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 served on each adjacent riparian property owner. On-site inspection. Pre-application conference usual. Filing may require Easement to Fill from N.C. Department of Administration and Federal Dredge and Fill Permit.	55 days (90 days)
<input type="checkbox"/> Permit to construct & operate Air Pollution Abatement facilities for stationary sources as per 15 A NCAC 2D.0100 thru 2D.0900	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 (2D.0113).	90 days
<input type="checkbox"/> Permit to construct & operate Transportation Facility as per 15A NCAC 2D.0800, 2D.0901	Application must be submitted at least 90 days prior to construction or modification of the source.	90 days
<input checked="" type="checkbox"/> Any deep burning associated with subject proposal must be in compliance with 15 A NCAC 2D.0900	N/A	60 days (90 days)
<input checked="" type="checkbox"/> Demolition or renovations of structures containing asbestos material must be in compliance with 15 A NCAC 2D.1110 (0) (1) which requires notification and removal prior to demolition. Contact Asbestos Control Group 919-707-9550.	N/A	26 days (30 days)
<input type="checkbox"/> Complex Source Permit required under 15 A NCAC 2D.0800	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.	(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 conveyances and outlets.		
<input type="checkbox"/> Mining Permit	On-site inspection usual. Surety bond filed with ENR 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 the 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 Burning Permit - 22 counties in central 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 burn is planned."	1 day (N/A)
<input type="checkbox"/> Oil Refining Facilities	N/A	90-120 days (N/A)
<input type="checkbox"/> Dam Safety Permit	If permit required, application 60 days before begin construction. Applicant must submit a detailed plan of construction. Applicant must also receive permit under mosquito control program. And a 40% Hazard from Corps of Engineers. An inspection of site is necessary to verify Hazard Classification. A minimum fee of \$300.00 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)

February 11, 2015

County	Date	Project Number	Due Date	Normal Process Time (statutory time limit)
PERMITS		16-0383	7/11/2016	
<input type="checkbox"/> Permit to drill exploratory oil or gas well				10 days (N/A)
<input type="checkbox"/> Geophysical Exploration Permit				10 days (N/A)
<input type="checkbox"/> State Lakes Construction Permit				15-20 days (N/A)
<input type="checkbox"/> 401 Water Quality Certification				60 days (120 days)
<input type="checkbox"/> CAMA Permit for MAJOR development				55 days (150 days)
<input type="checkbox"/> CAMA Permit for MINOR development				22 days (25 days)
<input type="checkbox"/> Several geologic measurements are located in or near the project area. If any monument needs to be moved or destroyed, please notify N.C. Geodetic Survey, Box 21687 Raleigh, NC 27611				
<input checked="" type="checkbox"/> Abandonment of any well, if required must be in accordance with Title 15A, Subchapter 2C 0100.				
<input type="checkbox"/> Notification of the proper regional office is requested if "orphan" underground storage tanks (USTS) are discovered during any excavation operation.				
<input type="checkbox"/> Compliance with 15A NCAC 211 1000 (Coastal Stormwater Rules) is required.				45 days (N/A)
<input type="checkbox"/> Catawba, Jordan Lake, Randolph, The Pamlico or Neuse Riparian Buffer Rules required.				
<input type="checkbox"/> Plans and specifications for the construction, expansion, or relocation of a public water system must be approved by 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
<input 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

Division	Initials	No comment	Comments	Date Review
DAQ	FDB	<input checked="" type="checkbox"/>	No Comments	6/23/16
DWR-WOROS (Aquifer & Surface)	DRS	<input checked="" type="checkbox"/>		7/7/16
DWR-PWS	DEL	<input checked="" type="checkbox"/>		6/23/16
DEMLR (LQ & SW)	SD	<input type="checkbox"/>		7/7/16
DWM- UST	NA	<input type="checkbox"/>	NA	/ /

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
- Fayetteville Regional Office**  
225 North Green Street, Suite 714  
Fayetteville, NC 28301-5043  
(910) 433-3300
- Wilmington Regional Office**  
127 Cardinal Drive Extension  
Wilmington, NC 28405  
(910) 796-7215
- Winston-Salem Regional Office**  
450 West Tanes Mill Road, Suite 300  
Winston-Salem, NC 27105  
(336) 771-9800
- Washington Regional Office**  
943 Washington Square Mall  
Washington, NC 27889  
(252) 946-6481

February 11, 2015



**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:** July 8, 2016

**SUBJECT:** North Carolina Department of Transportation (NCDOT) Revised Environmental Assessment (EA) for the proposed Rodanthe Breach Long-Term Improvements, Dare County, North Carolina. TIP No. R-B-2500 Phase II B, SCH Project No. 16-0383

Staff biologists with the N. C. Wildlife Resources Commission 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).

The revised EA accounts for prior comments and coordination from WRC. We do not have any specific comments on the document; however as a member of the NEPA/Section 404 Merger 01 team we will continue to assess potential impacts as well as additional avoidance and minimization measures during the design and construction of the project. 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.

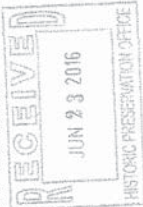
**Mailing Address:** Division of Inland Fisheries • 1721 Mail Service Center • Raleigh, NC 27699-1721  
**Telephone:** (919) 707-0220 • **Fax:** (919) 707-0028

**NORTH CAROLINA STATE CLEARINGHOUSE  
DEPARTMENT OF ADMINISTRATION  
INTERGOVERNMENTAL REVIEW**

**COUNTY:** DARE

**F02:** HIGHWAYS AND ROADS

**STATE NUMBER:** 16-E-4220-0383  
**DATE RECEIVED:** 06/15/2016  
**AGENCY RESPONSE:** 07/11/2016  
**REVIEW CLOSED:** 07/15/2016



MS RENEE GLEDHILL-EARLEY  
CLEARINGHOUSE COORDINATOR  
DNCR - DIV OF PARKS AND RECREATION  
MSC 4617 - ARCHIVES BUILDING  
RALEIGH NC

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DEPT OF TRANSPORTATION  
DNCR - DIV OF PARKS AND RECREATION  
DPS - DIV OF EMERGENCY MANAGEMENT  
THE ALBEMARLE COMMISSION

**PROJECT INFORMATION**

**APPLICANT:** N.C. Department of Transportation  
**TYPE:** National Environmental Policy Act  
Environmental Assessment

**DESC:** Revised EA - Proposal to replace the Herbert C. Bonner Bridge - Phase IIB  
Rodanthe Breach Long-Term Improvements TIP No. B-2500B

**CROSS-REFERENCE NUMBER:** 14-E-4220-0268

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:** TSW

**DATE:** 7/13/16



NORTH CAROLINA STATE CLEARINGHOUSE  
DEPARTMENT OF ADMINISTRATION  
INTERGOVERNMENTAL REVIEW

COUNTY: DARE

F02: HIGHWAYS AND ROADS

STATE NUMBER: 16-E-4220-0383  
DATE RECEIVED: 06/15/2016  
AGENCY RESPONSE: 07/11/2016  
REVIEW CLOSED: 07/15/2016

F02: HIGHWAYS AND ROADS

STATE NUMBER: 16-E-4220-0383  
DATE RECEIVED: 06/15/2016  
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REVIEW CLOSED: 07/15/2016

NORTH CAROLINA STATE CLEARINGHOUSE  
DEPARTMENT OF ADMINISTRATION  
INTERGOVERNMENTAL REVIEW

COUNTY: DARE

MS RENEE GLEDHILL-BARLEY  
CLEARINGHOUSE COORDINATOR  
DEPT OF NATURAL & CULTURAL RESOURCE  
STATE HISTORIC PRESERVATION OFFICE  
MSC 4617 - ARCHIVES BUILDING  
RALEIGH NC



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THE ALBEMARLE COMMISSION

PROJECT INFORMATION

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TYPE: National Environmental Policy Act  
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Rodanthe Breach Long-Term Improvements TIP No. B-2500B

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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: *Renee Gledhill-Barley*

DATE: 6-24-16



MS PAULA CUTTS  
CLEARINGHOUSE COORDINATOR  
DPS - DIV OF EMERGENCY MANAGEMENT  
FLOODPLAIN MANAGEMENT PROGRAM  
MSC # 4218  
RALEIGH NC

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THE ALBEMARLE COMMISSION

PROJECT INFORMATION

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TYPE: National Environmental Policy Act  
Environmental Assessment

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Rodanthe Breach Long-Term Improvements TIP No. B-2500B

CROSS-REFERENCE NUMBER: 14-E-4220-0268

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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. Burdick*

DATE: 24 JUNE 2016



NORTH CAROLINA STATE CLEARINGHOUSE  
DEPARTMENT OF ADMINISTRATION  
INTERGOVERNMENTAL REVIEW

COUNTY: DARE

F02: HIGHWAYS AND ROADS

STATE NUMBER: 16-E-4220-0383  
DATE RECEIVED: 06/15/2016  
AGENCY RESPONSE: 07/11/2016  
REVIEW CLOSED: 07/15/2016

CLEARINGHOUSE COORD REGION R  
THE ALBEMARLE COMMISSION  
512 S. CHURCH STREET  
HERTFORD NC

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Environmental Assessment

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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:

DATE:



*[Handwritten signature]*  
DATE: 6.20.2016



Mr. Rodger Rochelle, P.E.  
Technical Services Division  
North Carolina Department of Transportation  
1516 Mail Service Center  
Raleigh, NC 27699-1516

July 14, 2016

COMMENTS OF SAVE OUR SOUND OBX

ON THE

REVISED ENVIRONMENTAL ASSESSMENT AND SECTION 4(F) EVALUATION  
FOR THE NC 12 – RODANTHE BREACH LONG-TERM IMPROVEMENTS  
BONNER BRIDGE REPLACEMENT PROJECT  
PHASE IIB

RE: Public Feedback on Rodanthe NC12 Bridge Option

Dear Mr. Rochelle:

Please find attached the collective feedback of Save Our Sound OBX, Inc. with regard to the Revised Environmental Assessment and Section 4(F) Evaluation for the NC12 – Rodanthe Beach Long-Term Improvements Bonner Bridge Replacement Project Phase IIB. Save Our Sound OBX, Inc. is a non-profit organization of Rodanthe, North Carolina home and business owners that object to the "revised, preferred alternative" by NCDOT and partners. Your attention to our comments is appreciated.

Sincerely,

Mark Haines  
President  
Save Our Sound OBX, Inc.  
saveoursoundobx@gmail.com  
(513) 604-6641

Enclosures

CC: Michael K. Murphy  
Bryson C. Smith  
GIBSON DUNN  
Gibson, Dunn and Crutcher, LLP  
1050 Connecticut Avenue NW  
Washington, DC 20036-5306

July 15, 2016



## INTRODUCTION AND EXECUTIVE SUMMARY

In December 2013, the North Carolina Department of Transportation (“NCDOT”) and the Federal Highway Administration (“FHWA”) issued an Environmental Assessment (the “2013 EA”) in which the agencies identified as their preferred Phase IIb alternative a bridge within the existing NC-12 easement. Only two and a half years later, the agencies made a 180-degree turn and issued a revised Environmental Assessment (the “2016 EA”) identifying as the new preferred alternative a \$200 million, 2.4-mile “jug handle” bridge running over Pamlico Sound and into Rodanthe. This abrupt change in course was not the result of material changes in environmental effects—indeed, the 2016 EA identifies no new studies or information to justify the about-face—but was rather the predetermined result of NCDOT and FHWA’s settlement agreement in a lawsuit regarding the replacement of the Bonner Bridge over Oregon Inlet (the “Settlement Agreement”).

Desperate to disentangle themselves from extended litigation with the Southern Environmental Law Center (“SELC”), NCDOT and FHWA explicitly agreed, pursuant to the Settlement Agreement, to identify the bridge over Pamlico Sound as the new preferred alternative. As discussed in Section I below, the Settlement Agreement contractually bound NCDOT and FHWA to take a number of steps in furtherance of this new preferred alternative. Rather than satisfying the legal requirement to “[r]igorously explore and objectively evaluate all reasonable alternatives,” 40 C.F.R. § 1502.14(a), the agencies’ issuance of the 2016 EA is merely “an exercise in form over substance” designed to retroactively paper over the agencies’ predetermined decision to pursue the bridge over Pamlico Sound. *Metcalf v. Daley*, 214 F.3d 1135, 1142 (9th Cir. 2000).

In essence, NCDOT and FHWA have used the proposed Pamlico Sound bridge as a bargaining chip to appease SELC, which views this bridge as a step toward eventually eliminating all road access to the Pea Island National Wildlife Refuge. In exchange, SELC has agreed to dismiss its lawsuit over the Bonner Bridge, thereby allowing NCDOT and FHWA to proceed with a replacement project. Although the desire to provide a quick solution to the deteriorated Bonner Bridge is understandable, it does not exempt the agencies from their duties to comply with federal law. Acting in haste, NCDOT and FHWA have violated the National Environmental Policy Act’s (“NEPA’s”) procedural requirements and contractually obligated themselves to peddling a project that is unnecessarily expensive, aesthetically unappealing, and damaging to the community of Rodanthe.

NCDOT and FHWA will be in further violation of NEPA if they fail to issue a Supplemental Environmental Impact Statement (“SEIS”). The original Final Environmental Impact Statement (the “FEIS”) was issued in 2008 and covered several projects, including the Bonner Bridge. In addition to failing to adequately assess the reasonably foreseeable effects of the various alternatives, the FEIS is woefully outdated based on subsequent changes in shoreline projections and data gathered during a 2014 emergency beach nourishment project. In order to properly incorporate this new information into the alternatives analysis, NCDOT and FHWA must issue an SEIS that reevaluates a range of alternatives for Phase IIb, including but not limited to beach nourishment.

## DISCUSSION

### I. The environmental assessment was unlawfully predetermined.

The discussion of environmental impacts and alternatives is the “heart” of the NEPA process and is intended to “provid[e] a clear basis for choice among options by the decisionmaker and the public.” 40 C.F.R. § 1502.14. Council on Environmental Quality

“CEQ”) regulations make clear that the environmental impact analysis “shall serve as the means of assessing the environmental impact of proposed agency actions, rather than justifying decisions already made.” 40 C.F.R. § 1502.2(g); see also *id.* § 1500.1(b) (“NEPA procedures must ensure that environmental information is available to public officials and citizens before decisions are made . . .”). As a result, agencies are not permitted to predetermine the results of their environmental assessments. Instead, NEPA establishes procedures that require agencies to take a “hard look” at the environmental consequences of their actions. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989). This “comprehensive ‘hard look’ mandated by Congress and required by the statute must be timely, and it must be taken objectively and in good faith, *not as an exercise in form over substance, and not as a subterfuge designed to rationalize a decision already made.*” *Metcalf v. Daley*, 214 F.3d 1135, 1142 (9th Cir. 2000) (emphasis added).

In *Metcalf*, plaintiffs challenged a decision by the National Oceanic and Atmospheric Administration (“NOAA”) to support the Makah Indian Tribe’s petition to the International Whaling Commission (“IWC”) for a license to hunt gray whales. The Ninth Circuit found that NOAA’s Environmental Assessment was predetermined on the grounds that it was prepared after NOAA had already entered into a contract with the Makah pursuant to which it committed to making a proposal to the IWC. *Id.* at 1143. This agreement violated NEPA because it contractually bound NOAA to support the hunt even if the subsequently prepared NEPA documentation led NOAA to conclude that the hunt should not be allowed.

There are striking parallels between *Metcalf* and the instant matter. Just as NOAA’s contract with the Makah constituted an unlawful predetermination of an environmental assessment, so too does the Settlement Agreement constitute an unlawful predetermination of the

preferred alternative in the 2016 EA. In summary, NCDOT agreed under the Settlement Agreement to (i) identify the Bridge on New Location as its preferred alternative, (ii) pressure the Merger Team into identifying the Bridge on New Location as the least environmentally damaging practicable alternative, and (iii) together with FHWA, revise the Section 4(f) evaluation and 2013 EA to reflect these wide departures from the 2013 EA. As in *Metcalf*, these stipulations contractually bound NCDOT and FHWA to support a particular alternative even if, during the preparation of the 2016 EA, the agencies determined that this was not the superior alternative. In fact, it is apparent that, absent this agreement, NCDOT and FHWA did not view the Bridge on New Location as the objectively superior alternative, as evidenced by the choice of the Bridge within Existing Easement as the preferred alternative in the 2013 EA. The 2016 EA contains no material changes in the alternatives analysis that would warrant a change in course. The agencies claim to have changed their preferred alternative based on comments received in response to the 2013 EA, but these comments were largely a restatement of comments that were filed prior to the 2013 EA. Taken together, these facts render implausible the 2016 EA’s statement that “[t]he stipulations [in the Settlement Agreement] did not predetermine the choice of the Bridge on New Location Alternative as the Preferred Alternative.” 2016 EA at 1-6. Furthermore, while the Settlement Agreement states that “[n]othing in this Agreement requires or should be interpreted to predetermine NCDOT’s or FHWA’s choice of the Phase IIb Bridge on New Location as the Selected Alternative,” Settlement Agreement at 5-6, this language is inadequate to avoid a finding of predetermination. Although NCDOT and FHWA are not contractually bound to choose the Bridge on New Location as the *final* Selected Alternative, the Settlement Agreement clearly required the agencies to take steps that have

fundamentally shifted the momentum of the alternative selection process in favor of the Bridge on New Location.

In addition to greatly downplaying the Settlement Agreement's role in shaping the decision to abandon the Bridge within Existing Easement in favor of the Bridge on New Location, the 2016 EA does not contain the Settlement Agreement in an appendix. By depriving the public easy access to a contract that bound the agencies to take a position advocating for a certain alternative, NCDOT and FHWA have failed to "provide all available information that is 'essential to a reasoned choice among alternatives.'" *Sierra Club v. Van Antwerp*, 709 F. Supp. 2d 1254, 1271 (S.D. Fla. 2009), *aff'd*, 362 F. App'x 100 (11th Cir. 2010) (quoting 40 C.F.R. § 1502.22).

## II. An SEIS is required.

CEQ requirements provide that an agency must supplement an environmental impact statement if "[t]he agency makes substantial changes in the proposed action that are relevant to environmental concerns" or "[t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." 40 C.F.R. § 1502.9(c)(1)(i)-(ii). Similarly, FHWA regulations require an EIS to be supplemented when the FHWA determines that "[c]hanges to the proposed action would result in significant environmental impacts that were not evaluated in the EIS." 23 C.F.R. § 771.13(a)(1).

In the instant matter, NCDOT and FHWA have made substantial changes in the proposed action by putting forth two site-specific bridge alternatives that were not adequately assessed in the FEIS. Additionally, the 2060 projected shoreline upon which the FEIS was based has proven to be inaccurate, and the 2014 emergency beach nourishment project at the Rodanthe S Curves Hot Spot has provided new information bearing on the environmental effects of the alternatives

assessed in the FEIS. These new circumstances and information are critical to an adequate evaluation of alternatives and must be incorporated into an SEIS.

### A. NCDOT and FHWA have made substantial changes in the proposed action and are therefore required to issue an SEIS.

The environmental effects of neither the Bridge on New Location nor the Bridge within Existing Easement were adequately evaluated in the FEIS. At that time, the Bonner Bridge Replacement Project had not yet been divided into separate phases. Rather, the project was treated as a single phase with seven alternatives that did not include the specific alternatives proposed in the 2013 and 2016 EAs. The introduction of the Bridge within Existing Easement and Bridge on New Location therefore represents a "substantial change[]" in the proposed action that [is] relevant to environmental concerns." 40 C.F.R. § 1502.9(c)(1)(i).

Additionally, CEQ requirements provide that impact analysis must "[r]igorously explore and objectively evaluate *all reasonable alternatives*" to a proposed action in order to compare the environmental impacts of the alternatives. 40 C.F.R. § 1502.14(a) (emphasis added). NCDOT and FHWA have failed to meet these obligations by prematurely disregarding alternatives such as beach nourishment and a combined approach of bridges and beach nourishment.

In the words of the 2010 Environmental Assessment (the "2010 EA"):

Possible solutions for later phases of the project include bridging, road relocation, and/or beach nourishment. All of these solutions, which are available for implementation as part of the Preferred Alternative, were identified and assessed as part of the FEIS and *would be reassessed at the time decisions on future phases are being made.*

2010 EA at 2-28 (emphasis added). Despite these assurances, NCDOT and FHWA have conducted a detailed study of only two alternatives during the current Phase IIb — the Bridge within Existing Easement and the Bridge on New Location. As explained in the 2016 EA, the

Merger Team reached consensus at a November 14, 2012 meeting that neither beach nourishment nor a combined nourishment/bridge approach would be carried forward as detailed study alternatives. 2016 EA at 2-7. This decision was made over three and a half years prior to the publication of the 2016 EA and directly conflicts with the 2010 EA's guarantee that such alternatives would be reassessed at the time that decisions on future phases are being made. By inaccurately stating that alternatives such as beach nourishment would be reassessed at the time of later phase decisions, the 2010 EA did not put the public on notice that these alternatives would be unilaterally eliminated by the Merger Team without further public comment.

**B. *The change in the 2060 projected shoreline and the 2014 emergency beach nourishment project constitute significant new circumstances and information that require an SEIS.***

Not only does NCDOT and FHWA's refusal to reassess beach nourishment and other alternatives conflict with prior assurances provided in the 2010 EA, but it also violates NEPA's requirement that an agency prepare an SEIS to "[r]igorously explore and objectively evaluate all reasonable alternatives" in light of "significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." 40 C.F.R. § 1502.14(a); 40 C.F.R. § 1502.9(c)(1)(ii).

The circumstances underlying the analysis of beach nourishment as an alternative in the FEIS have changed dramatically over the past several years, thus rendering the FEIS obsolete. First, "the erosion in the Rodanthe area through 2060 is now forecast to be less than was forecast for the 2008 FEIS and 2010 EA." 2013 EA at 2-11. This indicates a flaw in one of the fundamental premises underlying the agencies' alternatives analysis and suggests that the extent of required beach nourishment may be much less than previously estimated. Because new information has shed light on the fact that the FEIS was based on an erroneous estimate of future

shoreline erosion, NCDOT and FHWA must prepare an SEIS in which alternatives are evaluated in light of this new information.

Additionally, the 2014 emergency beach nourishment project at the Rodanthe S Curves Hot Spot (which lies within the corridor contemplated by the instant Phase IIb proposal) generated new data in light of which beach nourishment should be reevaluated as an alternative to the proposed bridges. One of NCDOT and FHWA's primary stated reasons for eliminating beach nourishment as an alternative for detailed study is "uncertainties related to the availability of a suitable sand source . . ." 2016 EA at F-20. By investigating sand sources for the 2014 beach nourishment project, the U.S. Army Corps of Engineers "identified sand sources within Wimble Shoals" that were "compatible with the native beach sand in the project area." 2016 REA at 2-16. By clarifying the uncertainties surrounding sand sources, this new information nullified a primary reason for eliminating beach nourishment as a long-term alternative. Additionally, the successful 2014 beach nourishment project provided site-specific data points regarding the efficacy and cost of beach nourishment and is therefore integral to any meaningful analysis of beach nourishment as a long-term solution.

Of particular note, the Corps of Engineers concluded that the 2014 beach nourishment project "would have no significant impacts" on the environment. 2016 EA at 2-16. Given that the bridge alternatives entail significant environmental impacts, this raises serious questions as to why beach nourishment has not been reevaluated. Despite the fact that "[t]he largest amount of commenters preferred beach nourishment instead of a bridge project," 2016 EA at F-3, NCDOT continues to summarily reject this approach by simply stating that it has already been eliminated as a detailed study alternative. Because of the new circumstances and information generated by the reduction in the anticipated erosion area and the 2014 nourishment project, beach

nourishment and other alternatives should be re-assessed in a revised Environmental Impact Statement, not as part of a predetermined Environmental Assessment.

In addition to NEPA's legal requirements, practical utility also warrants a detailed study of beach nourishment as a long-term solution. Even after factoring in the need to perform nourishment on an ongoing basis, beach nourishment was still "the least costly of the alternatives assessed in the 2008 FEIS." 2016 EA at F-19. In light of the reduction in the projected erosion area, beach nourishment would likely be even less costly than estimated in the FEIS. The proposed Pamlico Sound bridge, on the other hand, is estimated to cost between \$179 million and \$198 million. 2016 EA at 3-7. By prematurely eliminating beach nourishment as an alternative, NCDOT and FHWA are on a path that would waste millions of taxpayer dollars and deplete funds that could be used for more pressing matters. It commits the state and its taxpayers to hundreds of millions of dollars to address one small, 2.4-mile section of Route 12 when the next big storm could threaten other parts of the Outer Banks shoreline. In addition to being more cost effective than a bridge, beach nourishment also provides flexibility in terms of the timing and nature of construction and expenditures, and minimizes the obstruction of views, noise, recreational impairments, property condemnation, and property value diminution.

**C. *An SEIS is needed to assess reasonably foreseeable effects that were disregarded in prior NEPA documents.***

NEPA was designed to ensure that impact analysis "focus[es] on reasonably foreseeable impacts." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 356 (1989). The NEPA documents in the instant matter fail to consider a number of reasonably foreseeable socioeconomic impacts, as required by 40 C.F.R. § 1508.14 when, as here, "economic or social and natural or physical environmental effects are interrelated." For example, none of the NEPA documents on record have assessed the impact that these alternatives would have on property

values in the Rodanthe area. While the 2013 and 2016 EAs mention several adverse impacts of the sound bridge, such as obstruction of views and the impairment of kiteboarding and windsurfing, the environmental assessments fail to tie these discrete impacts into a holistic analysis of the effects on the human environment that are likely to result.

Many of the houses and businesses in and around Rodanthe depend on tourism as a source of income. Tourism, in turn, is driven largely by the fact that Rodanthe (i) offers a kiteboarding and windsurfing venue that is widely considered to be one of the world's finest, and (ii) is one of the few places in America where one can witness both an unobstructed sunrise and sunset by merely walking a few blocks. The Bridge on New Location would fundamentally disrupt windsports and views on Pamlico Sound. As a result, rental incomes and property values would be adversely affected. A local water sports business, Kite12.com, also would be adversely impacted by the Bridge on New Location, notwithstanding the 2016 EA's erroneous assertion that "[t]here are no businesses serving these types of activities along the shoreline in the area affected." 2016 EA at 4-32.

Reduced business and rental income, diminished property values, and the condemnation of certain properties would, in turn, foreseeably contribute to a reduction in local tax revenue. Thus, the adverse effects of the bridge could have severe socioeconomic impacts on the community of Rodanthe, none of which are adequately evaluated in the NEPA documents prepared to date.

**CONCLUSION**

NCDOT and FHWA's identification of the Bridge on New Location as the preferred alternative in the 2016 EA is an unlawfully predetermined act. Additionally, the agencies must issue an SEIS due to substantial changes in the proposed action and the new circumstances and

information generated by the altered shoreline projections and the 2014 beach nourishment project.

Sincerely,

Save Our Sound OBX

By: 

Name: Mark Haines

Title: President

SOUTHERN ENVIRONMENTAL LAW CENTER

Telephone 919-967-1450

601 WEST ROSEMARY STREET, SUITE 220  
CHAPEL HILL, NC 27516-2356

Facsimile 919-929-9421

July 5, 2016

VIA ELECTRONIC MAIL AND U.S. MAIL

Nora McCann, E.I.T.  
Project Development Engineer  
North Carolina Department of Transportation  
1548 Mail Service Center  
Raleigh, NC 27699-1548  
nmmcann@ncdot.gov

Re: Revised Environmental Assessment of the Bonner Bridge Replacement –  
Phase IIb, Rodanthe Breach Project

Dear Ms. McCann:

The Southern Environmental Law Center (“SELC”) submits the following comments to the North Carolina Department of Transportation (“NCDOT”) and the Federal Highway Administration (“FHWA”) on the Revised Environmental Assessment of the Bonner Bridge Replacement – Phase IIb, Rodanthe Breach project. We previously submitted comments on the initial, 2014 Environmental Assessment on January 24, 2014. SELC supports NCDOT’s selection of the Bridge on New Location Alternative.

On June 15, 2015, the National Wildlife Refuge Association and Defenders of Wildlife (collectively “the Conservation Groups”), represented by SELC, reached a settlement with NCDOT, FHWA, and the North Carolina Division of Coastal Management. The settlement resolved two lawsuits brought by the Conservation Groups challenging the legality of State and federal environmental reviews of the Bonner Bridge Replacement.

Pursuant to the settlement agreement, NCDOT committed to “identify Phase IIb Bridge on New Location as its preferred alternative and seek Merger Team Concurrence Point 3 . . . on Phase IIb Bridge on New Location Alternative area . . . .” Subsequently, “if the Phase IIb Bridge on New Location Alternative [was] determined to be the least environmentally damaging practicable alternative (“LEDPA”) and [became] the Selected Alternative,” the Conservation Groups “covenant[ed] not to sue the State or the United States including any agency, official or employee as to any claim based on, arising out of or regarding, in whole or in part, the NEPA and Section 4f documents issued for the Phase IIb Bridge on New Location Alternative, or any permit, approval or any other decision regarding the Phase IIb Bridge on New Location Alternative.”

Nora McCann, E.I.T.  
July 5, 2016  
Page 2

We appreciate that NCDOT has thus far carried out its commitments pursuant to the settlement agreement. We believe that, among the detailed study alternatives, the Bridge on New Location Alternative is the best option both for the environment and for ensuring safe, reliable access to Hatteras Island. As set forth in the settlement agreement, SELC will not challenge the validity of the Environmental Assessment if the agencies move ahead with the Bridge on New Location Alternative as the Selected Alternative for Phase IIb.

Sincerely,



Kym Hunter  
Staff Attorney



Nick Torrey  
Staff Attorney

KH/NST/lap





# *Appendix C*

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**Response to Comments on  
the Revised Phase IIb  
Environmental Assessment**



## C. Response to Comments on the Revised Phase IIb Environmental Assessment

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This appendix provides responses to comments on the Revised Phase IIb EA received from the public, state and federal environmental resource and regulatory agencies, and non-governmental organizations (NGOs). The written correspondence received from the public, agencies and NGOs is included in Appendix B. The comments and responses are presented in the following sections:

<b>C.1</b>	<b>Public Comments .....</b>	<b>C-1</b>
C.1.1	Prefer the Selected Alternative (2014B Bridge on New Location Alternative or Bridge on New Location Alternative in General).....	C-4
C.1.2	Concerns with the Change in the Selected Alternative Decision and the Involvement of Environmentalists in the Change.....	C-6
C.1.3	Other Alternatives Preferred by Commenters.....	C-16
C.1.4	General Impacts of the Selected Alternative .....	C-39
C.1.5	Community Impacts of the Selected Alternative .....	C-40
C.1.6	Natural Resource Impacts of the Selected Alternative .....	C-57
C.1.7	Need to See the Bigger Picture.....	C-63
C.1.8	Keeping the Public Informed .....	C-67
C.1.9	Other .....	C-73
<b>C.2</b>	<b>Government Agency Comments and Responses .....</b>	<b>C-74</b>
C.2.1	Federal Agencies .....	C-75
C.2.2	State Agencies.....	C-80
C.2.3	Regional Agencies—The Albemarle Commission .....	C-81
<b>C.3</b>	<b>Non-Governmental Organization Comments and Responses .....</b>	<b>C-81</b>
C.3.1	Save Our Sound OBX, Inc. ....	C-81
C.3.2	Southern Environmental Law Center .....	C-97

### C.1 Public Comments

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A series of three Public Hearings were held on the following dates:

- June 20th at the Ocracoke Community Center in Ocracoke
- June 21st at the Rodanthe-Waves-Salvo Community Center in Rodanthe
- June 22nd at the Dare County Administration Building in Manteo

All three public hearings were an open house format without a formal presentation. Approximate attendance was:

- Ocracoke Public Hearing: 17
- Rodanthe-Waves-Salvo Community Center Public Hearing: 92
- Manteo Public Hearing: 25

The hearings presented NCDOT's Preferred (now Selected) Alternative (2014B Bridge on New Location Alternative) for long-term improvements in the Rodanthe Breach area (Phase IIb), as well as the Bridge within Existing NC 12 Easement Alternative and the other two Bridge on New Location Alternative alignments (2013 and 2104A) assessed in the May 2016 Revised Environmental Assessment for the project. A slideshow and handouts were provided. The open house meeting rooms included multiple displays that were manned with project staff to field questions and comments from the public. The primary displays focused on the Preferred Alternative, including hearing maps and visualizations. Hearing maps depicting the other detailed study alternative alignments also were displayed. A display board also depicted the location of the three active B-2500 projects: Bonner Bridge replacement (Phase I), Pea Island breach interim bridge, and the Phase IIb project. A display board depicted the location of the various NCDOT projects on Hatteras Island and Ocracoke Island that intend to address the threat of beach erosion on NC 12.

The public comment period began on June 5 with the appearance of the first newspaper ad announcing the public hearings and ended July 15, 2016. A total of 65 sets of written comments were received within the comment period from the public. Accounting for all comments, individuals expressed the following project alternative preferences:

- Prefer the NCDOT Preferred (now Selected) Alternative (2014B) Bridge on New Location Alternative: 10
- Oppose the NCDOT Preferred (now Selected) Alternative (2014B) Bridge on New Location Alternative: 41
- Prefer Other Detailed Study Alternatives
  - Prefer Bridge within Existing NC 12 Easement Alternative:15
  - Prefer 2013 Bridge on New Location Alternative: 1
  - Prefer 2014A Bridge on New Location Alternative: 0
- Other Alternatives
  - Prefer Beach Nourishment: 22

- Prefer causeway/revetment in the existing NC 12 easement: 1
- Prefer repairing NC 12 as needed following storms: 6

A digital recorder was brought to the public hearings for use by anyone who wished to make oral comments. No oral comments were received.

Sixty-five sets of written comments were received from 56 commenters. In organizing the written comments from all sources and preparation of responses, the following categories were used:

- Prefer the Preferred (now Selected) Alternative (2014B Bridge on New Location Alternative or Bridge on New Location Alternative in General)
- Concerns with the Change in the Preferred (now Selected) Alternative Decision and the Involvement of Environmentalists in the Change
- Other Alternatives Preferred by Commenters
  - Bridge within Existing NC 12 Easement
  - Beach Nourishment
  - 2013 Bridge on New Location Alternative
  - Scaled Down Bridge within Existing Easement with Nourishment
  - Causeway/Revetment or Artificial Reefs
  - Repair the Road when Needed
  - Move the Rodanthe Landing
- General Impacts of the Preferred (now Selected) Alternative
- Community Impacts of the Preferred (now Selected) Alternative
  - Visual and Noise Impact
  - Recreation Impact
  - Economic Impact, Including Property Value
- Natural Resource Impacts of the Preferred (now Selected) Alternative
  - Water Quality

– Fish and Wildlife

- Need to See the Bigger Picture
- Keeping the Public Informed
- Other

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. The complete comment letters are in Appendix B.

**C.1.1 Prefer the Preferred (now Selected) Alternative (2014B Bridge on New Location Alternative or Bridge on New Location Alternative in General)**

Names	Reasons
1. Mary Ann Cotton	I like and hope the 2014B project will happen.
2. William Cobin	I’m in agreement with 2014B.
3. Charles Watson	The “jug handle” alternative is the only real alternative available because of the erosion rate. If the current roadbed is raised there will be surf west of the raised roadbed within 5 to 10 years.
4. Judy Banks	<p>In my opinion, the "jug handle" Pamlico Sound alternative is the most effective and in the long term the most reliable option for Hatteras Island residents.</p> <p>The “S” curve area north of Mirlo Beach in Rodanthe is a Hot Spot that will always be susceptible to a breach from the ocean. Accepting that fact, means that the correct location of a bridge should be away from that area; not subjecting the foundation pilings to the direct tidal flow from the ocean. I agree with the suggested Pamlico Sound bridge sites, rather than a bridge within the existing NC 12 easement.</p> <p>As to the concerns from the Mirlo Beach, northern Rodanthe property owners, I suggest that their property is inevitably going to be effected by the breach area north of Rodanthe, regardless of the placement of the bridge. In order to resolve the never ending manual protection of a surface roadway in the breach area, a bridge must be built. If a bridge is built and maintenance ceases on the surface right-of-way, a breach will occur. Inevitably, a breach will affect all property owners in northern Rodanthe. A breach infers littoral drift accumulation</p>

Names	Reasons
	<p>ocean and sound side, migration of the breach area to the south, and predictable shoaling sound side. Once maintenance of the existing NC12 easement is abandoned in the refuge property, a breach will occur.</p> <p>Purchasing property on an island is a bet on Mother Nature. You may own property for generations or you may lose it in the next hurricane. Ultimately, it is not the role of the NCDOT, nor the State of North Carolina, to try to control Mother Nature in order to protect private property. In my opinion, the purpose of this bridge is to provide long term effective and efficient ingress and egress to Hatteras Island. The Pamlico Sound bridge locations provide that.</p>
5. Ted Hamilton	<p>My only public comment for the record is that I want to see the Liberty Gas Station and Store to remain so I support the current preferred alternative (2014B Bridge on New Location Alternative) but do not support any revision to that current preferred alternative alignment that would cause the Liberty Gas Station and/or store to be closed.</p>
6. James Charlet	<p>As you well know, since the first roads were ever built anywhere, they at one point had to go through someone's property. None of those folks were ever happy, and it is quite understandable. As with so many things involving huge numbers of people, often what is good for that huge majority is not so good for those taking the brunt. I would emphatically feel the same. But the vast majority if not the entirety of the thousands of Hatteras Island permanent residents, the thousands of non-resident property owners, and the MILLIONS of annual visitors her, "Thank You" for finally providing a safe, permanent access to Hatteras Island.</p>

*Response: A Bridge on New Location Alternative was chosen as the Selected Alternative in part because it would provide for long-term NC 12 reliability in the 'S' Curves Hot Spot and Rodanthe area in the face of threats to NC 12 from shoreline erosion. There are no plans to revise the 2014B Bridge on New Location Alternative such that it would displace the Liberty Gas Station/Island Convenience Store.*

**C.1.2 Concerns with the Change in the Preferred (now Selected) Alternative Decision and the Involvement of Environmentalists in the Change**

Names	Reasons
1. Beverly Boswell	Why are we bowing to the environmentalists?
2. Hannah Byrd	It seems that northern Rodanthe is being sacrificed for the sake of appeasing the SELC and moving forward with Bonner Bridge. Allowing the SELC to have this kind of power, to remove a little more access to Pea Island is unjust.
3. Ross Byrd	Is there any way an alternative will be considered? Or has the settlement with SELC already been cemented so no other options can be considered?
4. Amy Jones and Tom Aschmoneit; Morris Neuman and Jer Mehta	<p>[Please explain why the proposed elevated bridge moved? Why can't we use the existing park easements?][Please explain why negotiations to change the 'Preferred Alternate" routing did not include a representative from the community of Rodanthe?]</p> <p>Many of us have dedicated our lives to our endeavors in Rodanthe, we pay our taxes, have survived storm damage, repaired our homes, community and livelihoods at great expense --- to now possibly have it go away because of an environmentalist group (SELC) that we do not believe is concerned about our environment at all.</p> <p>What were the deciding issues that turned the primary selected alternative route; placing an elevated roadway in the existing NC 12 easement, into a non-viable alternative? How much money was spent on that plan before and after the SELC brought the new litigation with the culmination of a "new preferred route"? Why wouldn't the DOT attempt to use as much of the existing infrastructure and easements as possible?</p> <p>Why was core drilling not performed at the distal/west end of the study area, if a final decision on bridge location had not been already decided? (2013 Alternative) What was the effect of the test drilling on the area?</p>
5. Margie Dimig	I wish to submit my sincere objection to the newest, already locked in, alternative for the "jug handle". The entire process that ensued to get a replacement for Bonner Bridge, the SECRET negotiations conducted with NCDOT and SELC absolutely nauseate me. I retired from the federal government two years ago. I know the process of negotiations. But I have never encountered a time where the government succumbed to an



Names	Reasons
	<p>entity and have to do their bidding like puppies with their tails between their legs.</p> <p>Now that that shameful event is behind us how dare you again allow the conservation groups to tell you where to put the bridge. How dare you allow SUBMERGED AQUATIC VEGETATION to be your driving decision and not the lives, investments and livelihoods of actual living, breathing human beings. Some of whom have put everything they have into their businesses and now will be destroyed. There is no reason for this alternative when the alternative to go further out into the sound would work. I have been coming to the Outer Banks and Hatteras Island for over 50 years. I have seen many changes, not all of them good. Hatteras Island and Ocracoke residents and visitors do need a stable and secure passage on and off the Island. But there must be consideration for those that will lose everything in the name of plants. I can't even comprehend that choice.</p> <p>And then there is Buxton, another very ignored "hot spot". I suppose someday there will be a bridge there also. I envision a time when visitors will only get to wave at the lighthouse as they cross over a bridge because the animals and vegetation will trump human kind.</p>
<p>6. Guy and Sandy Finn (June 14, 2016)</p>	<p>Everyone wants a better and more secure transportation corridor through the outer banks. We understand it's vital for business, commerce, and emergency access. What we don't want is to feel we have taken a back seat to closed door meetings and agreements made out of the light. These public hearings appear to be after the fact and to inform us only. This process has led many in the local community of Rodanthe to question the motives and processes that have occurred with decisions regarding the Rodanthe bridge. We "the little people" feel like we have been left out of a process that will immediately and distinctly effect our futures, and our children's futures. We feel that we were given up as a bargaining chip while dealing with the SELC. This will be a life changing issue for many of the local people. Many of the homes in the area will foreclose because of reduced rental income the owners have come to expect, and property values will plummet for the next several years. During the litigation between NCDOT and SELC in 2015, decisions were made by a group of involved parties; i.e. USFS, Fish and game, Corps of Engineers, Hatteras Electric Coop etc. that effect the people who live immediately adjacent to the</p>

Names	Reasons
	<p>project. Please explain why negotiations to change the ‘Preferred Alternate’ routing did not include a representative from the community of Rodanthe? While we were not part of the lawsuit, we are the ones who will have live with the decision made by the committee. This decision (placement of the bridge and use of taxpayer dollars) is a worse case example of group speak and caving to special interest at the cost of a few. What were the deciding issues that turned the primary selected alternative route; placing an elevated roadway in the existing NC12 easement, into a non-viable alternative? How much money was spent on that plan before and after the SELC brought the new litigation with the culmination of a “new preferred route”?</p> <p>During October and November of 2015 core sample drilling was performed along the inside of the study zone. It appeared that drilling was only performed along the inner most section of the study area and not in the whole study zone. Why was core drilling not performed at the distal/west end of the study area, if a final decision on bridge location had not been already decided? (2013 Alternative)</p> <p>In the latest flyer sent to some homeowners, the decision has been made to change the routing of the bridge to the closer to the shore route “Jug Handle” version 2014B. This decision was made on the basis of effect on aquatic plants. As a person who lives here full time, and spends hours each day in the Sound, it is apparent the aquatic plants also exist in the area where you are proposing the new 2014B version, its dependent on the time of year and temperatures. That rationale only works as appeasement to another entity in the decision making committee. So the 2013 version of the bridge was thrown out because of aquatic plants location and amount, moving the bridge location closer to the shore. Who made that decision and why does it trump the homeowners’ that live immediately adjacent? WE ARE ADAMANTLY OPPOSED TO MOVING THE BRIDGE CLOSER TO THE SHORELINE THAN THE 2013 BRIDGE VERSION. Run off pollution, Noise, light pollution, loss of view, restrictions of use, are all reasons for our position.</p> <p>We feel that NCDOT’s previous decision (raised highway in existing NC12) was made in the best interest to all involved. It appears at this point special interests have more influence on the</p>

Names	Reasons
	decision than the local residents. LOCAL LIVES MATTER, SAVE OUR SOUND!
7. Carl and Polly Moffatt	Which leads me to the conclusion that the bridge replacement for our area has more to do with giving acres to the refuge and getting people out of the refuge than actually providing safe transit for the area's residents—there is no logical reason for any bridge to start as deep in the refuge that is proposed by any of the so-called alternatives, other than whatever deal NC DOT has made with the refuge management. (After I recently read an article in a Virginia paper, my original opinion seems to be correct – NC DOT has made a deal with the refuge. It would be refreshing if so much consideration was given to the residents of Hatteras Island).
8. Thomas Hollowell	What a complete mis-guided project this will be if allowed to go forward. This project was a sell out to get the Southern Environmental Law group off your backs so that the Bonner bridge could be replaced. Not sure who wears the pants at NCDOT, but now that you're well on your way with the Bridge replacement, go back and get the deal for the "Jug Handle in the sound" off the books.
9. Rob (Giffrj@hotmail.com)	Given the information I have reviewed for this proposed bridge project I am greatly opposed to it and believe it to be a great misuse of tax payer money. Given the highly viable alternative options, the only reason I can think of to go with this bridge option is political fraud. I am not familiar enough with all the details and facts, so I cannot intelligently speak in detail on the matter. But others are and I want to be put on record advocating that their voice be heard. I love the OBX and spend 1-2 weeks a year with my family there for the past 17 years. I don't think the bridge will take away from the aesthetics of the area but I do believe a more economical solution is already available. Also, I think the proposed traffic routing for this bridge will result in significantly more traffic jams.

*Response: NCDOT identified the 2014B Bridge on New Location Alternative as the Preferred (now Selected) Alternative after considering comments received from the public and state/federal agencies on the 2013 Phase IIb EA, including January 2014 public hearing comments. A team of state/federal resource and permitting agencies (NEPA Section 404 Merger Team) unanimously concurred on June 17, 2015 that the 2014B Bridge on New Location Alternative is the Least Environmentally Damaging Practicable Alternative (LEPDA). A range of community, cultural resource, and natural resource impacts were considered in their concurrence. The current Merger Team members are:*

NCDOT, FHWA, US Army Corps of Engineers (USACE), US Environmental Protection Agency (USEPA), US Fish & Wildlife Service (USFWS) (Raleigh Office), USFWS (Pea Island National Wildlife Refuge), National Marine Fisheries Service (NMFS), National Park Service (NPS)-Cape Hatteras National Seashore, North Carolina Department of Environmental Quality (NCDEQ)-Division of Water Resources (DWR) and Division of Coastal Management (DCM), North Carolina Wildlife Resources Commission (NCWRC), North Carolina Department of Natural and Cultural Resources (NCDNCR), and the Albemarle Rural Planning Organization (RPO). The US Coast Guard (USCG) is not a signing team member, but is sent information before and following Merger Team meetings. Each Merger Team member provides separate and independent input at each concurrence point. Any team member has the authority to not concur or to abstain. The same team was involved in the development of the detailed study alternatives and their alignments. NCDOT, FHWA, and NCDEQ-DCM were the only Merger Team members who also were parties to the settlement agreement.

Involvement of SELC. The settlement agreement with the SELC says that NCDOT will identify the Bridge on New Location Alternative as its Preferred Alternative and seek approval from resource and regulatory agencies. As described above, the Merger Team members rendered their own independent decisions on the LEDPA and had the discretion not to concur with NCDOT's proposal or to abstain. NCDOT brings a recommendation to all Merger Team concurrence meetings, so NCDOT's recommendation of a particular alternative at this meeting was not unusual. Further, NCDOT would not have agreed to this stipulation if they did not believe based on the impact assessment and public and resource agency input in 2014 that this was the best alternative to implement. The settlement agreement does not specify a particular Bridge on New Location Alternative alignment, e.g., 2013, 2014A, and 2014B. The settlement agreement also states that nothing in the agreement requires that the Bridge on New Location Alternative be identified as the "Selected Alternative."

The SELC agreement to settle the lawsuit was completed without public involvement because the normal procedure for any lawsuit settlement, public or private, is to only involve representatives of the parties in the lawsuit.

The Preferred (now Selected) Alternative was developed before the settlement agreement. Both a Bridge on New Location Alternative (2013 alignment) and the Bridge within Existing NC 12 Easement Alternative were assessed in the 2013 Phase IIb EA and discussed at the January 2014 Public Hearings. The 2014A and 2014B alignments were developed in response to state and federal environmental agency comments on the 2013 Phase IIb EA as it relates to essential fish habitat and submerged aquatic vegetation (SAV). Discussions with state/federal resource and permitting agencies on adjustments to the alignments were on-going independently during settlement agreement negotiations.

Money Spent on the Bridge within Existing NC 12 Easement Alternative Before and After New SELC Litigation. The settlement agreement was not related to new litigation. The focus of the project after the public hearings was on the Bridge on New Location Alternative. No new expenditures were made assessing the Bridge within Existing NC 12 Easement Alternative after the public hearing, which occurred prior to settlement agreement negotiations.

Core Sample Drilling. Core sample (soil sample) drilling was done in 2015 and 2016 prior to the identification of the Selected Alternative (which occurred with the release of this ROD) as a part of NCDOT's effort to advance the Phase IIb project as quickly as possible. NCDOT's motivation is the on-going risk that a major storm will damage the sandbag dune that currently protects the roadway, forcing additional costly repairs that would involve closing this vital roadway, potentially for weeks at a time. Soil sample drilling was done only along the 2014A and 2014B Bridge on New Location corridor alignments because at the time NCDOT had already decided based on resource agency coordination that the 2013 alignment was not going to be its Preferred Alternative. If the 2013 alignment had been identified as the Selected Alternative in this ROD, then additional drilling would have occurred. The results of soil sample drilling are being used as a part of developing the specifications for the bridge's foundations.

Soil sample drilling was completed under a Nationwide Permit No. 6 from USACE and a modification/renewal of an existing Special Use Permit from the Refuge. Soil drilling impacts on Pamlico Sound were minimal, affecting 0.05 acre (50 square inches for each of 40 borings). Soil drilling in the sound was completed from a jack-up barge and involved driving or drilling a steel casing into the sound bottom. Other tools were used to sample the soil within the casing. The casing was removed after sampling was completed. Borings on land or in shallow water in the sound were performed from a rubber tired drill rig and low ground pressure tracked drill rig, respectively. Disturbance from the borings on land were limited to a 2-foot radius around each of five boring locations. No borings occurred in wetlands.

Soil sample drilling was done for the Bridge within Existing NC 12 Easement Alternative in October/November 2013 prior to the release of the 2013 Phase IIb EA when this alternative was still NCDOT's Preferred Alternative.

Public Involvement. During the discussions about alternative alignments, the impacts to the Rodanthe community were reviewed and considered, including relocation of residents and businesses, visual change (including the distance from the bridges under consideration to existing land uses), local access change, and impacts to community services, recreation, and cultural resources. While no representative from the Rodanthe community was included on the team, the agency team that decides which alternative will be constructed meets in a spirit of compromise and includes local representation via a member of the Albemarle Rural Planning Organization, which is tasked with representing the local community and transportation interests on the team.

*The public hearings held from June 20 to 22 were the public's opportunity to provide input on the new Preferred (now Selected) Alternative. The change in the Preferred Alternative was based in part on the public comment at the January 2014 public hearings, as well as on agency comments. The purpose of the 2016 public hearings and the EA review period was to receive additional public comment for consideration during the Selected Alternative decision. Comments from interested stakeholders from the Rodanthe local community, and the public generally, is vital to informing NCDOT in its NEPA analysis of environmental concerns. As happened at the January 2014 public hearings, public comments can lead to a change in the Preferred Alternative. Comments also can result in refinements to a Preferred Alternative to avoid or minimize impacts and the development of additional mitigation measures.*

*See the responses to comments under Section C.1.8, "Keeping the Public Informed."*

*Impact Findings Related to Not Pursuing Further the Bridge within Existing NC 12 Easement Alternative, including the Use of Existing NC 12 Easements in the Refuge. The impacts of the Bridge with Existing NC 12 Easement Alternative and the three Bridge on New Location corridor alignments are presented in Section 4.2 of the Revised Phase IIb EA. Impacts of the Bridge on New Location Alternative corridor also are addressed in Section 4.2 of the 2013 Phase IIb EA and Chapter 4 of the 2008 FEIS (as the Bridge South component of the Road North/Bridge South Alternative). The basis for choosing the 2014B Bridge on New Location Alternative as the Selected Alternative is presented in Section 3.2 of this ROD. Key impact findings related to not retaining the Bridge within Existing NC 12 Alternative as the Preferred Alternative are:*

- A 30-foot high bridge (deck elevation) would be in the immediate views of over 50 residential and business structures that line NC 12. Views from homes would be blocked at the second or third story levels. From the ground, the bridge would be a dominating presence in front of these homes and businesses. (See Figure 14 of the Revised Phase IIb EA.) This visual impact is considered to be greater than that of any alignment of the Bridge on New Location Alternative. As shown in Figure 11 of the Revised Phase IIb EA, while the bridge is in the sound, the distance from the bridge to the soundside shoreline would range from 460 to 2,350 feet. The bridge would not reach its full height until it is in the sound. The bridge would range from 12 to 19 feet high as it passes the two homes at the west end of Pappy Lane near the bridge, 20 and 90 feet away, respectively.*

*The bridge would be 25 feet high (deck elevation) with all the Phase IIb alternatives to provide 17 feet between sea level and the bottom of the spans between the piers. One exception is with the Bridge within Existing NC 12 Easement Alternative within Rodanthe where the bridge would be 30 feet in elevation to ensure adequate clearance for traffic passing under the bridge. The 17 feet will allow a storm surge to pass under the bridge. Placing the spans lower than that risks the storm surge damaging the spans. The lower bridge elevation of the temporary bridge and new interim*

*bridge at the Pea Island breach is considered acceptable because they are not planned to be permanent.*

- *With beach erosion, the bridge within existing easement would ultimately be in the Atlantic Ocean, blocking ocean views and impacting water sports recreation in the ocean. A similar impact does occur with the Bridge on New Location Alternative except this bridge would be farther off shore. In the case of Bridge within Existing NC 12 Easement Alternative, the bridge would be 550 feet offshore at the Refuge boundary in 2060 and less further south. Prior to 2060, the bridge would be first on the beach and then in the ocean at even shorter distances. The 2014B Bridge on New Location Alternative, except where it turns to approach the shore, would be approximately 1,400 feet into Pamlico Sound.*
- *A Bridge on New Location Alternative would have greater water resource impacts than the Bridge within Existing NC 12 Easement Alternative because of its presence in the sound, including the impacts of construction in the sound and bridge runoff going into the sound. Pamlico Sound is classified as essential fish habitat and contains SAV, considered higher quality marine life habitat. NCDOT worked with the natural resource agencies to help minimize and mitigate natural resource impacts in the sound, recognizing that the community impact would be less with a Bridge on New Location Alternative. The decision to consider the 2014A and 2014B Bridge on New Location alignments was a part of that effort.*
- *Not building a bridge in the existing NC 12 easement would be beneficial to the management objectives of the Pea Island National Wildlife Refuge and, from that perspective, the Bridge on New Location Alternative would have lower natural resource impacts than the Bridge within Existing NC 12 Easement Alternative within the Refuge.*
- *Section 4(f) of the US Department of Transportation (USDOT) Act of 1966, as amended (49 United States Code [USC] 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:*
  - *There is no feasible and prudent avoidance alternative, as defined in 23 CFR 774.17, to the use of land from the property.*
  - *The action includes all possible planning, as defined in 23 CFR 774.17, to minimize harm to the property resulting from such use.*

*If analysis concludes that there is no feasible and prudent avoidance alternative, as is the case with the Phase IIb project, then USDOT may approve only the alternative that causes the least overall harm in light of the statute's preservation purpose.*

*Refuge officials indicated that a Bridge on New Location Alternative would have the least harm to the Refuge.*

*Retaining as much of the existing infrastructure and easements as possible was not a factor in the decision to no longer pursue the Bridge within Existing NC 12 Easement Alternative. The Bridge within Existing NC 12 Easement Alternative would not have retained the existing NC 12 infrastructure between the Refuge and its terminus in Rodanthe. Since this alternative would involve replacing the at-grade NC 12 with a bridge, keeping NC12 in the existing easement would not benefit Refuge access. The Bridge on New Location Alternative, which does the least overall harm to the Refuge, will retain and maintain NC 12 from the bridge terminus to the refuge line to provide access to homes and businesses in Rodanthe. NCDOT will maintain this access to private property until, because of shoreline change, it is no longer reasonable and feasible to do so.*

*What Changed. The community and natural resource impacts described for the Bridge within Existing NC 12 Easement Alternative were recognized in the 2013 EA. What has changed is NCDOT worked with the state/federal resource and permitting agencies to minimize and mitigate the natural resource impacts associated with the Bridge on New Location Alternative such that these agencies agreed that a Bridge on New Location Alternative was preferred to the Bridge within Existing NC 12 Easement Alternative.*

*Why the Bridge on New Location Alternative was Moved Closer to the Shore/Why the Alignment Farther from the Shore will Not Work. NCDOT is required to consult with the US Secretary of Commerce under the Magnuson-Stevens Fishery Conservation and Management Act on all actions or proposed actions authorized, funded, or undertaken that might adversely affect essential fish habitat (EFH). To meet the requirements of this act, NCDOT works with the NMFS on the identification of EFH in the project area. All of Pamlico Sound in the project area is considered EFH. SAV, however, is identified as a specific Habitat of Particular Concern (HAPC) of EFH. Denser SAV offers more cover and food resources compared to patchy SAV for the same area. SAV is important spawning, breeding, feeding, and refuge habitat for a variety of fish and other aquatic wildlife. In addition to providing nursery functions, SAV provides oxygen, absorbs wave energy, and has the ability to uptake nutrients and export carbon, nitrogen, and phosphorous to coastal food webs. No conservation groups were involved in the decision to place the Bridge on New Location Alternative closer to the Pamlico Sound shoreline.*

*At the request of the state/federal resource and permitting agencies involved in this project, NCDOT surveyed the project area for SAV and found that dense SAV beds were located within the 2013 bridge alignment. SAV beds exist but are much sparser closer to the Hatteras Island shoreline; therefore, the bridge was moved so as to place the Bridge on New Location Alternative outside of the denser beds to minimize impacts to this high quality habitat.*



*The presence and density of SAV can vary between years and within a year, and some species are more prevalent during cooler (i.e., eel grass) or warmer water temperatures. The SAV surveys conducted by NCDOT for the project have occurred in the summer or early fall when overall SAV coverage is generally the greatest. However, suitable conditions for SAV also are highly variable from location to location. Currents and wave action can affect substrate type, turbidity, light, and water quality, all of which are important factors affecting SAV presence and distribution. In the project area, conditions are less suitable for the presence of dense SAV beds along the 2014B alignment than the 2013 alignment as evidenced by survey results.*

*Refuge Involvement in Project Length.* *The Phase IIb project terminates 1.9 miles into the Refuge because NC 12 is threatened by shoreline erosion for most of the distance as shown in Figure D-1a and D-1b in Appendix D of the Revised Phase IIb EA. The same area also is geologically susceptible to breaching as shown in Figure 3 of the Revised Phase IIb EA. The 2014 temporary nourishment program and the associated sandbags implemented to help keep NC 12 open until a long-term solution can be implemented extends approximately 1.5 miles into the Refuge. The length of Phase IIb is based solely on the threat of shoreline erosion and the potential for breaches in the project area. The length of the Phase IIb project area established by NCDOT is not related to any desire on the part of the Refuge to remove NC 12 from the Refuge.*

*More Economical Solution.* *Regarding the potential for a more economical solution, see the responses to comments under Section C.1.3, "Other Alternatives Preferred by Commenters."*

*Potential Traffic Congestion.* *The Selected Alternative will have two lanes, like existing NC 12, with 8-foot shoulders on the bridge. Thus, there is no change in the ability of NC 12 to carry traffic. A peak traffic analysis for forecast future traffic through the curve where the Selected Alternative connects to existing NC 12 in Rodanthe found traffic congestion during peak travel periods would not occur.*

*Buxton Hot Spot.* *Regarding the Buxton Hot Spot, NCDOT's feasibility study for NC 12 improvements from Buxton to Avon discusses both short-term and long-term approaches to protecting NC 12 from overwash in that area. One Bridge on New Location Alternative is considered. None of the alternatives considered result in loss access to the Cape Hatteras Lighthouse or any other property. The report makes no recommendations to dismiss or implement any of the alternatives considered. The NC 12 feasibility study for Avon to Buxton can be viewed at:  
[https://www.ncdot.gov/projects/nc12south/download/R-4070B\\_feasibility\\_study.pdf](https://www.ncdot.gov/projects/nc12south/download/R-4070B_feasibility_study.pdf).*

*Light Pollution.* *The bridge will not be lit at night. Headlights will be blocked in part by the 36-inch concrete parapet that is a part of the bridge rail. The parapet height was selected to block headlights as a part of mitigating impacts to sea turtles.*

*Bridge Run-Off and Noise.* Bridge runoff is discussed below in Section C.1.6.1, “Water Quality.” Noise is discussed below in Section C.1.5.1, “Visual and Noise Impact.”

### **C.1.3 Other Alternatives Preferred by Commenters**

#### **C.1.3.1 Bridge within Existing NC 12 Easement**

Names	Reasons
1. Bob And Chris Rowland	I suggest that if you agree with those who believe that the oceans will rise rapidly and swallow the Outer Banks and its bridges, then make the wiser and cheaper bridge over the existing road. Tell them it is because of their predictions about the rapidly approaching sea rise that you are rejected the bridge in the sound and you don't want to be part of a project that may end up being another "Bridge to Nowhere" that is seen to this day in the Pea Island Refuge.
2. Keith Orr	I think that either the elevated highway or the beach nourishment program should be the primary option. Either of these would cause much less harm, both to the sound environment and the area property owners.
3. Jerry Nordskog	If you justify a bridge because it is less susceptible to "ocean forces", what about Rodanthe? Are we going to elevate it later? Just elevate the road and let the protesters live with what happens later. At least with the bridge the other communities on NC 12 will have outside access without a ferry system. I like the elevated road idea. If done properly I think it should last many years. Bridge is ok and would provide a nice view of the sound but not allow off ramps.
4. Guy & Sandy Finn (June 14, 2016); Morris Neuman and Jer Mehta	The road should be elevated through the Rodanthe/S-turn “Hot spot” in the existing road way and built to 25-year standard like the “New inlet” bridge, reducing costs. The island is too dynamic to support 50-year planning. The route at the North end of NC 12 could have a “Jug Handle shape” immediately north of Mirlo Beach to appease the SELC, providing them with the anchor for their 17-mile bridge and minimizing the effect on Northern Rodanthe.
5. Rick Drumm	Why can't the new bridge just shadow the current road; building an elevated bridge over top the old road – same footprint – less environmental concerns – and probably a lot less expensive? I read that this was the preferred plan but was “scrapped” due to exposure to the ocean. Are not most coastal bridges exposed to the ocean in some way? Oregon Inlet bridge for example? It's just not clear to me and many of the residents and businesses most affected by this proposal why the

Names	Reasons
	causeway or elevated bridge over the existing NC 12 is not a feasible more realistic, less impactful, and less expensive means of providing safe access to the Hatteras Island.
6. Rick Jones	The 2014 Bridge on New Location (Preferred) terminates at the southern end well into the community of Rodanthe, thus resulting in local property owner concerns with the view from sound front lots to the west with the proposed bridge. The original proposal of the Bridge within existing NC 12 easement extended into the community along the current easement. Could the preferred bridge revised to return to the current easement just within the refuge boundary and continue as a bridge within the current easement? This would alleviate many of the property owner concerns.
7. James Kelley	I'm writing to express my opposition to NC DOT's "Jug Handle" solution on NC 12 in Rodanthe, also known as Bonner Bridge Phase 2. Elevating NC 12 north of Rodanthe is far more cost effective solution to flooding on NC 12 in the Pea Island NWR. Secondly it will also be less disruptive to the residents, homeowner, businesses and overall nature of Rodanthe, NC.
8. John W. Conway	<p>If you must build an elevated roadway then build it in the existing highway ROW. An elevated roadway in this location would be much less expensive to build and maintain. It certainly would have much less impact on the environment. We're not locals, however we've been visiting for nearly thirty years in spring and summer. A Mirlo beach bypass sure seems like an expensive endeavor compared with just elevating the road on pilings for a mile or two.</p> <p>In conclusion, I strenuously oppose the proposed Rodanthe Bridge and respectfully request that a more viable alternative that reduces environmental, economic, recreational, and aesthetic impacts be chosen.</p>
9. Michael and Beth Dzaman	An elevated roadway seems totally unnecessary. Maintenance of the existing road has got to be the least expensive alternative. However, if you must build an elevated roadway then build it in the existing highway ROW. An elevated roadway in the existing ROW would be much less expensive to build and maintain. It certainly would have much less impact on the environment. It certainly would be less of an eyesore/encumbrance to residents and visitors in northern Rodanthe. The existing homes along the ROW are already exposed to traffic and noise, elevating the roadway will have

Names	Reasons
	only a marginal effect on the value of these properties. It could be designed in such a way as to allow local traffic access in the same ROW under the bridge. Given these reasonable alternatives it makes absolutely no sense at all to build an elevated roadway in the sound unnecessarily destroying a very special place for recreation.
10. Anne Picher and Jean Pierre Picher	<p>We are long term vacationers to the Rodanthe area, 12 weeks per year in the spring and fall and are having great difficulty in understanding the building of the proposed "jug handle" bridge in the Pamlico Sound...i.e. the cost impact, the environmental impact and the future economic impact.</p> <p>Why would you not simply build an elevated highway where the existing Highway 12 runs now....that would cause the least impact and provide a reliable highway for the local residents?</p>
11. Thomas Hollowell	Any land owner in the affected area will have their property value significantly reduced, the environmental impacts will be devastating, and obviously the solution to the problem (elevate the road within the existing ROW over the washout prone areas) will have been scuttled.
12. Kate Mercer	I know you want to build this bridge because there is a place where it floods a little, but you guys put up that tiny bridge so it wouldn't flood as much and its doing fine.

***Response:** As stated in Section 3.3 of the 2013 Phase IIb EA, the Bridge within Existing NC 12 Easement Alternative was preferred at that time “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.” In their comments on the 2013 Phase IIb EA, environmental resource and regulatory agencies indicated a willingness to agree to a Bridge on New Location Alternative, although concerns with the presence of the 2013 Bridge on New Location Alternative over dense SAV beds were expressed by NMFS. NCDOT, recognizing that the Bridge with Existing NC 12 Easement Alternative would have greater community impacts than a bridge in the sound outside the community and recognizing that either alternative would affect water-related recreation, decided to pursue addressing the concerns expressed by NMFS with the Bridge on New Location Alternative and change its Preferred (now Selected) Alternative. As described in the response in Section C.1.2, Refuge officials indicated that a Bridge on New Location Alternative would have the least harm to the Refuge per Section 4(f) of the Department of Transportation Act of 1966 as amended.*

***Cost Savings.** As stated in Table 1 of the revised Phase IIb EA, the Bridge within Existing NC 12 Easement Alternative would cost \$162.8 to \$187.4 million, \$16.4 to 10.9*

*million less the 2014B Bridge on New Location Alternative. Although a Bridge within Existing NC 12 Easement would ultimately be exposed to daily wave action, while a Bridge on New Location Alternative would not, that difference was not a factor in the selection of the Preferred (now Selected) Alternative.*

*Sea Level Rise. Both bridge alternatives begin and end in the same general location. As such, they would be equally affected by sea level rise. However, the termini of both bridge alternatives are behind the forecast 2060 high-erosion shoreline, which takes into consideration sea level rise, and thus either bridge would continue to serve the remaining development. As indicated in Section 4.6.5 of the 2008 FEIS, worst-case sea level rise scenarios do suggest substantial island disintegration. If sea level rise were to be so great that there is substantial disintegration of Hatteras Island, then either bridge alternative could become a “bridge to nowhere” because there would no longer be any place to go.*

*Shorter Planning Horizon than 2060. Building a Bridge within Existing NC 12 Easement Alternative assuming a 2041 shoreline (25 years from now) instead of 2060 would shorten the Bridge with Existing NC 12 Easement by only a small amount because NC 12 roughly parallels the shoreline. Extending such a bridge at a later date would be disruptive to the community. The original bridge over the Pea Island breach (new inlet) and the new interim bridge are designed only for the short-term. While the new interim bridge could last 25-years, its low elevation makes it susceptible to storm surge damage that could close it while repairs are made, making it an unacceptable approach for the long-term.*

*NCDOT recognizes that the Outer Banks is dynamic, which is a reason why long-term improvements are being made on NC 12 in phases. In addition, to ensure future NC 12 improvement decisions are made with the best information possible, NCDOT has since 2011 carried out an on-going coastal monitoring program on Hatteras Island from Oregon Inlet to Rodanthe. The data 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 are assembled in annual reports being used to determine when planning of future phases of the project should begin.*

*Less Community Impact. The Bridge within Existing NC 12 Easement Alternative would have a greater effect (not a lesser effect) on the Rodanthe community, including its residents and visitors, than the Bridge on New Location Alternative (any of the three alignments). As indicated in the response to the previous set of comments, with the Bridge within Existing NC 12 Easement Alternative, a 30-foot high bridge (deck elevation) would be in the immediate views of over 50 residential and business structures that line NC 12. Views from homes would be blocked at the second or third story levels. From the ground, the bridge would be a dominating presence in front of these homes and businesses. As shown in Figure 11 of the Revised Phase IIb EA, where the bridge is in the sound, the distance from the bridge to the soundside shoreline would range from 460*

to 2,350 feet. The bridge would not reach its full height until it is in the sound. The bridge would range from 12 to 19 feet high as it passes the two homes near the bridge, 20 and 90 feet away, respectively. Once it turns north from Rodanthe, the 2014B Bridge on New Location Alternative would be approximately 1,400 feet from the shoreline and the homes that line the shoreline. The Bridge within Existing NC 12 Easement would be 1,400 feet away or less from all of the homes in northern Rodanthe, and the homes along NC 12 would be 65 to 230 feet from the bridge deck. With the Bridge within Existing NC 12 Easement Alternative, access to private properties and side streets along the portion of NC 12 affected would be provided via one-way frontage roads, one on each side of the bridge piers, within the existing NC 12 easement. As the shoreline erodes, the Bridge within Existing NC 12 Alternative would first be on the beach and then in the ocean, interfering with water sports activities in the ocean.

Easement in Rodanthe/Pamlico Sound North of Rodanthe. An alternative that passes through Rodanthe in the existing easement and then turns west immediately north of Rodanthe to reach Pamlico Sound would further increase Rodanthe community impacts by placing the 30-foot high (deck elevation) bridge near the homes that are along the Refuge border and into their views of the Refuge. It also would require the use of additional Refuge lands and increase the impact to terrestrial natural resources.

Short Bridge. Regarding the suggestion that a “tiny” bridge in the place it floods, the section of NC 12 in the Rodanthe area threatened by shoreline erosion is 2 miles long. The same area also is geologically susceptible to breaching as shown in Figure 3 of the Revised Phase IIb EA.

Beach Nourishment. Reasons why beach nourishment is not a reasonable alternative are discussed below responding to several comments suggesting beach nourishment as an alternative.

**C.1.3.2 Beach Nourishment**

Names	Reasons
1. Hannah Byrd	All bridge options are undesirable. Is there a way to put the NC 12 easement back on the table? A long-term nourishment program would benefit the residents of northern Rodanthe, would be much less costly to tax payers, would have less of an impact on the environment, and is just the thing to do.
2. Ross Byrd	It seems that beach nourishment (\$25 million) has worked. There have been no more overwashes since. Why not continue beach nourishment? The jughandle [Preferred Alternative] is absurd by comparison. What can we do to change this?
3. Anita Luper	We need beach nourishment!
4. Keith Orr	I think that either the elevated highway or the beach nourishment program should be the primary option. Either of

Names	Reasons
	these would cause much less harm, both to the sound environment and the area property owners.
5. Shawn C. Brennan, Christopher H. Brennan, Michael Brennan and Patrick M. Brennan	Rather than abandon the families within the Rodanthe "S" curves area, NCDOT needs to implement additional measures that would protect this vulnerable area, Periodic beach nourishment would be a cost effective measure that can be implemented easily and has a proven track record in that area. Furthermore, NCDOT's own EA indicates that it has been established that beach nourishment would have no significant impact. Besides mitigating coastal erosion and protecting life and property through hurricane and storm damage reduction, beach nourishment projects can provide environmental, recreational, and aesthetic benefits. Nourishing and widening an eroding beach can protect threatened or endangered plants in the dune area; protect habitat behind dunes or next to beaches; create or restore habitat, lost through erosion, for sea turtles, shorebirds, and other beach organisms; and create new nesting areas for endangered sea turtles and spawning grounds for other species. Beach nourishment projects also can create and sustain wider beaches for recreational activities such as fishing and boating and protect infrastructure enjoyed by tourists. Healthy beaches not only are crucial to the nation's travel and tourism industry but also can help revitalize local economies by increasing property values, condominium rentals, and retail sales. Obviously, NCDOT is aware of the multiple benefits of beach nourishment as it has been implemented successfully in the past. However, the NCDOT's indifference to this preferred method of shore protection and environmental sustainability in the context of this project is just another example of failure to fulfill their mission to enhance the economy and vitality of North Carolina.
6. Wes Hutchinson (July 14, 2016)	The MBHOA opposes both bridge alternatives and favors beach nourishment as the long-term solution for protecting NC 12 in northern Rodanthe. A 2-mile bridge in either location defies common sense. However, these options are believed to be the most expedient politically and from a regulatory perspective. This seems nothing short of a tragedy of governance and a mockery of the Merger Process, which has been a laudable effort to create a consensus among many agencies with divergent missions. We implore NCDOT and the Merger Team to do what is best for the long term, for the citizens of Dare County, and the millions of visitors to Hatteras Island from all over the world.

Names	Reasons
	<p>The reasons for our position are summarized below. Over the past 5 years, we 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, Beth Smyre, Jerry Jennings, Warren Judge, and a number of local residents and retailers). In this public document, we prefer to not name individuals as information sources; however, we would be happy to provide further details about our sources, our analyses, and our organization upon request.</p> <p>Cost effectiveness and flexibility. The initial estimated cost of a Rodanthe Bridge (circa 2013) was approximately \$100 million; the next year the estimated cost had grown to \$200 million. We find it hard to believe that the cost of a bridge to be constructed in 2017 or 2018 is still \$200 million. Moreover, this cost is incurred immediately and protects only 2 miles of NC 12. It has no option value. Additionally, maintenance cost in the sound or beach/ocean will be very high. For the NLA, we wonder if the design specifications require standards sufficient to sustain inlet formation anywhere along the bridge that might change the water depth from 3 - 6 feet to 10 - 20 feet. Beach nourishment on the other hand, is less expensive and provides tremendous flexibility. It is a solution that can be applied quickly to anywhere on Hatteras Island where NC 12 might be damaged. From a purely financial perspective, it is very attractive. For example, a \$200 million "endowment" to support nourishment would \$8 million per year (at 4% return rate), which more than pays for the 3-year expected life of the recent emergency nourishment. Informal analyses of the emergency nourishment after 21 months (both our own and that of one of the coastal scientist named above) suggests that this level of nourishment will protect NC 12 for 5 to 10 years. If that proves true over the long run, nourishment is MUCH less expensive. Moreover, in this endowment calculation, the \$200 million would always be available in the future to help build a bridge if nourishment fails to be sustainable, or if there is an unanticipated natural disaster because the ongoing nourishment is being funded only by returns on the endowment. Other forms of present value analyses lead to similar conclusions. More generally, this type of real options approach to long term strategic planning is the</p>



Names	Reasons
	<p>dominant best practice in the private sector (at least for large corporations). We realize that things are different in the public sector, but still ... that is no excuse for financial mismanagement.</p> <p>The current process (i.e., Revised Environmental Assessment (EA) for Phase IIb of the Bonner Bridge Replacement Project) is out of date, unfair, and possibly illegal; a new, thorough, evidence-based analysis of the alternative solutions is needed. 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. In the words of one of the experts, it was based on "back of the envelope" calculations. Much more directly applicable data is now available from the emergency nourishment of this hot spot and from the Nags Head nourishment project. The opinions of the panel experts can now be informed by hard data. Informally, the opinion of virtually everyone on Hatteras Island, including people close to the decision makers, is that this process is a charade designed to make good on deals cut behind closed doors by NCDOT and SELC.</p> <p>Then NCDOT Secretary Tata promised that beach nourishment would be re-evaluated in light of new data. In a letter from Secretary Tata (April 10, 2013) that responded to our letter requesting further study based on data from nourishment, he repeated the arguments for the NCDOT preferred solution (which is no longer preferred) and then said, "Nevertheless, NCDOT will review the recent Nags Head beach nourishment project, data collected by the USA CE, and other relevant information to determine if further consideration of a long-term beach nourishment alternative is warranted." Governor McCrory's name is on the letterhead along with Tata's, and he was copied the letter. We expect the State of North Carolina to honor its explicit commitments.</p> <p>The environmental risks of beach nourishment have been greatly exaggerated. Evidently, the main objection to nourishment at the policy level of the USFWS in the temporary reduction in mole crab (or sand flea) availability after a nourishment project, and mole crabs are a primary food source</p>

Names	Reasons
	<p>for waterfowl. However, there are methods for mitigating this temporary disturbance, including some developed by USFWS. Inlet formation is a risk anywhere on the Outer Banks. However, this portion of Hatteras Island has not had a "natural" inlet for over 100 years. The inlet that was formed during Hurricane Irene (which was itself a 100-year storm) was "man-made" insofar as it was primarily caused by the clearing of Paul's Ditch and roadside drainage ditches (which focused an exceptional volume of water into the ditch) plus the sand bags installed on the east side on NC 12 (which allowed the water to break through in only one area). This assessment is now acknowledged by coastal science experts.</p>
<p>7. Wes Hutchinson (July 15, 2016)</p>	<p>Dear Governor McCrory and Secretary Tennyson: I am the vice president of the Mirlo Beach Home Owners Association (MBHOA) located in Rodanthe, NC. Yesterday, we submitted our comment on NCDOT preferred alternative for a long-term solution for protecting NC 12 in Rodanthe (see attached). Today, I am writing to remind you of the promise made by former NCDOT Secretary Anthony Tata (see attached letter dated April 10, 2013). For many years, our organization has advocated an evidenced-based approach to evaluating beach nourishment as the long-term solution. This was not possible in 2013, but it is possible now because of data available from the 2014 USACE emergency nourishment project in Rodanthe and the 2011 Nags Head beach nourishment project. Then Secretary Tata promised in 2013, "... NCDOT will review the recent Nags Head beach nourishment project, data collected by the USACE, and other relevant information to determine if further consideration of a long-term beach nourishment alternative is warranted." By all accounts both nourishment projects have been very successful. We believe that good science, good economics, and common sense will reveal that beach nourishment is a cost effective, flexible long-term solution that makes wasteful spending on a bridge unnecessary. If an unbiased, evidence-based analysis reveals that a bridge is better, so be it. At least our homes will be sacrificed to the ocean for the right reasons. Therefore, we request that you make good on Secretary Tata's promise, review the data now available, and make your analyses and conclusions available to the public. We also request access to that data so it can be independently reviewed by us and the coastal science experts with whom we consult. Thank you for your efforts on behalf of all of the stakeholders affected by the Rodanthe Bridge</p>

Names	Reasons
	decision.
8. Brad Payne	<p>[These comments are from an e-mail sent to Wes Hutchison. NCDOT was copied on the e-mail.]</p> <p>As previously stated, the problem is the deal cut with NCDOT and SELC for the Bonner Bridge. Although I have not recently reviewed "the deal", I believe that it pertains to "if they build a bridge, not they must build a bridge" and if they do this (the sound) is the option we will not oppose.</p> <p>That being said, and if my memory is correct, that would still leave nourishment open as an option. I think there are two very important names mentioned in your letter, McCrory and Tata, and that we should capitalize on their statements if we are going to have success. Tata is gone so it is his successor, but I don't think McCrory has much political capital left after LGBT.</p> <p>So, maybe there is an outside chance that we can impede the process long enough for a discussion. In today's world, I believe that our only option may be Social Media. If we have the right message out there it can work much more effectively and quickly than the legal system and is open to a much broader base. The only question is what message should we put out there?</p> <p>Personally, I don't subscribe to or even use Social Media on any level. But if the right message was put out I am well aware of its potential impacts and so is NCDOT, The Governor, and The SELC.</p>

**Response:** *Nourishment remains not a reasonable alternative because:*

- 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). Northern Rodanthe and the southern part of the Refuge are at high risk for a breach (see Figure 3 of the Revised Phase IIb EA). Geologically, the depth of sand to more stable ground containing organics (decayed plant material) in this area is greater than some other parts of Hatteras Island. Deeper sand can result in deeper scour on the island when a storm surge passes over the island, which can create a breach. The Pea Island breach area is, similarly, an area more susceptible to breaching. Portions of the project area susceptible to breaching, as well as "hot spots" where shoreline change has the most effect on NC 12, are shown in Figure 1 of the Revised Phase IIb EA. This*

information came from Dr. Stan Riggs, coastal geologist and Professor Emeritus at East Carolina University.

- *Carrying out a regular nourishment and dune-building (to keep overwash off the road) program would not ensure that a severe storm would not break down a part of the dune and overwash would cover NC 12 with sand or damage it. NCDOT and the Hatteras Island community have been fortunate that storms since the completion of the 2014 nourishment project have not breached the sand bag dunes. The use of sand bags for dunes was only allowed for this short-term emergency project. Sand bags would not be allowed in permanent dunes.*
- *NC 12 closures that result from storms create economic losses for homes and businesses serving tourists on all of Hatteras Island, as well as Ocracoke Island. Such closures also impact the permanent population in terms of access to work, shopping, doctors and the hospital, and off-island school activities. Thus, NCDOT decided to minimize the opportunity for this economic impact to occur by defining reasonable long-term solutions for parts of NC 12 threatened by shoreline erosion or breaching as ones where the corrected portion of NC 12 is unlikely to be susceptible to sand overwash or damage during storms. In the Rodanthe area, the Nourishment Alternative would leave NC 12 susceptible to sand overwash or damage during storms.*
- *Nourishment would not allow natural island processes to occur in the Refuge, and, based on the opinions of USFWS representatives, a long-term nourishment program is not likely to be found compatible with the Refuge's mission and purpose. Any nourishment program to protect NC 12 in Rodanthe also would affect Refuge beaches. The US Department of Interior in their comments on the 2013 Phase IIb EA noted regarding a Bridge on New Location Alternative that it would better allow for natural coastal processes to occur and would greatly minimize adverse effects to federally protected species. The beach in the project area has reduced in width, resulting in the loss of beach habitat, because the artificial dunes block sand overwash. With sand overwash, new beach is created as the original shoreline erodes. The positive benefits of allowing natural barrier island change are discussed in section 4.7.7 of the 2008 FEIS. As discussed in section 4.7.6.3 of the 2008 FEIS, a primary impact of nourishment is to benthic organisms, including the mole crab. Mole crabs are important and common inhabitants of the surf zone whose eggs are transported by shoreline currents that can reach adulthood and reproduce within the first year. Benthic organisms would be affected by both sand removal (off-shore borrow areas) and placement (surf zone). The effects would be temporary but are a concern since nourishment as assessed in the 2008 FEIS would occur every four years and recovery of abundance and diversity can take three months to three years, plus pre- and post- dredge species composition may display long-term differences. The FEIS indicates that the impact can be reduced by restricting nourishment*

*activities to the winter months and using sand that matches existing beach conditions.*

- *It 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. Even though erosion rates have decreased with the inclusion of 10 additional years of data, they remain high in the Rodanthe area compared to the rest of Hatteras Island. The FEIS indicated that the erosion rate in the northern Rodanthe area was an average of 11 feet per year. As of December 2015, the rate is now an average of 9 feet per year in the northern Rodanthe area (note that within this section, a stretch of approximately 1 mile remains at approximately 11 feet per year). The volume of sand required in a nourishment project may be less than originally estimated because of the reduced average erosion rate; however, the nourishment alternative's design would still need to consider the highest rates in the project area.*

*NCDCM calculates its oceanfront construction setback factors and establishes ocean erodible areas of environmental concern using long-term (approximately 50 years) average annual shoreline change rates. Their 2011 erosion rates (latest available) in the project area were estimated to be between 6 and 13.7 feet per year, with the most significant erosion, between 10 and 13.7 feet per year, was found at the southern end of the Refuge/northern Rodanthe.*

*The emergency nourishment project was designed by the USACE to last approximately three years and is on track to last between three and four years, depending on storm events. Any long-term impact of this project on the shoreline position in this area is unlikely.*

*The Nourishment Alternative developed by project coastal engineers that was assessed in the 2008 FEIS assumed nourishment would need to be repeated every four years. The experience with the 2014 nourishment program presented in the previous paragraph affirms that assumption. Associated dunes to keep sand off of NC 12 would need to be rebuilt every 12 years.*

- *The 2014 emergency nourishment project was done in response to a Governor-declared State of Emergency following Hurricane Sandy and subsequent nor'easters. In these situations, the appropriate agencies are able to allow nourishment as a one-time emergency response action, and therefore a permissible action. These agencies would not consider a 50-year beach nourishment program an emergency action.*
- *Nourishment is not less expensive than the Selected Alternative in the Phase IIb project area. The short-term nourishment project cost \$20.3 million. As indicated above, the emergency nourishment project was designed by the USACE to last approximately three years and is on track to last between three and four years,*

*depending on storm events. If it or a similar program were repeated every four years at the same cost, the cost of 50 years of nourishment would be approximately \$254 million.*

- *The Selected Alternative is estimated to cost \$179 to \$198 million. The cost of the Bridge on New Location Alternative listed in the 2013 Phase IIb EA was \$203.3 to \$236.3 million. A bridge in either the ocean or the sound would have foundations deep enough such that scour or inlet creation would not be a maintenance issue. The structure would have the same anti-corrosion features as the new Oregon Inlet bridge. The \$200 million "endowment" concept suggested by Mr. Hutchinson for investing the cost of the Selected Alternative and using the interest to fund a Nourishment Alternative is noted, but cost was not the only factor in the decision not to pursue nourishment.*
- *The Nourishment Alternative would require a suitable sand source over the project's estimated 50-year life. Both the USFWS and NCDOT have specific requirements on the characteristics of the sand that can be used for nourishment. Sand used for beach nourishment must be similar in quality and grain size to sand in the area being nourished. As said in Section 2.10.2.1 of the 2008 FEIS, the analysis of the Nourishment Alternative in that document relied on a report by Boss and Hoffman (2000) that suggested that the material available in Wimble Shoals was on the order of 55.9 million cubic yards. A detailed assessment of the compatibility of the borrow material with the native beach material was not conducted; however, the grain size analysis performed on sediment samples collected from the vibracores appeared to indicate that the material would be suitable for nourishment.*

*A more recent sediment analysis presented in the report titled "Offshore Sand Resource Investigation, North Carolina Outer Banks: Ocracoke Inlet to Oregon Inlet" by Hanna and Nickerson (2009) identifies two potential borrow areas in Wimble Shoals, referred to as Area 2 and Area 3. Total volume estimates for both areas ranged from 7.9 to 8.3 million cubic yards. Approximately 1.3 million cubic yards was dredged from a Wimble Shoals borrow area for the 2014 emergency project. This leaves approximately 6.6 to 7.0 million cubic yards available in the Wimble Shoals borrow areas based on the estimates made by Hanna and Nickerson. Thus, these more recent estimates indicate that there will not be sufficient material available to conduct a 50-year nourishment program from this source if the volume required at each replenishment interval were equal to the 2014 project.*

*Assuming that the estimated 6.6 to 7.0 million cubic yards of remaining sand is suitable for a beach nourishment option, then the remaining sand could potentially be used for a shorter 20-year nourishment program (based on the 1.3 million cubic yards used in the 2014 nourishment project). NCDOT does not consider this a reasonable alternative for its long-term project because of the other concerns with a nourishment alternative presented in this list. However, the implementation of the Selected*

*Alternative does not prohibit any other entity from pursuing a shorter-term beach nourishment program in this location.*

*The 2008 FEIS describes a Bridge within Existing NC 12 Easement and Beach Nourishment Alternative in Section 2.10.2.4 (called Phased Approach/Rodanthe Nourishment Alternative). The total required beach nourishment length was approximately 6,000 feet. Nourishment would extend north from Rodanthe approximately 1,500 feet into the Refuge. The estimated amount of sand needed for the Phased Approach/Rodanthe Nourishment Alternative was 19.6 million cubic yards over 50 years. Again, there would not be sufficient material available.*

*The assessment of Nourishment Alternative was unbiased and the conclusions related to its reasonableness as an alternative were evidenced based. The findings are summarized above and were presented in the 2008 FEIS and subsequent environmental documentation.*

*Reasons why the Bridge within Existing NC 12 Alternative is not being pursued, including the SELC settlement agreement and its relation to the selection of the Preferred Alternative, is discussed in Section C.1.2, “Concerns with the Change in the Preferred (now Selected) Alternative Decision and the Involvement of Environmentalists in the Change” The one commenter’s expression of interest in the use of social media to further pursue concerns with the Preferred (now Selected) Alternative is noted.*

**C.1.3.3 2013 Bridge on New Location Alternative**

Names	Reasons
1. John Zayankosky	My preference is to push the Bridge out further into Pamlico Sound as was first proposed and changed due to US Wildlife input. If NCDOT can change plans based on US Wildlife opinions it can change plans with input from the PEOPLE IMPACTED NOT JUST THE FISH IMPACTED or opinions from others. .

**Response:** *The commenter’s position is acknowledged. Both community and natural resource impacts were taken into consideration in the identification of the 2014B Bridge on New Location Alternative as the Preferred (now Selected Alternative). The 2014B Bridge on New Location Alternative was initiated by NCDOT based on comments by NMFS on the 2013 Phase IIb EA. The final location was developed based on input from multiple environmental resource and regulatory agencies.*

**C.1.3.4 Scaled Down Bridge within Existing Easement with Nourishment**

Names	Reasons
1. Guy and Sandy Finn (July 11th, 2016)	We feel that a much scaled down version of the elevated section coming into Rodanthe would be less expensive and with beach nourishment would be a viable option.

***Response:** A combination of a bridge within the existing NC 12 easement in the Refuge and nourishment in Rodanthe was assessed in the 2008 FEIS (then called the Phased Approach/Rodanthe Nourishment Alternative). It is described in Section 2.10.2.4 of the 2008 FEIS. This alternative was not selected as a detailed study alternative for Phase IIb for the same reasons the Nourishment Alternative was not assessed in detail for Phase IIb. See the response to comments in Section C.1.3.2, "Beach Nourishment." A scaled down bridge in terms of the bridge being lower than 25 feet in elevation has never been considered as a long-term solution because it risks a storm surge striking the bridge spans and knocking them off the bridge piers. In Rodanthe with the Bridge within Existing NC 12 Easement Alternative, a bridge 30 feet in elevation (deck) is needed so that local traffic using the two one-way access roads parallel to the bridge can pass from one side of the bridge to the other. Building a permanent structure that could be damaged by the storm surge is not permitted under coastal regulations implementing the North Carolina Coastal Management Act. Also, the storm surge could carry components of the bridge spans into the community damaging homes, businesses, and other property, and could injure or take the lives of people who chose not to evacuate Rodanthe.*

**C.1.3.5 Causeway/Revetment or Artificial Reefs**

Names	Reasons
1. Robert Brown:	Another solution to this problem is to prevent the breaching of these barrier islands in the first place. This can be achieved by building a roadway low enough that it can be overwashed and not breached. During flood conditions such as hurricanes and extreme north east storms, the road would be closed to traffic. After the storm, with a little maintenance, the roadway could be reopened. The key to achieving this is to construct a roadway not on the highest ground where it can be easily undermined but at approximately elevation 5 using the cross sections detailed on the attached original comments. This design has revetments and pavement layers that allow drainage but are extremely resistant to breaching. This roadway section would need to be constructed over long distances at this elevation in order to allow vast amounts of water to cross from one side to the other without creating excess flow in a single area. This design allows total access to both the Atlantic Ocean and the



Names	Reasons
	<p>Pamlico Sound. This design maintains the North Carolina border with the Atlantic Ocean and also the barrier islands preventing them from being breached.</p> <p>The State of North Carolina should have the Sovereign Right to defend the state's borders at whatever effort it deems necessary. Including the Border with the Atlantic Ocean. What is the cost of a surrender to the sea?</p> <ul style="list-style-type: none"> <li>• No highway access to Hatteras.</li> <li>• What effect will daily tidal changes have on the Pamlico and Albemarle Sounds?</li> <li>• What will an Increase in salinity have on future water supply?</li> <li>• What effect will daily tidal flow have on all forms of inland plant life?</li> <li>• What effect will uncontrolled tidal flow have on inland storm flooding.</li> </ul>
<p>2. Shawn C. Brennan, Christopher H. Brennan, Michael Brennan and Patrick M. Brennan :</p>	<p>Another measure that NCDOT recognizes is the utilization of artificial reefs to reduce wave energy. The NCDOT is aware that artificial reef structures can be utilized as submerged breakwaters, providing wave attenuation for shoreline erosion control plus habitat enhancement. The EA is silent on the utilization of artificial reefs (or other shoreline protection measures for that matter), with the disturbing exception being the focus on protecting seagrass and EFH habitats rather than the economic vitality of the local community. It is imperative that NCDOT consider the use of this technology at the Rodanthe "S" curves "hotspot" in conjunction with other shoreline protection measures current being utilized in other areas of this project. Demolished sections of the existing Bonner Bridge, engineered and strategically placed along the coastline in this area could provide a cost-effective solution to protecting the delicate ecosystem just south of the Refuge and provides a much-needed aid to a community that will be cut-off from future storm assistance</p>

*Response: The alternatives the commenters propose are not permitted under North Carolina law. The North Carolina Coastal Area Management Act states that: "No person shall construct a permanent erosion control structure in an ocean shoreline. The Commission shall not permit the construction of a temporary erosion control structure that consists of anything other than sandbags in an ocean shoreline." An erosion control*

structure is defined as a breakwater, bulkhead, groin, jetty, revetment, seawall, or any similar structure. The State of North Carolina does have an artificial reef program, but they are developed for fish habitat and are in the ocean far enough offshore that they do not effect coastal erosion. Demolished sections of the Bonner Bridge will be used as a part of an artificial reef, with material to be placed at existing reef sites offshore.

Mr. Brown’s proposal involves a 325-foot wide cross section that includes four traffic lanes separated by a 40-foot median and two 25-foot wide bicycle paths separated from the travel lanes by 75-foot buffers. Both the ocean and soundside shorelines would be armored with a revetment, which in addition to not being permitted under North Carolina law is not compatible with the goals of the Refuge. The existing NC 12 easement is 100 feet wide. In Rodanthe, a 325-foot cross section would displace numerous homes and businesses. In the Refuge, the additional easement required is not likely to be found compatible with the Refuge. The detailed study alternatives for this project provide an adequate number of travel lanes (2) based on the forecasted level of traffic, as well as acceptable clearance for bicycles all within a 40-foot footprint. Mr. Brown indicates that his cross section could be adjusted to meet available land requirements. A cross section consisting of two lanes and shoulders would fit within the existing NC 12 easement but still would not be permitted by North Carolina law and the Refuge would have concerns about the natural resource impact.

In addition, the rock revetments would have to be designed for breaking ocean waves, requiring large and expensive armor stone. While erosion of the shoreline would end once the shoreline reaches the armor stone, there would be no beach left in front of the revetment. When natural coastal processes are allowed to occur without interference by tall man-made dunes or a revetment, ocean overwash continually resupplies the beach. Shoreline erosion continues, but the beach is maintained. The loss of the beach with a revetment would impact the protected species that use the ocean beach for nesting or foraging (diminishing the quality of the Refuge) and also would impact recreational opportunities now on the beach in Rodanthe and the southern part of the Refuge.

The commenter’s position on North Carolina’s borders is acknowledged. However, one goal of the North Carolina Coastal Area Management Act is “to provide a management system capable of preserving and managing the **natural** ecological conditions of the estuarine system, the barrier dune system, and the beaches, so as to safeguard and perpetuate their **natural** productivity and their biological, economic and esthetic values.” The natural evolution of the coastal system rather than actions to maintain the existing characteristics of this system is preferred by the State of North Carolina.

**C.1.3.6 Repair the Road when Needed**

Names	Reasons
1. J.B. Hutt	It would seem to me that the cost of a bridge or causeway would far exceed the cost of rebuilding a section of road after a major

Names	Reasons
	<p>storm. How many times has the road been repaired over how many years and what has been the average cost of these repairs? How many more repairs could be made before the cost of a causeway becomes economical? For example, the temporary bridge cost over \$10M from what I understand. If we had filled the breach with sand and repaved the road, what would that have cost by comparison? Who assumed that the breach would be permanent as we now see that it has filled in? And, there was false start in re-working the temporary bridge. What did that cost? By comparison, the breach north of Hatteras Village was filled and repaved after Isabel. What was that cost? (I assume that there are other issues (inter-agency, future forecasts for hurricanes that travel up the sound, convenience to the public). But, if you had a limited budget and budget options, what would be the least cost option and its impact on people and the environment (in simple terms), and a similar analysis for each more expensive option. What other concepts have been explored, (e.g., pre-positioned sand piles, pre-planned agreements for access to public lands)? Notice the pre-positioned equipment on the road south of the Oregon Inlet bridge. If a breach were to occur at a location away from the Rodanthe causeway, what would be done to restore access?</p> <p>I wonder if a causeway from Hatteras to Ocracoke rather than a causeway into Rodanthe would be more widely appreciated by the local communities on Hatteras and Ocracoke islands. It would have a considerable economic impact. The breaches after storms and hurricanes are an inconvenience associated with the islands' economy and undoubtedly have a significant environmental impact to plants and animals. From a local economic perspective, the problem with breaches is the recovery time. Are we spending our money wisely?</p>
2. Mark Viser	<p>We're not locals, but we've been visiting for over thirty years in spring and fall. A Mirlo beach bypass sure seems like a diamond encrusted, gold plated solution compared with just elevating the road on pilings for a mile or two. How often has that area actually been closed for more than a day or two, other than after Hurricane Irene? \$200,000,000.00 sure would cover a lot of overtime and a few new dozers and a whole lot of army surplus mobile temporary bridges.</p>

Names	Reasons
<p>3. Kel Shipman Jim Meyer</p>	<p>The Outer Banks are unique in that the islands are not anchored to offshore coral reefs like some other barrier islands and as a consequence they often suffer significant beach erosion during major storms. This is a fact.</p> <p>Not even one engineering firm, government agency or environmental expert has even once predicted the exact location of a major breach in the island chain. OBX is a different place calling for different thinking. Solutions on this island have perhaps a 30 year window of success at best and more likely significantly less. I write this letter as a small reminder that sometimes, the “do nothing” scenario is the best course of action. In other words, build the temporary bridge at the cut and keep repairing the weak parts of the road as they happen until completely forced to take more serious action. As I understand it, this was the first plan of the DOT until the Environmental groups held the Bonner Bridge repairs hostage on this very point. Their goal is to remove all roads from Pea Island and if we want to appease them, then a ferry would be a much better solution.</p> <p>I believe that the “Do Nothing” scenario, in this case is the best solution for all (except perhaps the environmentalist who will not be happy until nobody has access to PEA ISLAND).</p> <p>If the environmental engineers are correct and beach erosion by 2060 is where they say it will be, then none of this matters anyhow because ½ of the island at the entrance to Rodanthe will be gone in 44 years. I say let nature give them what they want, at the pace that nature wants to give it them, but not sooner!!</p>
<p>4. Michael and Beth Dzaman</p>	<p>The bridge looks stupid and is stupid. We have 100+ miles of fragile coastline on the Outer Banks, it makes no sense whatsoever to put a jug handle out into the Sound to maintain the road for a couple of miles. Hurricanes and big storms will continue to hamper businesses on the Outer Banks from time to time. It's part of life. This bridge won't solve that problem. Yes, you will have to replenish the beach and rebuild the road from time to time but on a net present value basis even DOT's conservative estimates show those costs to be far less than the hundreds of millions of dollars of tax payer money that will be spent to build this ridiculous bridge. In the thirty years that we have been vacationing in the Outer Banks this road has only had to be rebuilt a handful of times. The bridge won't eliminate the</p>

Names	Reasons
	state's need to continually remove blown sand from long sections of Highway12 north of Rodanthe.
5. Carl and Polly Moffatt	First of all, we don't support any of the "proposed alternatives". All of this is quite a reaction to 2 breaches at Mirlo in recent years—Irene and Sandy. The cost of the proposed alternative is staggering - a heck a lot of beach replenishment could be done for the total costs of any of these alternatives. This appears to be major surgery when a band-aid would work. Why not move the road to west, closer to the existing power lines? Why is any bridge being proposed for 2 miles long for a hot spot of maybe a couple of hundred feet? Why is this knee jerk reaction being proposed based on what "could" happen to the coastline in the future? I've been coming to the RWS area for over 40 years; I'm quite aware of coastal changes that have happened during that time – none rise to the level of what's being proposed.
6. Chris Smashe	I would like to put my name down as opposition to the phase 2 Bonner bridge project. There are many other options that would not cost this much money and have less of an impact on the area. Let nature take its course.

**Response:**

*Cost of Interim Maintenance and Repairs. From 2011 to 2016, NCDOT spent \$29.7 million repairing NC 12 in the Phase IIb project area and an additional \$1.2 million removing sand from NC 12. The \$29.7 million includes \$20.3 million in 2014 for nourishing the beach in the Phase IIb project area to help keep daily wave action from undermining the sandbag dune first built in 2009 and rebuilt several times prior to 2014. Without the sandbag dune, waves would overwash NC 12 constantly in the Refuge border area. The emergency nourishment project was designed by the USACE to last approximately three years and is on track to last between three and four years, depending on storm events. As described above in the response to comments on nourishment in Section C.1.3.2, to maintain the beach and dune line over 50 years would cost as much or more than the Selected Alternative and throughout that time NC 12 would continue to be susceptible to damage by storms that could breach the dune. In the Phase IIb project area, maintenance is no longer a reasonable approach.*

*From 2011 to 2016, NC DOT spent an additional \$9.7 million dollars to repair storm-related damage to NC 12 between the Bonner Bridge and Rodanthe, as well as \$1.3 million removing sand from NC 12.*

*In 2011 when NC 12 was breached in two locations by Hurricane Irene, NCDOT spent \$1.9 million to operate emergency ferry service to Hatteras Island from September 15 to*

October 10. In 2012 when NC 12 was severely damaged and closed just north of Rodanthe by Hurricane Sandy, NCDOT spent \$1.8 million to operate emergency ferry service from October 30 to December 19. Closure of NC 12 for even a day or two is not desirable for those who live on Hatteras Island and rely on NC 12 to provide access for tourists that are the largest drivers of its economy, access to the hospital and other medical facilities, access to jobs, and access to other off-island activities.

The total of the expenditures listed above is \$45.6 million over 6 years. The primary events necessitating repairs to NC 12 between Rodanthe and Oregon Inlet were Hurricane Irene in 2011 and Hurricane Sandy in 2012. Other weather and tidal events necessitated repairs in 2013 and 2014 and sand removal every year from 2012 to 2016.

Appropriateness of On-going Interim Repairs in the Phase IIb Project Area. Interim repairs (do nothing) is not an acceptable option. Interim repairs also are costly, must be done on a regular basis, and do not result in a reliable road. In the Phase IIb project area, the time to take action to implement a long-term solution has come. For NC 12 between Oregon Inlet and Rodanthe since 2011, NCDOT has carried out an on-going coastal monitoring program on Hatteras Island from Oregon Inlet to Rodanthe. The data 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 are assembled in annual reports being used to determine when planning of future phases of the project should begin. The results to date have indicated the continued need for a long-term project in the Rodanthe area, because of the immediate susceptibility of NC 12 to shoreline erosion, the condition of the dune system, and the width of the island.

Since 2002, planning and environmental studies for the Bonner Bridge Replacement Project (B-2500) have focused long-term approaches to maintaining a reliable NC 12 from the north side of Oregon Inlet to Rodanthe. The Selected Alternative will not eliminate NCDOT's need to continually remove blown sand from long sections of NC 12 north of Rodanthe, but it does address the need in this particular part of NC 12, the location where at this time, the need is the greatest.

Move the Road West for a Short Distance. The "hot spot" is not a couple of hundred feet long as stated by the commenter. It is two miles long. In Rodanthe, moving the road west has not been considered because the land west of NC 12 in Rodanthe is fully developed. To move the road west in small increments would result in home and/or business displacements each time the road is moved. By 2060, NCDOT would have purchased every home or business west of NC 12 to a point 230 feet west of the forecast 2060 high erosion shoreline, roughly 40 structures. To move NC 12 back behind the 2060 shoreline in a single project also would displace homes and place other homes now deep in Rodanthe adjacent to NC 12. Also, based on past coordination with the Refuge, it is unlikely that under current federal law protecting national wildlife refuges, that the

Refuge would allow NCDOT to move NC 12 west within the Refuge, either on an incremental basis or as a single project.

Future Refuge Access. Refuge access via NC 12 for visitors to the Refuge will continue to be a factor in planning studies for future phases. However, of the approximately 11.8 miles of NC 12 that passes through the Refuge, only approximately 2 miles is not threatened by current or future shoreline erosion or is in a potential breach area.

Bridging or Closing Breaches. NCDOT chose to bridge the Pea Island breach because it was wider and deeper than the Rodanthe breach. The risk to NC 12 is different in the Pea Island breach area. There, beach erosion is not a constant threat to NC 12, and the beach is forecast not to reach NC 12 for many years (as illustrated in Figure D-1d in the Revised Phase IIb EA). In the Pea Island breach area, breaching is the primary risk to NC 12, and although NCDOT was fortunate that weather conditions resulted in the closure of the Pea Island breach (rather than widening it or causing it to move south), certain storm conditions could reopen the breach. Thus, NCDOT will continue to assess the vulnerability of this area and pursue a long-term approach to addressing this risk as part of the NC 12 Transportation Management Plan. The new interim bridge is being built to minimize risk until a long-term solution can be selected and built. NCDOT plans to keep spare span members at a Division 1 maintenance yard so the bridge can be repaired quickly if it is damaged by a storm surge. If a breach were to occur elsewhere in the project area, the decision on whether to bridge or close would be made at the time it occurs. While it is impossible to predict exactly how a storm might affect NC 12 between Oregon Inlet and Rodanthe, NCDOT is taking proactive action to plan ahead so investments in long-term solutions are made as maintenance and repair become no longer viable in other sections of NC 12. As noted above, since 2011, NCDOT has carried out an on-going coastal monitoring program on Hatteras Island from Oregon Inlet to Rodanthe. The results are assembled in annual reports and are being used to determine when planning of future phases of the project should begin.

Cost of the Bridge within Existing NC 12 Easement Alternative. As described in the responses to comments in Section C.1.3.1, "Bridge within Existing NC 12 Easement," this alternative would cost \$162.8 to \$187.4 million, \$16.4 to 10.9 million less the 2014B Bridge on New Location Alternative. It also is not an inexpensive solution.

Bridge between Hatteras and Ocracoke Islands. There is no need to build a bridge between Hatteras and Ocracoke Islands. The island's privately held lands are essentially fully developed with little potential for growth. NCDOT plans to address current long ferry boarding lines that make day trips to Ocracoke Island difficult with a passenger ferry that will travel directly to Ocracoke Village.

**C.1.3.7 Move the Rodanthe Landing**

Names	Reasons
1. Christopher Hadley and Krystine Hadley	<p>Acceptable mitigation would include any of the following:</p> <ul style="list-style-type: none"> <li>• Implement beach nourishment in lieu of spending hundreds of millions of dollars on a bridge that the local population is adamantly opposed to (this would be the most desirable option)</li> <li>• Move the landing to an already owned state property either north or south of Pappy</li> <li>• Purchase our property at appraised value, under guidelines spelled out in [e-mail truncated at this point]</li> </ul>
2. David A. Hadley	<p>For these reasons we are adamantly opposed to the proposed bridge and we will be compelled to seek legal recourse if changes are not implemented. Acceptable mitigation would include any, or a combination of the following:</p> <ul style="list-style-type: none"> <li>• Implement beach nourishment in lieu of spending hundreds of millions of dollars on a bridge that local residents are adamantly opposed to (this would be the most desirable and cost effective option).</li> <li>• Move the landing for the bridge north of Pappy Lane (and preferably north of Mirlo Beach)</li> <li>• Provide cash compensation in consideration of the reduced property value and loss of projected rental income</li> </ul> <p>Purchase our property at market value and at a price point that would enable us to purchase a comparably equipped property in the area with a similar rental income history.</p>

**Response:** *There is no State-owned property either north or south of Pappy Lane. The area north of the Pappy Lane area is fully developed with housing from Pamlico Sound to NC 12. The only public land south of Pappy Lane is owned by Dare County and is occupied by the emergency ferry dock. The bridge terminus location in Rodanthe was selected because it passes south of the neighborhoods between NC 12 and Pamlico Sound, minimizing displacement of homes and businesses including avoiding the Liberty Gas Station/Island Convenience Store; avoids impact to the Rodanthe Historic District; and places the bridge terminus west of the 2060 high-erosion shoreline.*

*Regarding nourishment, see Section C.1.3.2, "Beach Nourishment." Regarding, the purchase sound-side property with bridge views, see Section C.1.5.3, "Economic Impact, Including Property Value."*



### C.1.4 General Impacts of the Preferred (now Selected) Alternative

Names	Reasons
1. Amy Jones and Tom Aschmoneit	What sort of long-term studies have been done on the effects of any bridge on all of Hatteras Island?
2. Linda M. Grande and Paul P. Cudone	I am writing this letter to let you know the concern my husband and I have about this bridge. We have been vacationing in the area for the past 20 years. We are concerned about the environmental impact this bridge will have in the shallow waters near shore. With the expense of this project we wonder if all other alternatives have been fully explored. This bridge will ruin a beautiful world class location for windsurfing and kiteboarding. With that the area will see a decrease in revenue as the tourists that participate in these sports will go elsewhere. Also, of concern is the impact on the homes, how they will be financially impacted from having their beautiful sound view eliminated. We want to go on record that we are opposed to this plan. Also, please include this email for future updates about the decisions.
3. Adam Jacono	I just wanted to show my support in suspending the large "jug handle" bridge development process in Rodanthe. My family visits the area every year and were disappointed the northern tip of the town will be compromised. Mirlo beach is a fantastic destination for water sports enthusiasts and I fear bridge development will eventually lead to restrictions to the area, making the location otherwise worthless for sound-side access, reducing value of those properties, and displacing economy-sustaining enthusiasts. That area in particular contains a fragile ecosystem which would be easily disturbed with heavy machining, dredging, and long term maintenance of the bridge.

***Response:** The continued reliability of NC 12 is an important component of NCDOT's decision on a Preferred and now Selected Alternative and the resulting benefits to all of Hatteras Island. The objective of the overall Bonner Bridge Replacement Project (B-2500) is a NC 12 from Oregon Inlet to Rodanthe that is not endangered by shoreline movement through 2060. NC 12 closures that result from storms create economic losses for homes and businesses serving tourists on all of Hatteras Island, as well as Ocracoke Island. Such closures impact the permanent population in terms of access to work, shopping, doctors and the hospital, and off-island school activities. As such, NCDOT decided that long-term solutions for parts of NC 12 threatened by shoreline erosion or breaching should not be ones where the corrected portion of NC 12 remains susceptible to sand overwash or damage during storms. In the Rodanthe area, not building a bridge*

would leave NC 12 susceptible to sand overwash or damage during storms. A bridge is needed to have the desired positive effect for all of Hatteras Island.

A broad range of alternatives were assessed, as described in Chapter 2 of the 2008 FEIS and Sections 2.1 and 2.3 of the Revised Phase IIb EA.

Other commenters expressed specific concerns about natural resource, recreation, visual, and economic impacts of the Preferred (now Selected) Alternative. These comments are addressed below in Section C.1.5, “Community Impacts of the Preferred (now Selected) Alternative” and in Section C.1.6, “Natural Resource Impacts of the Preferred (now Selected) Alternative.”

### **C.1.5 Community Impacts of the Preferred (now Selected) Alternative**

#### **C.1.5.1 Visual and Noise Impact**

<b>Names</b>	<b>Reasons</b>
1. Hannah Byrd	The Preferred Alternative will greatly impact our property on Pappy Lane – the current plan would not only block our view of the sound and use of sound, but would add unsightly views where it lets off right next to our house, as well as noise from traffic.
2. Kate Mercer	The reason I sent this letter is because our beach house is exactly in front of the wreck and would you like it if you sat on your top deck to look at the evening sunset and all you could see, hear, and smell were honking horns, pollution, and CARS!!!!!!!!!!!!!! Well I feel like I could cry because I am 10 yrs. old and I have been to that beach since I was born! And when my mom told me about this I was crying. That's why I wrote this because so many people who live down there are furious with YOU GUYS!
3. Bob And Chris Rowland	The view of the sunset will be lost to soundside homes.
4. Richard J. Ayella	I cannot recall an evening in all of my years at the Outer Banks that I have not awed over the wonderful sunsets this area provides. Every sunset is beautiful and everyone is different. Image now, the sunsets over a new bridge. I don't think words can say anymore.

**Response:** The visual, noise, and recreational (use of sound or use of ocean) impacts of both a bridge in Pamlico Sound near Rodanthe and a bridge within the existing NC 12 easement were addressed in the 2008 FEIS, the 2013 Phase IIb EA, and the Revised Phase IIb EA. In the 2008 FEIS, the Bridge on New Location Alternative was the Bridge South component of the Road North/Bridge South Alternative. The Bridge with Existing NC 12 Easement Alternative was part of the Phased Approach/Rodanthe Bridge Alternative.

*Visual, noise, and recreational impacts were taken into consideration when comparing the impacts of the detailed study alternatives and selecting the Preferred (now Selected) Alternative. This comparison also considered a broad range of other community, cultural resource, and natural resource impacts. The conclusion was that the 2014B Bridge on New Location Alternative was overall the least environmentally damaging, recognizing that for some types of impact other alternatives would have less impact. A bridge will result in the desired NC 12 reliability in the project area with the resulting benefits to all of Hatteras Island.*

*Both the Bridge on New Location Alternative and the Bridge within Existing NC 12 Easement Alternative would have visual impacts to homes in Rodanthe. As a part of the comparison of visual impact between the alternatives, photosimulations were prepared. They were presented in both the 2013 Phase IIb EA and the Revised Phase IIb EA. A corrected simulation for the 2014B Bridge on New Location Alternative is included as a part of Figure 6 in this ROD.*

*With a Bridge on New Location Alternative, noise levels at homes along Pappy Lane, would rise from noise levels that are unaffected by traffic to levels similar to those experienced by homes currently along existing NC 12 (a 11 to 13 dBA increase from an existing 49 dBA to future 60 to 62 dBA in the 1-hour period of peak traffic). However, the increase is not considered substantial enough to warrant consideration of mitigation, such as noise barriers, according to FHWA noise abatement criteria applied nationwide. Noise impacts of a bridge in near Rodanthe in Pamlico Sound were considered in Section 4.3.1.2 of the 2008 FEIS at three homes along the shoreline at Corbina Drive, on Cross of Honor Way, and at Chicamacomico Court. The increase in noise levels was found to be 3 to 5 dBA, a perceptible but not substantial amount. In the Rodanthe area, the alignment for a bridge in the sound assessed in the 2008 FEIS is in virtually the same location as the 2014B Bridge on New Location Alternative.*

*Regarding use of the sound, see the response to recreation impacts presented in the next section (Section C.1.5.2).*

**C.1.5.2 Recreation Impact**

Names	Reasons
1. Kate Mercer	My grandfather let's say has about 20 people who are his friends that like to windsurf, and they won't be able to if you do this. They won't because they can't actually get past the wreck. And do you know how many times my 3 cousins and my brother William R. Mercer plus me have gone on the front of my grandfather Robert's board. Also I have an English Golden Retriever that runs like the wind with his cousin Elsa in the sound. (that's their favorite spot) My brother Will and my dad go kayaking to the islands down the shore and won't be able to

Names	Reasons
	with that big bridge. Please I beg you to just fix the Oregon Inlet Bridge so that people can enjoy their vacation if they live near my beach house. The population of tourism will go down because people will not be relaxed where I am. That's a lot of people.
2. Bob And Chris Rowland	The wind is an important aspect of our home and many other homes in the affected area. Free access to the sound is necessary to enjoy windsurfing and kiting in the sound in the area enclosed in the bridge on the sound. This bridge will rule out usage for these sports.
3. Glenn Stevens	We have owned a sound-front home at the end of Wimble Shoals Drive for 20 years. This destroys the love of kite boarders and windsurfers forever. Hundreds of sports enthusiasts will go elsewhere. You have ruined paradise!
4. Amy Jones and Tom Aschmoneit	This area is one of 4 major wind sport activity areas on Hatteras. What will the rules be regarding the bridge and wind sports? How close will wind sports be allowed? Who will enforce it? Will it shut down the entire study area? Has there been research into the dollar amount loss and safety issues this will cause? What sort of studies on future restricted areas and safety have been done?
5. Keith Orr	The Preferred Alternative will ruin a premier sailing spot, it will destroy the beauty of the area, and it will greatly reduce the value of many area properties.
6. Guy and Sandy Finn (June 14, 2016); Morris Neuman and Jer Mehta	This area is one of 4 major wind sport activity areas on Hatteras north of Buxton; the Canadian Hole, Real Water Sports, Kitty Hawk and Northern Rodanthe. On any windy day you will find many wind sport enthusiasts using the area. These people are many of the visitors'' that rent the homes and pump money into the local economy. Real and Kitty Hawk use the area at the North end terminus of the bridge area for kite surfing lessons. The bridge would be a disaster for wind sports. The height of the bridge itself would change the wind currents and natural flow over the island. Since these people have been using this area since the 1980's many will continue to come, attempting to use the area. What will the rules be regarding the bridge and wind sports? How close will wind sports be allowed? Who will enforce it? Will it shut down the entire study area? Has there been research into the dollar amount loss and safety issues this will cause?
7. Daniel Barron	My main concern regarding the "jug-handle" bridge is that after it is in service the "tree - huggers" will make every effort to close

Names	Reasons
	<p>all of the roads and access to the area between Mirlo Beach and the southern end of the Herbert C. Bonner bridge. I would like some assurance from the government of North Carolina that every effort will be made to allow future access to the beaches of Pea Island. I know that the environmentalists want this area closed. They have stated this in their remarks while opposing the construction of the replacement of the Herbert C. Bonner bridge.</p>
<p>8. Paul Zoeckler</p>	<p>I am not a resident, but a concerned bi-annual visiting kiter at the Mirlo Beach development. This area will be severely impacted by the proposed jug handle bridge, completely eliminating kiting and windsurfing from its shores. Not only that, but the incredible views will be destroyed by this bridge. We all know that nature will eventually take out the whole breach area, but why not go with the other option of a straight bridge following the existing highway. It would be like Key West, connecting islands with bridges, allowing most things to remain as always. In time, many of the houses will be destroyed in the breach area, but views and water sports (a big money maker) will not be impacted for a very long time. In the end, the straight functioning bridge will remain without speeding up the demise of very special water sport haven.</p>
<p>9. Wes Hutchinson (July 14, 2016)</p>	<p>Bridges create a serious public safety hazard. Currently, both the sound and the ocean are aquatic playgrounds almost all year long. There are no hard structures in these waters. The NLA bridge puts hard structures into the sound; the EEA bridge is designed to be on the beach and in the active ocean with 10 years as erosion proceeds unchecked. In the sound, such structures are serious hazards for boaters when the weather is bad. Boats in distress will not simply be grounded in shallow water (which is what happens now), they face the real risk of being smashed against the pylons. The bridge will also become a hazard to kite boarders for similar reasons, and because kite boarding is an extreme sport and boarders will be strongly tempted to use the bridge for stunts. For the EEA bridge, most beach users will avoid the hard structures, but many children and adults, surfers, boogie boarders, and swimmers will find these structures attractive and entertaining once they are on the beach and in the water. 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 the formation of stable, deepened rip</p>

Names	Reasons
	<p>currents will create unexpected hazards. These outer banks beaches are unprotected by lifeguards, and we 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 injuries and fatalities will increase. If bridges were a cancer risk, the NLA and EEA would have been ruled out long ago.</p> <p>Bridges reduce public access to Hatteras Island. Although the stated mission of the USFWS for wildlife refuges emphasizes protecting natural habitats, especially endangered species, it does include providing benefits to the general public. NC 12 through the Pea Island Wildlife Refuge currently provides a tremendous public benefit. Anyone with a car can pull over, walk 100 yards and experience the pristine beauty of uncrowded (often empty) natural beaches. It is essentially free, like the Mall in Washington DC -- a national treasure. Bridges will take 2 out of 11 miles of access away from the general public.</p>
10. Richard J. Ayella	<p>There is no better place than the Rodanthe area to bring family and friends to enjoy passive water sports and related activities. Here the land meets the Ocean, Sound, and Beach within a short walking distance. Rodanthe provides a place to windsurf, kiteboard, fish, ride waves, surf, sunbathe, bird watch and do many other water and beach related activities.</p>
11. Carl and Polly Moffatt	<p>And to add insult to injury, I learned during the recent presentation that included in this preferred alternative, there will be one, I repeat--ONE, parking lot at the north end for people to use to enjoy the beach within the refuge. And that the parking lot at the south end of the temporary bridge, which was historically a place to park and walk over the dunes, will be closed once that bridge construction is completed. That means for all of the 14 miles included in the refuge, there will be only two places to legally park—at the Refuge visitor center (although I'm beginning to wonder why a visitor center is even needed since by ongoing action no visitors are wanted) and at the north end of the preferred bridge in Rodanthe. That absolutely defies logic—has any consideration been given to how this complies with ADA? What accommodations, if any, are being made for handicapped individuals who would like some access to the beach in the refuge, only to have 2 lots for</p>

Names	Reasons
	<p>parking available for all visitors? I saw no areas allowing for easy access for the disabled.</p> <p>I'm not a property owner in the Mirlo Beach area, but am a property owner/resident in Salvo. However, your current alternatives will forever change the Rodanthe area and will negatively impact both residents, business owners, and visitors. No amount of money can make up for losing a business your parents spent their lifetimes building. I see lots of kiteboarders enjoying the sound in that area – once the preferred bridge is built that will cease. Surely, there are other, less invasive, more cost effective ways to provide safe transit on Hwy 12 in the Rodanthe area. This whole project feels like a drip, drip, drip scenario – given how much of the beach is closed to visitors in the Cape Hatteras National Recreational (chuckle, chuckle) Seashore, now an additional 2 miles or so will be inaccessible in the refuge. At this rate, pretty soon we'll be able to look at the beach from our vehicle as we drive on a “no stopping allowed” road – look but don't touch. I urge you to consider other alternatives than what I saw proposed at the meeting.</p>
12. John W. Conway	<p>Please do not build this bridge it will ruin one of the greatest kayak, windsurf and kite boarding locations on the east coast. This location is special for its shallow water, and the possibility of riding winds from almost every possible wind direction. In addition there is a neighborhood of beautiful homes which can be rented by kite boarders and windsurfers for a world class vacation. If this bridge is built it will cut the value of the existing homes in northern Rodanthe in half or more.</p>

**Response:** *The recreational impacts of both a bridge in Pamlico Sound near Rodanthe and a bridge within the existing NC 12 easement were addressed in the 2008 FEIS, the 2013 Phase IIb EA, and the Revised Phase IIb EA. These impacts were taken into consideration when comparing the impacts of the detailed study alternatives and selecting the Preferred (now Selected) Alternative. Both alternatives affect water sports and other water activities.*

*The recreational impact with the Bridge on New Location Alternative and the Bridge within Existing NC 12 Easement Alternative is addressed in Section 4.2.4.2 of the Revised Phase IIb EA. The recreational impact of a bridge in Pamlico Sound near Rodanthe also was addressed in the 2008 FEIS in Section 4.5.4 as a part of the Road North/Bridge South Alternative. The Bridge South component of this alternative is in the Phase IIb area in the sound near Rodanthe. The recreational impact of a Bridge*

*within Existing NC 12 Easement Alternative also was addressed in the 2008 FEIS in Section 4.5.3.3 as part of the Phased Approach/Rodanthe Bridge Alternative. Regarding associated economic impacts, see the response to economic impact comments in the next set of comments and responses.*

*Watersport Safety with the Preferred (now Selected) Alternative. It is assumed those participating in water sports will follow standard safe practices, and no rules related to this particular location will be required. Some may choose to do their activity in other parts of Pamlico Sound. With the Selected Alternative, the primary watersport recreational impact is expected to be to kiteboarding. Windsurfers, kayakers, fishermen, and paddle boarders would be able to pass under the bridge if they choose. The bridge would have 17 feet of clearance and spans approximately 100 feet wide. With the bridge approximately 1,400 feet off shore except at its southern terminus, windsurfers, kayakers, fishermen, and paddle boarders could choose to enjoy their activity without necessarily approaching the bridge.*

*Watersport Safety with the Bridge within Existing NC 12 Easement Alternative. As indicated above in the response to comments from those indicating a preference for the Bridge within Existing NC 12 Easement Alternative (Section C.1.3.1), this alternative would have a greater effect on property owners than the Bridge on New Location Alternative (any of the three alignments). Further, this alternative also would affect water-related recreational activities. Section 4.2.4.2 of the Revised Phase IIb EA says: "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 Preferred 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 safely 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."*

*Access to the Refuge. It is recognized in the 2008 FEIS and subsequent EAs that the elevation of NC 12 within the Refuge or placing NC 12 on a bridge in Pamlico Sound would reduce the opportunity for easy access to the Refuge's beaches. Although the*



beaches would remain open for public use. This would primarily impact those who choose to pull off the side of the road and cross the dunes to the beach. It is expected that, like what is being done with the interim bridge project at Pea Island breach, parking lots bypassed will be replaced in other locations in the Refuge. The challenge is that of the approximately 11.8 miles of NC 12 that passes through the Refuge, only approximately 2 miles is not threatened by current or future shoreline erosion or is a potential breach area. This is the 2 miles immediately north of the Phase IIb terminus in the Refuge. In future phases, recreational benefits of maintaining road-access through the refuge will continue to be a factor in the development and assessment of alternatives and their evaluation. Next steps in the NC 12 improvement planning process include a planned reassessment of alternatives in the Pea Island breach (Phase IIa) area and continued shoreline monitoring and data gathering to aid in deciding when the planning of future NC 12 improvement phases should begin.

Refuge Parking. The new parking lot replaces an existing parking lot. The number of parking lots will not change. There are currently seven parking lots in the Refuge, at the south end of Bonner Bridge, at the Salt Flats Wildlife Trail, at the visitor center, at the boat ramp, and three serving beach access. They are shown in Figure 3-1b of the 2008 FEIS. The new parking lot will comply with the Americans with Disabilities Act. There will be no loss of access to any currently ADA compliant facilities in the Refuge.

Key West Bridges. Both the bridge in Pamlico Sound and bridge in the existing easement are similar in character to the bridges serving the Florida Keys, including Key West.

Economic Impacts. Responses to economic impact comments are presented in Section C.1.5.3, "Economic Impact, Including Property Value."

**C.1.5.3 Economic Impact, Including Property Value**

Names	Reasons
1. Hannah Byrd	How do you plan to compensate all the property owners that will lose property value, renters, and use of the sound? What is the compensation plan for the entirety of northern Rodanthe that either will be washed away with no more beach nourishment or dune or will have a major loss of property value with a bridge in our backyard? There must be a plan for this.
2. Ross Byrd	We are on Pappy Lane and will experience an extreme loss of property value, rental income, and personal enjoyment of a property we are deeply invested in. All for an alternative that makes very, very little sense to us.
3. Bob And Chris Rowland	We paid top dollar for a house on the sound and the bridge will destroy the value of our home. Will there be compensation? This house was part of our retirement nest egg and we also hoped we

Names	Reasons
	<p>would be able to pass it on to our children and grandchildren. In addition to these destructive observations there is the loss of the beautiful sunsets. We can't put a value on this aspect of our home. To us the sunsets are invaluable. The value of our home will definitely decrease because of the loss of this attribute.</p>
4. Glenn Stevens	<p>I will lose 50 percent of the property value of my home on the sound. No renters! No property values! Build your bridge but compensate me for my loss.</p>
5. Amy Jones and Tom Aschmoneit	<p>Loss of our environmental assets will cause a loss in tourism, thereby effecting the ability of many of us to survive in Rodanthe. There will be a loss of income revenue from visitors and rental houses, greatly effecting the cash flow into the area, causing a loss of businesses, reduction of jobs for the community, and ultimately, tax payer dollars. What studies have been done to quantify the monetary loss of tourism? Has there been research into the dollar amount loss the impact on wind sports will cause?</p>
6. Keith Orr	<p>The Preferred Alternative will ruin a premier sailing spot, it will destroy the beauty of the area, and it will greatly reduce the value of many area properties.</p>
7. Shawn C. Brennan, Christopher H. Brennan, Michael Brennan and Patrick M. Brennan	<p>While it appears that NCDOT has evaluated every imaginable impact to sea turtles, manatees, Atlantic sturgeon, and submerged aquatic vegetation, the EA is silent on what steps would be undertaken to protect the private citizens' homes and properties within the project's NC 12 bypassed area, between the Liberty Service Station and Wildlife Refuge Boundary from further shoreline erosion.</p> <p>From the NCDOT's own website, it states that NCDOT is serving their mission of "Connecting people, products and places safely and efficiently with customer focus, accountability and environmental sensitivity to enhance the economy and vitality of North Carolina.". There are dozens of property owners, citizens, families, in Mirlo Beach that have invested millions of dollars into the North Carolina real estate economy, paying hundreds of thousands of dollars in local taxes, and have helped generate millions of dollars in area business along Hatteras Island. All of these families have bought into the Hatteras Island area with the reasonable expectation that the only road to access our properties will be maintained and, by maintaining this road, NC-12, serving as a buffer to the ocean. Route 12 has been the anchor by which those of us who have</p>

Names	Reasons
	<p>invested heavily in the area have weathered numerous storms.</p> <p>Upon review of the NC 12 alternatives, it appears that the focus of this project, although cloaked as resiliency measures, is primarily intended at protecting the Pea Island Wildlife Refuge and submerged aquatic vegetation in Pamlico Sound. In what NCDOT indicates as "returning the land to the refuge", it is evident that NCDOT is abandoning any future maintenance plans of highway 12. This plan will be financially devastating to every single homeowner in the affected area. NCDOT further indicates that this plan has the support of federal and state environmental resource and regulatory agencies, including the U.S. Fish and Wildlife Service and other agencies that will issue permits for its construction, once again alluding to the true nature of this project's intent of focusing only on soft environmental targets that no one outside of any environmental special interest group would even think twice about.</p> <p>In capitulating to these special interest groups, NCDOT is failing to serve their mission of customer focus, accountability, and economic vitality. It is also evident that the NCDOT has failed to consider the financial impact this project will have on the local economy - economic revenue, tax generation, benefit-cost analysis of regular beach nourishment in the "hotspots" versus bridge construction and maintenance.</p> <p>From the EA, these ancillary environmental aspects are being heavily prioritized and punitively, at the expense of the local economy. Investment in the communities, economy and the protection of its vitality is being neglected, specifically, taxpayers are being indiscriminately made "winners" and "losers" with the willful neglect of many taxpaying communities - this does not serve the mission of the NCDOT and projects grave doubt as to the State's commitment towards this goal. The NCDOT, who oversee the infrastructure for the "economy and vitality of North Carolina" will significantly stifle potential investors within the State and Country into the lifeblood of NC communities, contrary to the objectives of their mission, by signaling to all that NC is increasingly hostile to business and negligent of its citizens.</p> <p>Of grave concern to families that reside within the bypassed</p>

Names	Reasons
	<p>area by the Rodanthe "S" curves are statements within the EA, specifically on page 4-15, wherein it states "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 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. "It is evident that the NCDOT has no plan for any further stabilization plans for this area once this project is completed, leaving these families vulnerable and defenseless against financial ruin. Is this customer focus and accountability?</p> <p>On behalf of the many families and local businesses slated for economic ruin as a result of this proposal, we implore the NCDOT to revisit their own mission of "Connecting people, products and places safely and efficiently with customer focus, accountability and environmental sensitivity to enhance the economy and vitality of North Carolina. " Capitulating to environmental ideologues that hold no accountability or financial risk in this proposal at the direct expense of the fiscal health of the local Outer Banks economy is a dereliction of responsibility that NCDOT should not accept.</p>
8. Richard J. Ayella	Several alternatives to the current proposal exist that are much more economical both short and long term. Additionally, the dollars spent by tourists to this paradise must also be considered. In the years that the very small group that includes my family, friends, and I have visited Rodanthe, we have spent significant resources on lodging, dining, supplies, clothing, and equipment. My estimate is that we have spent in excess of \$300,000 that goes directly to the businesses in the Rodanthe and surrounding communities. Many of us will no longer venture to this area if the bridge is built and our dollars will be spent elsewhere.
9. Lynda Johnson	Please reconsider the bridge location... Poor plan/impact to economy and ecosystem.
10. Christopher Hadley and Krystine Hadley	My husband Christopher Hadley and I, Krystine Hadley, also own a 6 bedroom sound-front beach house property at 23176 Pappy Lane Rodanthe, NC. It is our understanding that you propose to build a bridge that will impact our property significantly. This was confirmed at a meeting in recent meeting in Manteo, NC where the presenter confirmed that our property

Names	Reasons
	<p>in fact would be the most negatively impacted property in the current proposal. We take issue with this proposal for several reasons, none inconsequential. Some of the anticipated impacts include:</p> <ul style="list-style-type: none"> <li>• Loss of property value due to the above factors ·</li> <li>• Loss of rental income. <ul style="list-style-type: none"> <li>– Loss of kite boarder rentals during “off peak weeks” as these folks have advised that our house will be much less desirable for kite boarding if the bridge is built due to the physical constraints that a bridge would pose:</li> </ul> </li> <li>• A dramatic increase in noise level due to all the traffic that enters or leaves Hatteras Island which will have a direct impact on our property.</li> <li>• Loss of privacy.</li> <li>• Loss of the serene natural beauty of the Sound (as the bridge will circle around the back of the home.</li> </ul> <p>Our property is currently very profitable and generates about \$100K in gross rental income per year, and both the rental income and property value are certain to fall if the bridge is constructed. For these reasons we are adamantly opposed to the proposed bridge and we will be compelled to seek legal recourse if changes are not implemented.</p>
11. David A. Hadley	<p>My son, Christopher Hadley, his wife Krystine and I own the 6 bedroom sound front beach house property at 23176 Pappy Lane Rodanthe, NC. Our property is in very close proximity to the proposed “jug handle bridge” that NCDOT plans to build in the Pamlico Sound over the next several years. From available plans, it appears that the landing for the bridge will be within about 30 feet of our home and thus our home will bear the greatest negative impact from the planned bridge (and the NCDOT staff agreed with this assessment at the public hearings held this past June). Some of the anticipated impacts include:</p> <ul style="list-style-type: none"> <li>• A dramatic increase in noise level due to all the traffic that enters or leaves Hatteras Island flowing within a few feet of our home</li> <li>• Loss of privacy</li> <li>• Loss of the serene natural beauty of the Sound (as the bridge is planned to circle around the back of our home)</li> <li>• Loss of rental income due to the factors above</li> </ul>

Names	Reasons
	<ul style="list-style-type: none"> <li>• Loss of kite boarder rentals during “off peak weeks” as these folks have advised that our house will be much less desirable for kite boarding if the bridge is built due to the physical constraints that a bridge would impose</li> <li>• Significant loss of rental income during the construction phase of the project</li> <li>• Loss of property value due to the above factors. Our property is very profitable and generates about \$100K in gross rental income per year, and both the rental income and property value are certain to fall if the bridge is constructed.</li> </ul>
12. Kel Shipman Jim Meyer	Please hear the voices of the property owners of Mirlo Beach and property owners just south, the thousands of visitors that rent these homes solely because of their location on the sound and access to clean wind and unobstructed sunset views, and finally the tax payers being asked to invest a crazy amount of money. The current plan to implement the Jug Handle not only spends too much money, it wipes out many millions of dollars of property value, income and annual tourism dollars, making it the costliest compromise that doesn't make anyone happy on either side! So let's please not make this JUG HEAD move.
13. Bette R. Gray	For those of us who call this area home a loss of our environmental assets will cause a loss in tourism and many of us hardships to survive in these northern villages. There will be a great loss in visitors and income from rental houses, loss from local business, loss of jobs and tax payer dollars. This area is a major wind sport activity area, boating and fishing. I am strongly opposed to a bridge being built in the sound. There are too many economic issues that will destroy this area and effect Hatteras Island.
14. Michael and Beth Dzaman	Please do not build this bridge it will ruin one of the greatest kite boarding and windsurfing locations on the east coast. This location is special for its shallow water, and the possibility of riding winds from almost every possible wind direction. It is one of the few places in the entire Outer Banks where that can be done. Due to the extreme exposure the winds are also consistently stronger in this area. Most kite boarders and windsurfers consider this the best location on Pamlico Sound for board sports. There is a neighborhood of beautiful homes which can be rented by water enthusiasts leading to a truly world class vacation. If this bridge is built it will cut the value of the existing homes in northern Rodanthe by at least 50%. Probably more. No one will want to rent these homes Who is going to compensate

Names	Reasons
	<p>those homeowners for this incredible loss of value? As a real estate developer, I suggest you add \$50 million to your budget to compensate these owners for a 'taking' by the state. There is ample precedent for this type of compensation. If this bridge is built it will ruin one of the best areas for this type of recreation. We certainly will no longer travel to this area.</p>
<p>15. Anne Picher and Jean Pierre Picher</p>	<p>If the "jug handle" bridge is built sadly that will be the end of our vacations at the Outer Banks and our contribution to the local economy.</p>
<p>16. Guy and Sandy Finn (July 11th, 2016)</p>	<p>The proposed Bridge is too close to shore and will have severe financial, visual, noise, and recreational impacts to the immediate homes located in the area. Additionally, many of the homes are vacation rental BUSINESSES that rely greatly on Pamlico Sound as a recreational area for wind surfers, kite boarders, sail boats, and other water sports enthusiasts. If 2014B is allowed to be built, it will severely impact these owners' ability to rent these properties. These rental businesses also provide customers that support grocery, retail, and rental businesses in the area, which also generate local and state taxes. Much of Rodanthe community's revenue and tax base will be lost if a Sound side bridge is built.</p>
<p>17. Wes Hutchinson (July 14, 2016)</p>	<p>By design, both bridges remove all protection that property owners have against both erosion and inlet formation and create uncompensated economic losses for property owners in northern Rodanthe. Erosion is predictable and expected. Inlet formation is commonplace over long time horizons, but location and timing are hard to predict. A major inlet at this location will gradually move south and destroy many properties (i.e., 100 - 150 homes) along the length of either bridge before NCDOT begins protecting NC 12 (and the homes on either side). 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 a 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 and, as such, deserves protection.</p> <p>As described in the earlier Environmental Assessment, a bridge on the Current Easement will disrupt or destroy the visual and cultural characteristics of the Outer Banks of North Carolina in</p>

Names	Reasons
	<p>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).</p>

**Response:**

*Payment of Compensation in Cases of Diminution in Property Value. Community and economic impacts were evaluated as required by NEPA. NCDOT recognizes that in any project of this magnitude and significance to the traveling public, there may be assertions by a select group of property owners of diminished property values and claims of other tangible and intangible economic, visual, or aesthetic impacts. NCDOT has completed its NEPA assessments in accordance with relevant guidance and intends to work diligently to minimize, reduce and eliminate impacts associated with the project. However, NEPA does not provide a legal mechanism for payment of compensation in cases of diminution in property value.*

*Protecting Homes. NCDOT's primary statutory duty is to strive to maintain reliable road access for the public. While recognizing that shoreline erosion is a concern in Rodanthe, protecting homes and businesses from shoreline erosion is not an obligation of NCDOT. The potential for economic loss because of coastal processes such as shoreline erosion are a risk the individual takes when they buy property on the Outer Banks. The State of North Carolina, while recognizing the economic benefits of the public's investments on the Outer Banks, does not assume that risk. With the Selected Alternative, NC 12 will be left unchanged from the bridge terminus to the refuge line to provide access to homes and businesses in Rodanthe. NCDOT will maintain this access to private property until, because of shoreline change, it is no longer reasonable and feasible to do so.*

*The construction of the Selected Alternative would not prohibit another entity from pursuing a beach nourishment project designed to protect homes in northern Rodanthe.*

*Favoring Natural Resource Impact Avoidance over Community Impact Avoidance. In developing a transportation project, NCDOT is obligated by federal law to consider the full range of natural, community, and cultural resource impacts. In doing so, the alternative selected for implementation almost always has impacts, including notable impacts, to some components of both the natural and human-made environment. This is*



*the case with the Phase IIb project. The objective is to identify a solution that meets project needs while minimizing all natural, community, and cultural resource impacts to the extent possible. NCDOT feels it has achieved that objective with the Selected Alternative. Regarding the statement that the Preferred (now Selected) Alternative “has the support of federal and state environmental resource and regulatory agencies, including the US Fish and Wildlife Service and other agencies that will issue permits for its construction,” permits could not be obtained and the project could not be built, without being in compliance with state and federal laws. The statement was included because commenters on the 2013 Phase IIb EA expressed concern that resource agencies would not issue the needed permits for the Bridge on New Location Alternative.*

*Regarding the concern that NCDOT is “capitulating to environmental ideologues,” and “ancillary environmental aspects are being heavily prioritized and punitively” see Section C.1.2, “Concerns with the Change in the Preferred (now Selected) Alternative Decision and the Involvement of Environmentalists in the Change.”*

*Considering Economic Impacts. Three types of economic impacts, including those associated with the loss of tourism, were considered during impact assessments included in the 2008 FEIS and subsequent EAs:*

- 1. Impact of NC 12 Closures. NC 12 closures that result from storms create economic losses for homes and businesses serving tourists on all of Hatteras Island, as well as Ocracoke Island. Such closures also impact the permanent population in terms of access to work, shopping, doctors and the hospital, and off-island school activities. The 2008 FEIS included the following finding related to the economic loss associated with a breach of NC 12: “The economic assessment found that direct and secondary impact (measured as a reduction in retail sales) of a breach open for three months would be \$5.7, \$46.3, and \$146.7 million in the off-peak, middle, and peak seasons, respectively. A six month breach covering the middle and peak six months would result in reductions in retail sales of \$193.0 million. The job loss with a breach in the peak three months was estimated to be 30,000 person months. The combined state income and sales tax loss, Dare County occupancy tax loss, and Dare County food and beverage sales loss was estimated to be \$16.7 million for three months in the peak season and \$21.1 million for six months over the six-month middle and peak seasons.” Thus, NCDOT decided to minimize the opportunity for this economic impact to occur by defining reasonable long-term solutions for parts of NC 12 threatened by shoreline erosion or breaching as ones where the corrected portion of NC 12 is unlikely to be susceptible to sand overwash or damage during storms. In the Rodanthe area, not building a bridge would leave NC 12 susceptible to sand overwash or damage during storms. A bridge is needed to have the desired positive economic benefit for all of Hatteras Island.*
- 2. Impacts to the Dare County Tourism. This type of economic impact was first addressed by the decision described in item 1. Secondly, it was addressed in terms of*

loss of access to recreation opportunities. An economic impact assessment for this type of impact was done in the 2008 FEIS for bypassing the Refuge completely. It is presented in Section 4.1.5 of the 2008 FEIS. It concluded that the economic impact to Dare County from loss of tourism would not be great because for most recreation activities, there are alternative sites to conduct the activity within the county. Thus, the lack of access in one location would mean that most people likely would conduct their preferred activity elsewhere in Dare County instead of choosing to visit another coastal recreation area. The findings of this study were considered applicable to recreation impacts in Rodanthe for both a bridge in Pamlico Sound and a bridge in the existing NC 12 easement that would ultimately affect recreation in the Atlantic Ocean. This is discussed in Section 4.2.4.2 of the Revised Phase IIb EA. The Rodanthe area has important water recreation features on both sides of the island. A bridge within the existing NC 12 easement would affect those on the Atlantic Ocean and a bridge in the Pamlico Sound would affect those in Pamlico Sound. In terms of this impact one alternative does not have an advantage over the other, and in both cases, there are other parts of Pamlico Sound and the Atlantic Ocean shore where these activities can occur in Dare County. Thus, the economic impact of changed recreation access to Dare County tourism likely would not be notable and the impact that would occur would be similar for any of the detailed study alternatives.

3. Impacts to Local Residents and Businesses. It was found those displaced could be relocated elsewhere on Hatteras Island. With required relocation assistance, there would be minimal economic impact from displacement with the possible exception of a relocation of the Liberty Service Station/Island Convenience Store, which would only occur with the Bridge within Existing NC 12 Easement Alternative. As indicated in Section 4.2.1 of the revised Phase IIb EA: “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.”

In terms of impacts to those not displaced, it was assumed that the economic impact would be directly related to the change in the setting of individual properties with each alternative. In other words, the bridge alternative with the greatest community impacts would have the greater economic impact. NCDOT concluded that the Bridge within Existing NC 12 Easement Alternative would have the greater community impact. With the Bridge within Existing NC 12 Easement Alternative, a 30-foot high bridge (deck elevation) would be in the immediate views of over 50 residential and business structures that line NC 12. Views from homes would be blocked at the second or third story levels. From the ground, the bridge would be a dominating presence in front of these homes and businesses. As shown in Figure 11 of the Revised Phase IIb EA, where the bridge is in the sound, the distance from the bridge to the soundside shoreline would range from 460 to 2,350 feet. The bridge would not reach its full height until it is in the sound. The bridge would range from 12 to 19

feet high as it passes the two homes near the bridge, 20 and 90 feet away, respectively. Once it turns north from Rodanthe, the 2014B Bridge on New Location Alternative would be approximately 1,400 feet from the shoreline and the homes that line the shoreline. The Bridge within Existing NC 12 Easement would be 1,400 feet away or less from all of the homes in northern Rodanthe, and the homes along NC 12 would be 65 to 230 feet from the bridge deck.

It was based on the conclusion that the impacts to local residents and businesses would be greater with the Bridge within Existing NC 12 Easement Alternative, combined with the USFWS’s support of the Bridge on New Location Alternative, that led NCDOT to begin discussions with environmental resource and regulatory agencies on how to minimize the impacts to Pamlico Sound’s natural resources so that a bridge in Pamlico Sound could potentially be implemented rather than a bridge within the existing NC 12 easement. With that in mind, NCDOT conducted new SAV surveys in Pamlico Sound in 2013 and began discussions with the NMFS and USFWS in February 2014 on how to minimize and mitigate impacts in the sound.

Ecosystem/natural resource impacts referenced in two of the comments above are addressed in Section C.1.6, “Natural Resource Impacts of the Preferred (now Selected) Alternative.” Specific community impacts listed by several commenters are addressed in Section C.1.5, “Community Impacts of the Preferred (now Selected) Alternative.” Reasons why alternatives suggested in other comments as being lower in cost are not being pursued are discussed in Section C.1.3, “Other Alternatives Preferred by Commenters.” Reasons why the Nourishment Alternative is not being pursued are presented in Section C.1.3.2, “Beach Nourishment.”

**C.1.6 Natural Resource Impacts of the Preferred (now Selected) Alternative**

**C.1.6.1 Water Quality**

Names	Reasons
1. Amy Jones and Tom Aschmoneit	<p>What effect will the bridge have on the quality of our water and food sources? Not taking into consideration the damage to the area during construction. Increased concentrations of pollution from tires, fuel and oil run-off into the sound poisoning the water. What type of documentation exists that supports the bridge relating to this? Did the environmental assessment address these concerns?</p> <p>Were water samples taken at the shoreline? Now proposal 2014B is citing aquatic plants as a reason for relocating the bridge closer to shore? To which, has anyone in the deciding committee ever been in the Pamlico Sound? What sort of water and soil pollution tests have been performed?</p>

Names	Reasons
2. Guy and Sandy Finn (June 14, 2016); Morris Neuman and Jer Mehta	We now consume food caught in the sound, crabs, fish, clams and oysters. What effect will the bridge have on the quality of these food sources? Not taking into consideration the damage to the area during construction. Increased concentrations of pollution from tires, fuel and oil run-off into the sound poisoning the water. What type of documentation exists that supports the bridge relating to this? Did the environmental assessment address these concerns?

**Response:**

*Water Quality Impacts and Mitigation. In terms of the effect of bridge runoff on aquatic resources in general, a Bridge Stormwater Project (BSP) was initiated by NCDOT in November 2008 to comply with Session Law 2008- 107, The Current Operations and Capital Improvements Appropriations Act of 2008, enacted by the North Carolina General Assembly. Section 25.18, "Stormwater Runoff from Bridges," required NCDOT to study the effects of stormwater runoff from bridges over waterways and report to the Joint Legislative Transportation Oversight Committee by July 1, 2010. To assess the effect of bridge deck runoff on receiving streams, the BSP team relied on a weight-of-evidence (WOE) approach to integrate the diverse and complicated interactions associated with episodic stormwater events and receiving water quality. The lines of evidence or analyses performed included biological assessments, ambient water quality chemistry, aquatic toxicity, bridge deck runoff quantity and chemistry, and sediment quality. The analyses resulted in over 100,000 data points being collected and reviewed to support the WOE evaluation. While several parameters-of-concern from bridge deck runoff exceeded site-specific surface water quality thresholds, the analyses associated with aquatic toxicity, biological assessments, and sediment data did not indicate long-term adverse impacts from untreated bridge deck discharges. Therefore, the BSP team concluded that NCDOT's current use of structural and non-structural stormwater control measures (SCMs) for the mitigation of bridge deck runoff is protective of surface waters. The results of this study are documented in the report: Stormwater Runoff from Bridges, Final Report to Joint Legislative Transportation Oversight Committee (URS 2010).*

*The BSP study concentrated on samples collected from bridges across lotic systems (streams, creeks, rivers) from predominantly the interior counties of the state, including the Wright Memorial Bridge and the Virginia-Dare Bridge. While none of the BSP monitoring occurred in lotic systems equivalent to the Pamlico Sound, characteristics of barrier islands provide a less than hospitable environment in which bridge deck pollutants could accumulate (e.g., little to no mud or clay to which toxic metals may bond), high dissolved oxygen (positive habitat effects), higher pH (positive habitat*

effects), and persistent dilution because of mixing from a highly dynamic system influenced with tidal and wind mixing/flushing.

As described in Section 4.2.5.1 of the Revised Phase IIb EA, to minimize the potential impact of project pollutants, post-construction stormwater control measures would be implemented according to NCDOT's 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 design and in the process of obtaining related permits. Best Management Practices (BMPs) for minimizing impacts to water quality during construction discussed in Section 4.7.2.2 of the 2008 FEIS will apply. This will include use of the erosion and sedimentation control measures specified in NCDOT's "Design Standards in Sensitive Watersheds" (15A NCAC 04B.0124). Additional information on surface waters and water quality is presented in Section 7.7.2 of the 2008 FEIS and in Section 4.2.5.1 of the Revised Phase IIb EA.

Water Sampling. Project-specific water and soil samples were not collected for evaluation of pollutants as part of this study; however, NCDEQ-DWR, USEPA, and US Geological Survey (USGS) monitor and have collected and evaluated sites throughout the region. The waters of the project area are classified by NCDEQ-DWR as SA waters (Class A saltwaters) with a supplemental classification as High-Quality Waters (HQW) based on sampling data.

Aquatic Plants as a Reason to Shift the Bridge on New Location Alternative Alignment. The 2014B alignment is in an area that contains less submerged aquatic vegetation (SAV) than the 2013 alignment. All of Pamlico Sound in the project area is classified as essential fish habitat (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. SAV is identified as a specific Habitat of Particular Concern (HAPC) of EFH. Denser SAV offers more cover and food resources compared to patchy SAV for the same area. SAV is important spawning, breeding, feeding, and refuge habitat for a variety of fish and other aquatic wildlife. In addition to providing nursery functions, SAV provides oxygen, absorbs wave energy, and has the ability to uptake nutrients and export carbon, nitrogen, and phosphorus to coastal food webs. It is for these reasons that the 2014 alignments were developed and the 2014B alignment is the Selected Alternative.

Team in Pamlico Sound. Members of the biological study team for the project have been on Pamlico Sound, including those who conducted SAV surveys in the project area in 2014 and 2015. SAV has been monitored in the area in numerous studies since 2009. Decision-makers relied, in part, on the findings of the biological study team in making their decisions.

Aquatic Food Consumption. The presence of the bridge and construction of the bridge are expected to have minimal short-term effects and no adverse long-term effects on the quality of aquatic resources for human consumption. The Bridge Stormwater Project (BSP) report analyzed stressors including: sedimentation, habitat degradation, hydromodification, toxicity, and organic and nutrient enrichment. The study found no substantial difference for toxicity components or benthic invertebrate communities on either side of the bridges in the study. As noted above, NCDOT will develop and apply a stormwater management plan for bridge operation and use BMPs to minimize impacts during bridge construction.

**C.1.6.2 Fish and Wildlife**

Names	Reasons
1. Amy Jones and Tom Aschmoneit	There are turtles, oysters, crabs, clams, mussels and fish that call these shallow waters home. We have many migratory birds that will be effected. There are horseshoe crabs, string rays, and moccasins that consider this a mating area. There are numerous land species that roam the area. The impact of a bridge on the numerous species that have in recent years begun to thrive again seems extremely detrimental. What documentation exists in relationship to the bridge and the thousands of species who cohabitate here?
2. Guy and Sandy Finn (June 14, 2016); Morris Neuman and Jer Mehta)	In September and October Cormorants by the thousands migrate south exactly where you are proposing the bridge. Why is it better for the birds to have the bridge in the sound and not down the NC 12 easement? What documentation exists to support the bridge relating to this?  There are several groups of Pelicans that use this bay daily for feeding. They arrive in the morning and again in the afternoon. What effect will the bridge construction have on their feeding habits? This year has been seen a bumper crop of Horseshoe Crabs mating in the area. What effect will the bridge have on them, and what documentation exists to support it.
3. Richard J. Ayella	The Rodanthe bridge is proposed to be constructed in near shore shallow water habitat defined by the agencies listed above to be the most productive and valuable habitat in the Pamlico estuary and its adjoining upland communities. This habitat provides for fish nursery and spawning and provides the habitat for tidal marshes and submerged aquatic vegetation. It is home to many aquatic vertebrate and invertebrate organisms including abundant shell fish that the State of North Carolina has expeditiously protected.

Names	Reasons
	<p>The site is on the North American Atlantic Migration Flyway which the U.S. Fish and Wildlife Service's (FWS) avidly manages. For example several of the main objectives of the FWS are to protect and guide the conservation, development, and management of the Nation's fish and wildlife resources and to administer a national program to provide the public opportunities to understand, appreciate, and wisely use fish and wildlife resources. Several of their functions are to protect endangered species, manage migratory birds, restore significant fisheries, and conserve and restore wildlife habitat such as wetlands. Construction of the bridge as currently proposed is in direct opposition to each of these functions and objectives.</p> <p>In addition to the impacts currently identified to date, there are numerous unidentified and significant associated environmental impacts. To name just one, Construction Equipment Access. The bridge would be constructed using heavy barge mounted cranes. These barge or barge-like vessels draw significant water depths well in excess of what the agencies consider to be near shore shallow water habitat. This valuable habitat would need to be dredged to accommodate these vessels thereby directly impacting fish, shell fish, and submerged aquatic resources.</p> <p>In my tenure protecting and regulating water resources side by side with the federal agencies, I have never experienced a project with such significant environmental impacts that met the approval of the any state or federal agency. Associated with the dredging will be the need to properly dispose of the dredged material. There are no adequate upland dredged material placement sites within close or economical proximity of the site. Beach nourishment or replenishment is not an option due to the unsuitable mostly fine nature of the dredge material.</p>
<p>4. Guy and Sandy Finn (July 11, 2016)</p>	<p>We were told at the 2016 community meeting that the reason for the bridge re-location was to minimize the effect on EFH (Environmental Fish Habitat) and SAV (Submerged Aquatic Vegetation). In reviewing the handout that was provided at the public meeting referencing Page 12, Table 1 Essential Habitat, the difference in the two proposals are: 2013, 11.23 acres of permanent impact on EFH &amp; SAV, and 2014B 10.50 acres of permanent impact EFH &amp; SAV. A difference of 3/4 of an acre of EFH and SAV from the 2013 version to the 2014B version!</p>

**Response:**

Wildlife in Pamlico Sound. Documentation of the wildlife and ecology of the project area in relation to the detailed study alternatives can be found in the Revised Phase IIb EA in Section 4.2.5 and the 2008 FEIS in Section 4.7, as well as supporting documents including the Biological Assessment Addendum (for protected species) for Rodanthe Phase IIb (2016), Essential Fish Habitat Addendum for Rodanthe Phase IIb (2016), and the Natural Resources Technical Report (2008) produced for the 2008 FEIS.

Cormorants. It is well documented that large flocks (in the thousands) of double-crested cormorants can be found along the Outer Banks throughout the fall, winter, and spring (eBird website; <http://ebird.org/ebird/GuideMe?cmd=decisionPage&getLocations=counties&counties=US-NC-055&yr=all&m=>). Large flocks often concentrate around inlets (Oregon and Hatteras) and Cape Point and often migrate through inlets and along shorelines. In general, more avian species (game and non-game neotropical migrants) migrate over the island habitats and refuge impoundments compared to open water areas. The bridge using any of the three alignments is not expected to disrupt the flight patterns of cormorants. Unpublished NCDOT survey data on bird mortality on six coastal bridges (including Bonner) found gulls (and few cormorants) to be the primary species encountered. Additional information on potential effects of the project on bird populations are addressed in the Revised Phase IIb EA in Section 2.6.2.1.

Pelicans. Brown Pelicans are very common and use a variety of habitats in the project area. The bridge is not anticipated to adversely affect the brown pelican or its feeding patterns. Brown pelican movements are often based on fish movement patterns and are frequently encountered around bridges and piers. The bridge will span fringing shorelines and marshes and not prohibit or impede horseshoe crab movement or use of coastal marshes. There may be short-term local disruptions to aquatic life in the area during construction, but no long-term adverse effects to pelicans or horseshoe crabs are expected.

Project Area Habitat Value. The shallow near shore waters of the Pamlico Sound are important habitat and EFH like all similar North Carolina coastal areas. SAV and coastal marshes are often found in association with shallow waters and provide a more diverse assemblage of plants and animals compared to the open water areas. The Selected Alternative is located to avoid and minimize impacts to water resource and sensitive habitats, including wetlands and SAV and does so better than the 2013 Bridge on New Location Alternative alignment.

North American Atlantic Migration Flyway. Just like the new Oregon Inlet bridge, the Selected Alternative would not affect the navigation capabilities of avian species that follow the Atlantic Flyway. The Selected Alternative would not alter the mission of the



USFWS or inhibit or prevent the USFWS from management of the North American Atlantic flyway. The USFWS representatives concur that the Selected Alternative is the Least Environmentally Damaging Practicable Alternative (LEDPA).

Construction of the Selected Alternative. Construction does not have to be via barges. As stated in the Project Commitments on page iii of the revised Phase IIb EA, 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. Work bridges also would be used to carry construction equipment over intertidal marsh areas.

Difference in EFH and SAV Impact. The difference in EFH and SAV impact together between the 2013 alignment and the 2014B alignment is small because all of Pamlico Sound in the project area is EFH and all SAV is EFH. Thus, this difference is confined to the difference in the length of the bridge. The 2014B alignment is shorter than the 2013 alignment. While this small difference was presented in the public hearing handout and in Section 4.2.5.5 of the Revised Phase IIb EA, it was not a reason for choosing the 2014B alignment over the 2013 alignment. The 2014B alignment is preferred over the 2013 alignment because it would affect fewer dense beds of SAV. SAV is identified as a specific Habitat of Particular Concern (HAPC) of EFH.

### C.1.7 Need to See the Bigger Picture

Names	Reasons
1. Michael E. C. Gery	<p>With grave reservations, I support the “preferred alternative” of the 2014B Bridge on New Location. My reservations extend from two previously stated positions related to this project:</p> <ol style="list-style-type: none"> <li>1. The 17.5-mile bridge between Bodie Island and Rodanthe (now considerable “not affordable”) would have accomplished the goals of the NCDOT and all state and local government entities at the time they all approved it, and it certainly would have been “affordable” in today’s terms, and in fact would be in operation today. The multi-phased, ill-planned approach NCDOT has taken since then is not only much more expensive than the Long Bridge, but also more disruptive to local business and the environment, and it will surely be destroyed in coming storms.</li> <li>2. It is impossible to consider the economics and efficacy of these phased “improvements” to NC12 here without seeing a total plan and picture of the project. Phasing in these projects presents continual surprises and cannot fairly</li> </ol>

Names	Reasons
	<p>estimate the costs and environmental impact. Planning in this way also reinforces the general opinion of the NCDOT as short-sighted, and without vision, as evidenced by dropping the Long Bridge.</p>
<p>2. Frank A Jakob</p>	<p>Please don't waste our tax dollars "Painting Yourself into a Corner." I hope there is someone smart enough to look at the overall picture. I am a former Project Engineer (building power plants plus Steel Mills) and have lived 40+ years in the Tri-Villages. I have firsthand experience in this immediate area, because I lost my house and business to the ocean (1-1/2 miles south on the "S" curve) when the sound and ocean meet at the Chicamacomico Fire House during Hurricane Gloria (and rebuilt afterwards, out of pocket with no insurance or help from SBA or FEMA). This proposed new bridge is a disaster waiting to happen! DOT Engineers and planners are not looking at the overall picture. The ocean overwashes NE to SW and the sound over washes SW to NE over and over and over NC 12 in Rodanthe (former inlet area, look at the old maps from past 200 years), not only in the "S" curve but all of NC 12 from "S" curve down to Atlantic Avenue (Pier Road) and beyond. Remember what happened in August 2011 during Hurricane Irene? How about 1985 Hurricane Gloria? How about every Nor'easter past 40+ years? There was another inlet cut (as usual) from Pier Road to Sound at Atlantic Avenue, 1-1/2 miles south of "S" Curve. This happens every Nor'easter, can't get off or on Island. They are building a bridge to "nowhere" at the bottom of the ramp at Mac's. This will be underwater during a normal Nor'easter, let alone tropical depression or hurricane and vehicles will not be able to get off the ramp heading south, nor get on the ramp heading north, needless to say the traffic congestion at the "bottleneck" (?) trying to make a turn during tourist season. This is a public safety and welfare hazard! The bridge should continue to the (100 plus acres) at Salvo Campground because 95 percent+ traffic goes south to Avon-Buxton-Frisco-Hatteras plus Ocracoke terminal, especially during season (mid-week) when all the tourist from up north Outer Banks take a day trip to the Cape Hatteras Lighthouse and the ferry to Ocracoke. Leave NC 12 "where is"/"as is" for all local traffic for RWS. It is very common practice for all resort areas to beach nourish every 7+ years. Our barrier islands are dynamic moving westerly. Take a look at Portsmouth Island, which was the center of trade in the 17th century until the inlet filed up and then it became a</p>

Names	Reasons
	<p>ghost town. (I go there frequently on fishing excursions. Portsmouth has a natural beach just like it used to be on Hatteras Island before Park Service and Pea Island Refuge, small dunes and ocean over wash allowed the beach natural dune line to migrate and inlets come and go.) It's like painted yourself into a corner. You need to look at the overall picture. I pointed this out to several so called DOT consultants at the RWS meeting and was told they were only hired to bypass the 'S' curve and have budget restraints. If so, then continue beach nourishment until funds are obtained to do it right. I hope people will write in their comments officially to the Park Service. I will. If you don't stand up with official written comments during limited comment period....then you don't have any right to complain about the outcome. End Result is a New Bridge across Oregon Inlet and a leggat bridge at New Inlet and road to nowhere. Why do you think they call it "New Inlet"?</p>
3. Rick Jones	<p>The Bonner Bridge Replacement initiatives solve the aging Bonner Bridge, Pea Island Breach and Rodanthe "S" Curve situations. The presentation Figure 2 also includes a hot spot just beyond the Bonner Bridge south end, just south of the Canal Zone Hot Spot and at the Sandbag Area Hot Spot. Are there any additional plans to mitigate overwash and blowing sand resulting in continued road closures?</p>

**Response:** *Regarding the 17.5-mile bridge or Pamlico Sound Bridge Corridor Alternative, the last cost estimate was presented in a 2010 EA. At that time, the Pamlico Sound Bridge Corridor Alternative was expected to cost \$942.9 million to \$1.441 billion dollars. The most expensive alternative for the Parallel Bridge Corridor (improvements along Hatteras Island) was \$1.1 to \$1.5 billion. Both sets of costs were for NC 12 improvements from the north side of Oregon Inlet to Rodanthe and are considered similar. The Pamlico Sound Bridge was not pursued because as noted in the comment and as stated in Section 2.2 of the 2010 EA, it would require financing in its entirety a single construction phase. The project could not be financed by phasing construction (i.e., spreading out the cost over many years) because much of the 17.5-mile long bridge would be approximately 5 miles west of Hatteras Island in Pamlico Sound, so there would be no point at which to tie a partial bridge into existing NC 12 to make it operational. Funding construction of a 17.5-mile long bridge would create a unique maintenance problem of extraordinary magnitude for NCDOT as it would have to defer much needed improvements on the remainder of the state highway system in North Carolina for a significant period of time.*

*In terms of a total plan, the Phase IIb project is one part of the alternative selected for implementation in the 2010 ROD that addresses the need for improvements to NC 12 from the north side of Oregon Inlet to Rodanthe, the Parallel Bridge Corridor with NC 12 Transportation Management Plan Alternative. As described in Section 3.3 of the 2010 ROD, the NC 12 Transportation Management Plan Alternative consists of replacing the bridge over Oregon Inlet at a location immediately west of the current bridge followed by improving NC 12 when essential. NC 12 Transportation Management Plan Alternative did not specify a particular action 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, it 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 is guiding the implementation of future phases of the project through 2060. By actively monitoring the conditions and delaying decision-making as set forth in the NC 12 Transportation Management Plan, the environmental impacts beyond Phase I can be better quantified, minimized, and mitigated. The plan includes:*

- A coastal monitoring program on Hatteras Island from Oregon Inlet to Rodanthe, ongoing with annual reports since 2011.*
- A periodic Refuge habitat/NC 12 vulnerability forecasting study in consultation with USFWS. Through this program NCDOT and USFWS will work together to develop and assess alternative future scenarios including possible site-specific events and remedies.*
- Using the outcome of the first two items to determine when the environmental review for each phase should be initiated and what alternative actions should be studied in detail.*
- Coordination with environmental resource and regulatory agencies through NCDOT's NEPA/Section 404 Merger Process to study, select, and finalize future phases.*

*Any part of Hatteras Island and NC 12 could be flooded by a storm surge, including at the Salvo campground. The termini of all of the bridge alternatives assessed end behind the forecast 2060 shoreline and as such will not be affected by shoreline erosion through at least 2060. South of Rodanthe, NC 12 is not threatened again by shoreline erosion until the Avon to Buxton "hot spot." With the Selected Alternative, NC 12 will be left as is from the bridge terminus to the refuge line to provide access to homes and businesses in Rodanthe. It will be adjusted as needed as the shoreline erodes. The bridge alternatives extend the full length of the south part of the Refuge and Rodanthe that is susceptible to breaches, which on the south end stops in the Pappy Lane area.*

The turn onto NC 12 at the southern end of Selected Alternative has a 40 mph design speed and so likely will be posted at 35 mph. The speed limit on that part of NC 12 is 45 mph. NCDOT conducted a peak traffic analysis for forecast future traffic through this curve and its intersection with existing NC 12 and concluded that the intersection would not suffer traffic congestion during peak travel periods.

### C.1.8 Keeping the Public Informed

Names	Reasons
1. Amy Jones and Tom Aschmoneit	<p>Many of the people that live in the immediate area of the bridge are second home owners and live long distances from the area to attend public hearings at short notice. We feel that NCDOT has done a poor job in keeping the people most affected by this decision informed. Have all public hearing notification guidelines been observed during this process? We request a formal response and formal notifications going forward via the address below.</p>
2. James Hutt	<p>The June 2016 Update letter was interesting and informative, although it seemed to be written by someone experienced with the terminology of the various projects and phases rather than writing with the goal of having an uninformed person understand what is happening and why.</p> <p>I would have thought that the Update would have mentioned a FAQ organized around topics and summary responses from the project staff.</p>
3. Scott Cragle	<p>What is the normal notification requirements for public meetings on NCDOT projects? Do you have written procedures and guidelines? Is the intent to minimize public involvement with lack of notification and short notification time?</p>
4. Guy and Sandy Finn (July 11, 2016)	<p>What exactly was the process that changed the preferred alternative from building an elevated roadway in the existing NC12 right of way to a bridge in the Pamlico Sound?</p> <p>We, and most (if not all) of our neighbors, were not notified by mail of the public meetings held in January 2014 or June of 2016. Many of the people that own homes in this area are part time residents or absentee owners. Hopefully, you are aware that Rodanthe more or less shuts down in January and very few people are available for the NCDOT's meetings as they were scheduled. While notification may have been accomplished via newspaper postings, public notices, local mail, etcetera, most</p>

Names	Reasons
	<p>property owners didn't receive this information in a timely manner; moreover, there were very few people (locals or remote owners) present to verbally spread the word. The first question and a request:</p> <ol style="list-style-type: none"> <li>1. Is there any documentation on the notification to individual property owners for the January 2014 meeting via US mail?</li> <li>2. If yes, we'd like a copy of the mailing list and the notification letter.</li> </ol> <p>There are approximately 100 Rodanthe properties that fall into a reasonable radius for notification. The 2014 notification process is an important component of the community's concern. We were told verbally and in writing that the 2014B project's final decision is the result of involved agencies and public input derived during the January 2014 meeting.</p> <p>The 2016 Rodanthe NCDOT Preferred Alternative community meetings at the three locations June 20, 21, and 22 were open houses designed to inform, relay information, and allow staff to answer questions about the project as finalized. While we think the staff did an admirable job presenting the preferred alternative, they were not there to receive input and help Rodanthe formulate a decision because the decision had already been made. The fact that the 2014B project is supposedly commissioned and moving forward came as a shock to ourselves and many in the community.</p> <p>The June meetings had no decision makers present that the community could talk with or influence for change. While we were allowed verbal comment to NCDOT staff, there were no minutes of a public hearing recorded. During these meetings, we were told that the final decision for the 2014B bridge version was based on the involved (state &amp; federal) parties and public input gained from the January 2014 public hearing. Again, since many of us were not informed in January 2014, there was not sufficient community input on the final decision. A second question and request:</p> <ol style="list-style-type: none"> <li>1. Are there minutes available from the 2014 public hearings for us to review?</li> </ol>

Names	Reasons
	<p>2. If yes, we'd like a copy of notes from those hearings or meetings and a list of state and federal employees in attendance.</p> <p>Next to the last question and a request:</p> <ol style="list-style-type: none"> <li>1. The Rodanthe community, as well as us, would like to know who exactly made these decisions.</li> <li>2. We request a list of the state and federal offices, including contacts within, that participated in and drove the 2014B solution to NC 12's reconstruction.</li> <li>3. Who represented the local community while state and federal bureaucrats made these decisions?</li> </ol> <p>The state's isolated decision process (minimizing local input) is the reason the community feels threatened, angry, and frustrated about the way project 2014B became the preferred alternative. Adding to Rodanthe's angst is that the project is proceeding with construction in an unusually expedited manner. If the community had been represented during litigation, some of these issues may have been addressed earlier building community support for alternatives to the 2014B project.</p>
<p>5. Guy and Sandy Finn (June 14, 2016); Morris Neuman and Jer Mehta</p>	<p>Many of the people that live in the immediate area of the bridge are second home owners and live long distances from the area to attend public hearings at short notice. We feel that NCDOT has done a poor job in keeping the people most affected by this decision informed. Several of the homeowners on the Sound received flyers/notification in the mail. My wife and I being located one house from the Sound have received no notification regarding the public hearing other than word of mouth in the neighborhood. While this project has taken on wings since the settlement with the SELC, it is important everyone affected is notified. Have all public hearing notification guidelines been observed during this process?</p>
<p>6. Angie Maslar</p>	<p>I'm just wondering if the notes for the meetings on the Rodanthe bridge will be posted online somewhere. Thanks very much,</p>
<p>7. John Zayanskosky</p>	<p>1. Your decision to have three (3) straight meetings on weeknights Monday 6/20, Tuesday 6/21 and Wednesday 6/23 is unacceptable. I am from out of state and cannot be</p>

Names	Reasons
	<p>there on a weeknight. Excellent planning by NCDOT. Is it unreasonable to have a meeting on a weekend when in and out of state people are in the area? Please answer this question. NCDOT has to wake up and be real. I know government holds the power over the citizens and this is a good example.</p> <p>2. Your drawings are unacceptable as it shows a 2 lane bridge with both cars going the same way. I assume you are building 2 bridges or it is a one way bridge. Someone has to explain this or will it magically change on the website one day. The Governor will then have to explain how this happened. Wake up.</p> <p>3. I have left messages with Drew and Nora and either someone calls back 4 days later or someone does not call back until a 2nd call is made. Please listen to the people since people do not forget. Your public input is kind and nice but simply a process. At the end NCDOT does what it wants to do but people do not forget and eventually someone pays the price.</p> <p>In closing you wanted input and you have it. Now it comes down to if NCDOT listens and do what is best for the people. Remember what happened most recently in England and the Cincinnati Zoo. People and lives came first in Cincinnati and not wildlife. In closing the recommendation is to move the bridge out further into the Sound. Your internal closed door meetings are what it is all about - transparency. Think of that when you discuss the project and what you tell the people at the end.</p>
8. Bette R. Gray	I am a native of Hatteras Island, full time resident of Waves and owner of a sound-front home in Northern Rodanthe. According to information posted in the news media and several meetings held locally it appears the bridge proposal was already confirmed before public knowledge.

**Response:**

*Public Notification and Opportunity to Comment. All public notifications guidelines were observed. The public had an ample and meaningful opportunity to submit comments even if they did not attend the public hearings. NCDOT's desire is to maximize public involvement during environmental documentation review periods. For an EA, FHWA guidance states that: "EAs do not need to be circulated but they must be*



*made available to the public through notices of availability in local, state, or regional clearinghouses, newspapers and other means.” NCDOT sent a newsletter to everyone on the project’s mailing list – approximately 7,085 addresses – to announce the public hearings and the availability of the EA. The project mailing list includes all property owners in northern Rodanthe (based on tax records), all those who have previously attended public meetings for the Bonner Bridge project, and others who have requested to be on the mailing list. The list of property owners was last updated in late 2013 and was considered sufficiently up-to-date for the newsletter mailing in both December 2013 prior to the 2014 public hearings on the 2013 Phase IIb EA and again in June 2016. In addition to the project newsletter, both the January 2014 and June 2016 public hearings were advertised in local media and on NCDOT’s project website and social media pages.*

*NCDOT customarily holds public meetings on week nights. All relevant public hearing information was posted on the project website to ensure that remote homeowners could review all of the material presented at the hearing and make comments.*

*For both public hearings, NCDOT provided a minimum of a 30-day public comment period, which is consistent with FHWA requirements for public involvement. At least 15 days’ notice of the public hearing was given, meeting regulatory requirements. Prior to future mailings, the newsletter mailing list will be updated to include all those who attended the 2016 public hearings and all those who submitted comments that provided an address. NCDOT also now plans to update the property owners included in the mailing list.*

*NCDOT’s Effort to Move the Project Forward Quickly. The decision to implement a Preferred Alternative is not made until the release of this document, a Record of Decision. The 2014B Bridge on New Location Alternative was described in the Revised Phase IIb EA as the Preferred Alternative and not the Selected Alternative. NCDOT is motivated to move the Rodanthe- NC 12 project forward as quickly as possible because of the on-going risk that a major storm will damage the sandbag dune that currently protects the roadway, forcing additional costly repairs that would involve closing this vital roadway, potentially for weeks at a time. NCDOT wants to bring resolution to the ongoing problems that travelers face whenever NC 12 is damaged by storms or tidal events. Half of the beach face created as part of the Rodanthe area nourishment project in 2014 has already eroded, magnifying the need for implementing a reliable long-term solution as soon as possible. However, this does not mean that the community’s concerns about this project will be ignored, which is why the public hearings in June were held.*

*In response to public comments, NCDOT has added to the B-2500B Request For Proposals (RFP) provided to the short listed Design-Build Teams for the Selected Alternative a requirement for each team to briefly describe or illustrate two (minimum) or three concepts that could provide non-motorized water sports access to the portion of the Pamlico Sound west of the Selected Alternative. The RFP states that concepts should address parking, access, and launch area for a variety of water sports, including kite*

boarding. After project award, NCDOT will use the proposed concepts as a starting point to coordinate with Dare County and Rodanthe to address local citizens concerns about water sports access to Pamlico Sound in the vicinity of the Phase IIb project.

Public Hearing Record. The written comments included in Appendix B of this ROD and posted on the project web site comprise the public hearing minutes. This appendix presents responses to these comments. The decision on the Preferred (now Selected) Alternative presented in Revised Phase IIb EA was made by NCDOT senior management. The members of the project's NEPA/Section 404 Merger Team agreed that the NCDOT's Preferred (now Selected) Alternative was the Least Environmentally Damaging Practicable Alternative. The agencies represented on the Merger Team, as well as a history of their meetings on this project, were presented in Section 6.2 of the Revised Phase IIb EA. The names of the members can be found on the concurrence forms in Appendix A of the Revised Phase IIb EA. A member of the Albemarle Rural Planning Organization is tasked with representing the local community and transportation interests is included on the Merger Team. The agreement to settle the lawsuit was completed without public involvement because the normal procedure for any lawsuit settlement, public or private, is to only involve representatives of the parties in the lawsuit.

Direction of Cars on Bridge Illustrations. A review of the high-resolution files of the photosimulations found that the cars are placed heading in the correct direction for their lane.

Returning Phone Calls. NCDOT staff do their best to return calls from citizens as soon as possible.

Process for Identifying the Preferred (now Selected) Alternative/Apparent Emphasis on Natural Resource Impacts. The key components of the process that led to the change in the Preferred (now Selected) Alternative are described in Section C.1.2, "Concerns with the Change in the Preferred (now Selected) Alternative Decision and the Involvement of Environmentalists in the Change." In developing a transportation project, NCDOT is obligated to consider the full range of natural, community, and cultural resource impacts. In doing so, the alternative selected for implementation almost always has impacts, including notable impacts, to some components of both the natural and human-made environment. This is the case with the Phase IIb project. The objective is to identify a solution that meets project needs while minimizing all natural, community, and cultural resource impacts to the extent possible.

Requests for Information. At their request, the Finn's were sent a copy of the mailing list and a list of state and federal employees in attendance.

Update. The primary purpose of the 2016 update was to announce the public hearings, what was to be presented, and how to submit comments. Thank you for the suggestions.

**C.1.9 Other**

Names	Reasons
1. Roger Fitzgerald	What is the elevation of the bridge/ causeway that curves out in the sound?

*Response: The bridge would be 25 feet high (deck elevation) with all the Phase IIb alternatives to provide 17 feet between sea level and the bottom of the spans between the piers. One exception is with the Bridge with Existing NC 12 Easement Alternative within Rodanthe where the bridge would be 30 feet high (deck elevation) to create clearance for traffic passing under the bridge.*

Names	Reasons
1. Ralph Buxton	One of the maps showed the eroded beach in the project area by 2060. Could you please send me a copy of that map and also an explanation of what the erosion rate that was used was based on? Also, do you have any studies or other information on erosion rates in that area that I could get?

*Response: The map was included in Appendix D of the Revised Phase IIb EA. It is available on the project web site at [https://xfer.services.ncdot.gov/PDEA/Web/NC12Rodanthe/Revised\\_Environmental\\_Assessment.pdf](https://xfer.services.ncdot.gov/PDEA/Web/NC12Rodanthe/Revised_Environmental_Assessment.pdf).*

*The 2008 FEIS states in Section 3.6.3.1 that “long-term shoreline change was determined from an analysis of aerial photography and historic topographic sheets from the US Coast and Geodetic Survey dating from 1946 to 2004, a 58 year time period. Linear trends were determined for 106 transects (shoreline location cross-sections) within the project area from northern Rodanthe to Oregon Inlet.” Since the FEIS, coastal data through 2014 has been included and that additional data is taken into consideration in the 2060 high erosion shoreline included in Appendix D of the Revised Phase IIb EA.*

*The FEIS indicated that the highest erosion rates occur in the northern Rodanthe area with an average of 11 feet per year. In the ponds area, the average rate is 7 feet per year. For the area north of the ponds, the erosion rate is approximately 5 feet per year. Taking into consideration the additional 10 years of data those rates are now an average of 9 feet per year in the northern Rodanthe area and 5 feet per year in the ponds area. Accretion of 2 feet per year rather than erosion is now found in the area north of the ponds.*

*The FEIS stated that in order to capture the uncertainty of predicting shoreline locations through 2060 with these data, 95 percent prediction intervals also were calculated from the data (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).*

*The prediction of future shoreline position assumes that the trend in the shoreline change from the historical data will continue through 2060. Because of the complex interactions that cause shoreline change, a high erosion shoreline (i.e., a shoreline that experiences an erosion rate greater than past trends) was assumed in developing alternatives for NC 12 maintenance through 2060. This high erosion scenario is assumed to be the upper bound (or landward extent) of the shoreline position range determined by the mean (average) plus the prediction interval.*

*In addition, highway vulnerability to long-term erosion is defined as being susceptible to flooding and overwash when the distance from the edge-of-pavement to the active shoreline (i.e., the mean high water line) becomes less than or equal to 230 feet.*

*Planning a long-term solution to NC 12 vulnerability assuming anything less than the high-erosion shoreline plus a 230-foot buffer is considered imprudent.*

Names	Reasons
1. Rick Jones	There is currently a plan for an additional parking area within the Refuge at the north end of the preferred design. I recommend contacting the Park Service to recommend an additional parking area at the south end just inside the refuge boundary. This would allow access for park service employees and the public to the park and the associated beach areas. Noting that this location is a great surfing location. A concern for the park service is that this parking area would most likely be in the Rodanthe "S" Curves Hot Spot; however, it also would be within the beach nourishment area thus mitigating the risk.

**Response:** *The beach nourishment completed in 2014 was done as a temporary measure to help reduce damage to NC 12 in the project area until a permanent solution to the effects of shoreline erosion on NC 12 could be built. There are no plans to repeat it. Once the Selected Alternative is completed, NC 12 and the sandbags protecting NC 12 in the Refuge will be removed. Whether and how to create a parking lot in the Refuge at its south end would be up to the Refuge but it is unlikely one would be built because of the on-going risk of storm damage.*

## C.2 Government Agency Comments and Responses

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This section responds to written comments on the Revised Phase IIb EA submitted by state and federal environmental resource and regulatory agencies, as well as a regional agency. 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 B.

## C.2.1 Federal Agencies

### C.2.1.1 US Army Corps of Engineers—September 9, 2016

1. **Comment:** The jurisdictional delineation expires in 2017. Please be aware that the delineation must be current in order for a permit to be issued. I recommend that you coordinate with me to discuss a renewal of the delineation.

*Response:* NCOT will coordinate with USACE.

2. **Comment:** Section 4.4 on page 4-59 states that the anticipated impacts to wetlands are discussed in Section 4.1.5. Section 4.1.5 describes biotic communities, but does not describe impacts. Impacts are discussed in Section 4.2.5.2 on page 4-33.

*Response:* The requested correction is included in Section 7.0 of this ROD, "Corrections to the Revised Phase IIb EA."

3. **Comment:** Because the construction of the bridge will occur in Section 10 Waters, the USCG has authority to authorize all impacts associated with bridge construction. The USACE review will be limited to impacts associated with road construction. Please separate out fill impacts associated with approach construction from fill impacts associated with piling installation.

*Response:* This was done on page 4-38 of the Revised Phase IIb EA. The fill impact associated with road construction for the Selected Alternative is 0.41 acre.

4. **Comment:** The document discusses development of an SAV Mitigation Plan that will be required to offset impacts to EFH and SAV areas. If this Plan requires activities in jurisdictional areas additional permitting may be required, please coordinate with USACE to determine permit requirements.

*Response:* NCDOT and FHWA will coordinate with USACE and requested.

### C.2.1.2 US Department of the Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service—July 22, 2016

5. **Comment:** EFH Conservation Recommendations. Section 305(b)(4)(A) of the Magnuson-Stevens Act requires NMFS to provide EFH Conservation Recommendations for any federal action or permit which may result in adverse impacts to EFH. Therefore, NMFS recommends the following to ensure the conservation of EFH and associated fishery resources:
  - a. The Final EA should identify the Bridge on New Location with preferred alignment 2014B as the selected alternative for the Rodanthe Breach Area.
  - b. All permanent and temporary impacts to SAV and salt marsh habitat should be fully mitigated after project plans reflect all practicable avoidance and

minimization. The NMFS commits to assisted NCDOT during development of the avoidance and minimization measures as well as the compensatory mitigation plan, including evaluations of the amounts of mitigation necessary.

- c. Out-of-kind mitigation credit should not be approved for construction of the wave break (oyster reef) within the SAV mitigation site.
- d. A comprehensive monitoring plan with restoration benchmarks and defined success criteria should be developed for the SAV mitigation site. The mitigation site should be monitored for five years.

***Response:** The 2014B Bridge on New Location Alternative is identified as the Selected Alternative in this ROD. NCDOT will work with NMFS and other environmental resource and regulatory agencies to finalize avoidance and minimization measures as well as the compensatory mitigation plan for impacts to SAV and salt marsh habitat. NCDOT acknowledges NMFS' position that out-of-kind mitigation credit should not be approved for construction of the wave break (oyster reef) within the SAV mitigation site. Agreement on a comprehensive monitoring plan with restoration benchmarks and defined success criteria will be a part of discussions on the monitoring plan.*

6. **Comment:** 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 the 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.

***Response:** NCDOT and FHWA have and will follow these requirements.*

### **C.2.1.3 US Department of the Interior, National Park Service—July 11, 2016**

1. **Comment:** Sections 4.1.7 and 4.2.5.5 address essential fish habitat, including soundside wetlands (estuarine emergents), submerged aquatic vegetation in the sound (seagrass), and open waters in the sound not exceeding six feet in depth. The National Park Service (NPS) calculates that its total amount of land situated in the sound under the proposed bridge where the bridge leaves FWS-Refuge for 150 feet in length, at all water depths, totals 1/3 of an acre of land, more or less, which is the basis for these comments. The NCDOT, a number of State agencies and the National

Oceanic and Atmospheric Administration have been studying the sound side waters for all of the Bonner Bridge B-2500 projects, including this one, for at least the last four years, by aerial photography and ground-truthing the results with field work sampling in the estuarine waters abutting the land. Presumably the agencies have been receiving the research results, but the NPS has not received this information at its offices, other than what has been directly requested by the Cape Hatteras National Seashore. The Department recommends that this information be located in a central place where all the agencies could access the material in a usable format and timely manner while this project is ongoing. The NPS further suggests that NCDOT require all of its contractors and State agencies doing the research to invite the Cooperating Agencies in this project to participate or observe these field activities firsthand, throughout the project, and for as long as such studies are required under the prerequisite permits.

*Response: NCDOT will consider these suggestions. Currently the NCDOT does not have a location that can be accessed by all involved agencies; however, a project that will create this type of storage is ongoing within NCDOT and will be implemented in phases. In the future, an interagency workspace will be available that could be accessed by interested agencies by permission. NCDOT expects the first phase of this project to be operational in 2017.*

2. **Comment:** The Section 4(f) Evaluation adequately describes a range of alternatives, and the affected Section 4(f) resource properties, however potential project impacts to those resources and potential avoidance, minimization and mitigation is still being developed. Page 5-25 states: "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."

The Department has no objection to the approval of the Section 4(f) contingent upon:

- a. A list of agencies that still require consultation are provided in the FHWA and NCDOT National Environmental Policy Act decision document and coordination with "appropriate agencies" includes FWS, National Marine Fisheries Service, and NPS.
- b. A Memorandum of Agreement (MOA) is developed/signed, that discloses all avoidance, minimization, and specific details of mitigation efforts, as well as who is responsible for each effort identified and the associated agencies that still require coordination.

- c. Full execution of the avoidance, minimization and mitigations identified in the MOA.

***Response:** The list of agencies that still require consultation consists of the membership of the NEPA/Section 404 Merger Team, which includes USFWS, NMFS, and NPS. Preparation of a joint MOA related to avoidance, minimization, and mitigation is not a part of FHWA and NCDOT procedures. The items NPS proposes to include in an MOA will be included as appropriate in project permits, including those of the USACE, USFWS, NPS, NCDEQ-DCM, and NCDEQ-DWR. The NEPA/Section 404 Merger Team also will have the opportunity to review the drainage design (concurrence point 4B) and the permit drawings (concurrence point 4C). NCDOT commitments also will continue to be documented in the Project Commitment sheets included in Appendix A of this ROD. They also will be a part of the specifications in the design-build contract with the contractor. NCDOT will execute the avoidance, minimization and mitigations identified in the various permits.*

#### **C.2.1.4 US Department of the Interior, US Fish and Wildlife Service—July 11, 2016**

1. **Comment:** Section 4.2.4 of the revised EA discusses updated impacts of the Phase IIb detailed study alternatives as they relate to impacts on Parks and Recreation. Under part 4.2.4.2 (page 4-28) that refers to the Bridge within Existing NC 12 Easement Alternative, it describes a preference of the Fish and Wildlife Service (FWS) to sacrifice direct motor vehicle access to the Pea Island National Wildlife Refuge (FWS-Refuge) in favor of eliminating the need for artificial dunes to maintain NC 12. It also states the FWS "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 ...." Similar language is found on page 4-31 under this same section, stating that "users will have to rely on alternate access which FWS-Refuge has indicated it would provide." Similar language was also made under section 5.4.1.4. This language needs to be clarified.

This statement was in reference to the earlier long-bridge proposal, whereby vehicle access via a NCDOT maintained road would be lost along the entire length of the existing highway easement. This statement was not directed at the Phase IIb alternative alone. The FWS indicated it would work with NCDOT and FHWA on alternatives for public access to FWS-Refuge. To this effect, FWS applied for an Alternative Transportation Planning grant from FHWA which would provide the capability and capacity to develop an Alternative Transportation Plan for FWS-Refuge. The FWS-Refuge said that in those areas where NCDOT removed portions of their maintained highway and restored them to a natural state that pedestrian access would be allowed under the same policies that exist where the highway continues to exist. The Department understands that NCDOT will construct a



parking area on the east side of the highway just north of the north landing of the Phase IIb bridge regardless of alignment.

**Response:** *The requested clarification is included in Section 7.0 of this ROD, "Corrections to the Revised Phase IIb EA."*

2. **Comment:** On page 4-42 of the revised EA, an incorrect biological conclusion is given for the federally threatened rufa red knot (*Calidris canutus rufa*). The correct biological conclusion is "May Affect, Likely to Adversely Affect". This was the biological conclusion of the FHWA in their January 5, 2015, request for re-initiation of formal Section 7 consultation. On February 9, 2015, the FWS issued an addendum to a Biological Opinion (originally issued on July 10, 2008) for this project. This addendum provided an incidental take statement for the rufa red knot.

**Response:** *The requested correction is included in Section 7.0 of this ROD, "Corrections to the Revised Phase IIb EA."*

#### **C.2.1.5 US Environmental Protection Agency, Region 4—March 26, 2013**

1. **Comment:** In general, the USEPA supports the proposed project's Purpose and Need, the new Preferred Alternative (Bridge on New Location), the Avoidance/Minimization measures taken to date, and the ongoing work to minimize harm to natural and human resources.

**Response:** *USEPA's support is acknowledged.*

2. **Comment:** The revised EA did not address climate change/greenhouse gas (OHO) emissions. We recommend that the FHWA and the NCDOT consider climate adaption measures based on how future climate scenarios may impact the proposed project in the FONSI. The National Climate Assessment (NCA) contains scenarios for regions and sectors, including transportation. Using the NCA or other peer review-reviewed climate scenarios to inform alternatives analysis and possible changes to the proposal can improve resilience and preparedness for climate change. Changing climate conditions can affect the lifespan of a proposed project as well as the project's ability to meet the designated purpose and need. For additional information, the transportation agencies may wish to refer to: [https://www.whitehouse.gov/sites/defaultfiles/docs/nepa\\_revised\\_draft\\_ghg\\_guidance\\_searchable.pdf](https://www.whitehouse.gov/sites/defaultfiles/docs/nepa_revised_draft_ghg_guidance_searchable.pdf)

**Response:** *The 2008 FEIS did discuss the outcome of climate change/greenhouse gas emissions in its discussion of accelerated sea level rise in Section 4.6.6. The requested addition to this discussion is included in Section 7.0 of this ROD, "Corrections to the Revised Phase IIb EA."*

## C.2.2 State Agencies

### C.2.2.1 *North Carolina Department of Environmental Quality, Natural Heritage Program—July 11, 2016*

**Comment:** No comment.

*Response:* No response necessary.

### C.2.2.2 *North Carolina Department of Environment Quality, Washington Regional Field Office—July 11, 2016*

**Comment:** After review of this project it has been determined that the 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.
- Demolition or renovations of structures containing asbestos material must be in compliance with 15A NCAC 20.1110 60 days (a) (1) which requires notification and removal prior to (90 days) demolition
- 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.
- Abandonment of any wells, if required must be in accordance with Title 15A Subchapter 2C.0100.

*Response:* NCDOT will adhere to the statutes listed for open burning, demolition or renovations of structures, and abandonment of any wells. Sedimentation and erosion control will be addressed in accordance with NCDOT's approved program.

### C.2.2.3 *North Carolina Department of Environment and Natural Resources, Wildlife Resources Commission—March 22, 2013*

**Comment:** We do not have any specific comments on the document; however as a member of the NEPA/Section 404 Merger 01 team we will continue to assess potential impacts as well as additional avoidance and minimization measures during the design and construction of the project.

*Response:* No response necessary.

### C.2.2.4 *North Carolina Department of Natural and Cultural Resources, Division of Parks and Recreation—July 12, 2016*

**Comment:** The comment letter indicated that comments were included in an attachment. No attachment was provided to the State Clearinghouse.

*Response: No response necessary.*

**C.2.2.5 North Carolina Department of Natural and Cultural Resources, State Historic Preservation Office – June 24, 2016**

**Comment:** No comment.

*Response: No response necessary.*

**C.2.2.6 North Carolina Department of Public Safety, Division of Emergency Management, Floodplain Management Program – June 17, 2016**

**Comment:** No comment.

*Response: No response necessary.*

**C.2.3 Regional Agencies—The Albemarle Commission**

**Comment:** No comment.

*Response: No response necessary.*

**C.3 Non-Governmental Organization Comments and Responses**

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Comments also were received from two non-governmental organizations (NGOs). The first is Save Our Sound OBX, Inc., a non-profit organization of Rodanthe, North Carolina home and business owners that object to the 2014B Bridge on New Location Alternative as the Preferred (now Selected) Alternative. The second is the Southern Environmental Law Center (SELC) who represented the Defenders of Wildlife and the National Wildlife Refuge Association in reaching a settlement with NCDOT, FHWA, and NCDEQ-DCM that resolved two lawsuits brought by these conservation groups challenging the legality of state and federal environmental reviews of the Bonner Bridge Replacement. The original correspondence is presented in Appendix B.

**C.3.1 Save Our Sound OBX, Inc.**

**Comment: Introduction and Executive Summary.** In December 2013, the North Carolina Department of Transportation ("NCDOT") and the Federal Highway Administration ("FHWA") issued an Environmental Assessment (the "2013 EA") in which the agencies identified as their preferred Phase IIb alternative a bridge within the existing NC-12 easement. Only two and a half years later, the agencies made a 180-degree turn and issued a revised Environmental Assessment (the "2016 EA") identifying as the new preferred alternative a \$200 million, 2.4-mile "jug handle" bridge running over Pamlico Sound and into Rodanthe. This abrupt change in course was not the result of material changes in environmental effects-indeed, the 2016 EA identifies no new

studies or information to justify the about-face-but was rather the predetermined result of NCDOT and FHWA's settlement agreement in a lawsuit regarding the replacement of the Bonner Bridge over Oregon Inlet (the "Settlement Agreement").

Desperate to disentangle themselves from extended litigation with the Southern Environmental Law Center ("SELC"), NCDOT and FHWA explicitly agreed, pursuant to the Settlement Agreement, to identify the bridge over Pamlico Sound as the new preferred alternative. As discussed in Section I below, the Settlement Agreement contractually bound NCDOT and FHWA to take a number of steps in furtherance of this new preferred alternative. Rather than satisfying the legal requirement to "[r]igorously explore and objectively evaluate all reasonable alternatives," 40 C.F.R. § 1502. 14(a), the agencies' issuance of the 2016 EA is merely "an exercise in form over substance" designed to retroactively paper over the agencies' predetermined decision to pursue the bridge over Pamlico Sound. *Metcalf v. Daley*, 214 F .3d 1135, 1142 (9th Cir. 2000).

In essence, NCDOT and FHWA have used the proposed Pamlico Sound bridge as a bargaining chip to appease SELC, which views this bridge as a step toward eventually eliminating all road access to the Pea Island National Wildlife Refuge. In exchange, SELC has agreed to dismiss its lawsuit over the Bonner Bridge, thereby allowing NCDOT and FHWA to proceed with a replacement project. Although the desire to provide a quick solution to the deteriorated Bonner Bridge is understandable, it does not exempt the agencies from their duties to comply with federal law. Acting in haste, NCDOT and FHWA have violated the National Environmental Policy Act's ("NEPA's") procedural requirements and contractually obligated themselves to peddling a project that is unnecessarily expensive, aesthetically unappealing, and damaging to the community of Rodanthe.

NCDOT and FHWA will be in further violation of NEPA if they fail to issue a Supplemental Environmental Impact Statement ("SEIS"). The original Final Environmental Impact Statement (the "FEIS") was issued in 2008 and covered several projects, including the Bonner Bridge. In addition to failing to adequately assess the reasonably foreseeable effects of the various alternatives, the FEIS is woefully outdated based on subsequent changes in shoreline projections and data gathered during a 2014 emergency beach nourishment project. In order to properly incorporate this new information into the alternatives analysis, NCDOT and FHWA must issue an SEIS that reevaluates a range of alternatives for Phase IIb, including but not limited to beach nourishment.

*Response: NCDOT disagrees with the comments and conclusions above. The commenter provides additional details in their comments that follow this introduction and summary. Responses to each point made follow each detailed comment.*

**Comment: The environmental assessment was unlawfully predetermined.** The discussion of environmental impacts and alternatives is the "heart" of the NEPA process

and is intended to "provid[e] a clear basis for choice among options by the decisionmaker and the public." 40 C.F.R. § 1502.14. Council on Environmental Quality 2 ("CEQ") regulations make clear that the environmental impact analysis "shall serve as the means of assessing the environmental impact of proposed agency actions, rather than justifying decisions already made." 40 C.F.R. § 1502.2(g); see also id. §1500.1 (b) ("NEPA procedures must ensure that environmental information is available to public officials and citizens before decisions are made ... "). As a result, agencies are not permitted to predetermine the results of their environmental assessments. Instead, NEPA establishes procedures that require agencies to take a "hard look" at the environmental consequences of their actions. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989). This "comprehensive 'hard look' mandated by Congress and required by the statute must be timely, and it must be taken objectively and in good faith, ***not as an exercise in form over substance, and not as a subterfuge designed to rationalize a decision already made.***" *Metcalf v. Daley*, 214 F.3d 1135, 1142 (9th Cir. 2000) (emphasis added).

In *Metcalf*, plaintiffs challenged a decision by the National Oceanic and Atmospheric Administration ("NOAA") to support the Makah Indian Tribe's petition to the International Whaling Commission ("IWC") for a license to hunt gray whales. The Ninth Circuit found that NOAA's Environmental Assessment was predetermined on the grounds that it was prepared after NOAA had already entered into a contract with the Makah pursuant to which it committed to making a proposal to the IWC. *Id.* at 1143. This agreement violated NEPA because it contractually bound NOAA to support the hunt even if the subsequently prepared NEPA documentation led NOAA to conclude that the hunt should not be allowed.

There are striking parallels between *Metcalf* and the instant matter. Just as NOAA's contract with the Makah constituted an unlawful predetermination of an environmental assessment, so too does the Settlement Agreement constitute an unlawful predetermination of the preferred alternative in the 2016 EA. In summary, NCDOT agreed under the Settlement Agreement to (i) identify the Bridge on New Location as its preferred alternative, (ii) pressure the Merger Team into identifying the Bridge on New Location as the least environmentally damaging practicable alternative, and (iii) together with FHWA, revise the Section 4(f) evaluation and 2013 EA to reflect these wide departures from the 2013 EA. As in *Metcalf*, these stipulations contractually bound NCDOT and FHWA to support a particular alternative even if, during the preparation of the 2016 EA, the agencies determined that this was not the superior alternative. In fact, it is apparent that, absent this agreement, NCDOT and FHWA did not view the Bridge on New Location as the objectively superior alternative, as evidenced by the choice of the Bridge within Existing Easement as the preferred alternative in the 2013 EA. The 2016 EA contains no material changes in the alternatives analysis that would warrant a change in course. The agencies claim to have changed their preferred alternative based on comments received in response to the 2013 EA, but these comments were largely a restatement of comments that were filed prior to the 2013 EA. Taken together, these facts

render implausible the 2016 EA's statement that "[t]he stipulations [in the Settlement Agreement] did not predetermine the choice of the Bridge on New Location Alternative as the Preferred Alternative." 2016 EA at 1-6.

Furthermore, while the Settlement Agreement states that "[n]othing in this Agreement requires or should be interpreted to predetermine NCDOT's or FHWA's choice of the Phase IIb Bridge on New Location as the Selected Alternative," Settlement Agreement at 5-6, this language is inadequate to avoid a finding of predetermination. Although NCDOT and FHWA are not contractually bound to choose the Bridge on New Location as the *final* Selected Alternative, the Settlement Agreement clearly required the agencies to take steps that have fundamentally shifted the momentum of the alternative selection process in favor of the Bridge on New Location.

In addition to greatly downplaying the Settlement Agreement's role in shaping the decision to abandon the Bridge within Existing Easement in favor of the Bridge on New Location, the 2016 EA does not contain the Settlement Agreement in an appendix. By depriving the public easy access to a contract that bound the agencies to take a position advocating for a certain alternative, NCDOT and FHWA have failed to "provide all available information that is 'essential to a reasoned choice among alternatives.'" *Sierra Club v. Van Antwerp*, 709 F. Supp. 2d 1254, 1271 (S.D. Fla. 2009), *affd*, 362 F. App'x 100 (11th Cir. 2010) (quoting 40 C.F.R. § 1502.22).

*Response:* NCDOT and FHWA disagree with the commenter assertion that the settlement agreement constitutes an unlawful predetermination of the Preferred (now Selected) Alternative. The agency comments received on the 2013 Phase IIb EA indicated that the environmental resource and regulatory agencies might agree that a Bridge on New Location Alternative could be found to be the LEDPA, if it were to be designed to avoid or minimize impacts. As described below, discussions with the resource and regulatory agencies that led to the development of the 2014B Bridge on New Location alignment and its selection as the LEDPA began well before the signing of the settlement agreement.

Agency comments on the published 2013 Phase IIb EA of particular note in this regard are:

- NMFS who said: "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."

- *US Department of Interior who said: "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."*
- *North Carolina Department of Environmental Quality, Division of Water Resources said: "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."*
- *North Carolina Department of Environmental Quality, Division of Coastal Management 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" specified in the North Carolina Administrative Code. Later in their letter they said: "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 [Coastal Resources Commission] 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."*

*As stated in Section 3.3 of the 2013 Phase IIb EA, the Bridge within Existing NC 12 Easement Alternative was originally 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." With the interest of environmental resource and regulatory agencies to potentially agree to a Bridge on New Location Alternative, recognizing that the presence of a bridge within the Rodanthe community would have greater community impacts than a bridge in the sound outside the community, and recognizing that either alternative would affect water-related recreation,*

*NCDOT decided to pursue addressing the concerns expressed by NMFS related to the location of the Bridge on New Location Alternative.*

*NCDOT conducted additional SAV surveys in 2014 and 2015. These surveys affirmed the conclusion at the September 17, 2013 meeting referenced above. The first meeting to discuss opportunities for minimizing the impact to SAV with a Bridge on New Location Alternative was held with representatives of the NMFS and the Refuge on February 13, 2014, approximately one month after the end of the 2013 Phase IIb comment period. The appellate court ruling that led to the decision to seek a settlement agreement with the SELC did not occur until June 2014.*

*The position of the resource agencies in their comments on the 2013 Phase IIb EA, negated the reason the NCDOT and FHWA felt the Bridge within Existing NC 12 Easement Alternative was originally preferred. The position of the agencies was the change that warranted NCDOT's change in course. As described in the response in Section C.1.2, refuge officials indicated that a Bridge on New Location Alternative would have the least harm to the Refuge per Section 4(f) of the Department of Transportation Act of 1966 as amended.*

*The settlement agreement with the SELC says that NCDOT will identify the Bridge on New Location Alternative as its Preferred Alternative and seek approval from resource and regulatory agencies. The comment, however, mischaracterizes this provision of the settlement by saying that NCDOT agreed to "pressure the Merger Team into identifying the Bridge on New Location as the least environmentally damaging practicable alternative." Each resource and regulatory agency on the project's Merger Team provides separate and independent input at each concurrence point. The Merger Team members render their own independent decisions and have the discretion not to concur with an NCDOT proposal or to abstain. NCDOT brings a recommendation to all Merger Team concurrence meetings, so NCDOT's recommendation to the Merger Team of a particular alternative as the LEDPA is not unusual.*

*The adjusted Bridge on New Location Alternative alignment, now called the 2014B Bridge on New Location Alternative, was unanimously concurred upon as the LEDPA on June 17, 2015 by the Merger Team. At the opening of the meeting, NCDOT affirmed that no decisions on future project phases were predetermined by the settlement agreement. USACE indicated that the settlement agreement does not limit consideration of multiple alternatives. NCDEQ-DCM affirmed that nothing in the agreement predetermines permit actions.*

*The settlement agreement is referenced in Section 1.1 of the Revised Phase IIb EA where it states that its "stipulations did not predetermine the choice of the Bridge on New Location Alternative as the Preferred Alternative." In the spring of 2015 it was and remains available on the Bonner Bridge Replacement Project web site at:  
<https://www.ncdot.gov/projects/bonnerbridgereplace/download>*



*/SettlementAgreement.pdf. The NCDOT maintains that website as one of its primary mechanisms of transparency with the public on its operations. Any member of the public had access to the settlement agreement.*

**Comment: An SEIS is required.** CEQ requirements provide that an agency must supplement an environmental impact statement if "[t]he agency makes substantial changes in the proposed action that are relevant to environmental concerns" or "[t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." 40 C.F.R. § 1502.9(c)(1)(i)-(ii). Similarly, FHWA regulations require an EIS to be supplemented when the FHWA determines that "[c]hanges to the proposed action would result in significant environmental impacts that were not evaluated in the EIS." 23 C.F.R. § 771.130(a)(1). In the instant matter, NCDOT and FHWA have made substantial changes in the proposed action by putting forth two site-specific bridge alternatives that were not adequately assessed in the FEIS. Additionally, the 2060 projected shoreline upon which the FEIS was based has proven to be inaccurate, and the 2014 emergency beach nourishment project at the Rodanthe S Curves Hot Spot has provided new information bearing on the environmental effects of the alternatives assessed in the FEIS. These new circumstances and information are critical to an adequate evaluation of alternatives and must be incorporated into an SEIS.

*Response: NCDOT disagrees with the comments and conclusions in this summary comment. The commenter provides additional details in their comments that follow this paragraph. Responses to each point made follow each detailed comment.*

**Comment: NCDOT and FHWA have made substantial changes in the proposed action and are therefore required to issue an SEIS.** The environmental effects of neither the Bridge on New Location nor the Bridge within Existing Easement were adequately evaluated in the FEIS. At that time, the Bonner Bridge Replacement Project had not yet been divided into separate phases. Rather, the project was treated as a single phase with seven alternatives that did not include the specific alternatives proposed in the 2013 and 2016 EAs. The introduction of the Bridge within Existing Easement and Bridge on New Location therefore represents a "substantial change[] in the proposed action that [is] relevant to environmental concerns." 40 C.F.R. § 1502.9(c)(1)(i).

Additionally, CEQ requirements provide that impact analysis must "[r]igorously explore and objectively evaluate all reasonable alternatives" to a proposed action in order to compare the environmental impacts of the alternatives. 40 C.F.R. §1502.14(a) (emphasis added). NCDOT and FHWA have failed to meet these obligations by prematurely disregarding alternatives such as beach nourishment and a combined approach of bridges and beach nourishment.

In the words of the 2010 Environmental Assessment (the "2010 EA"):

Possible solutions for later phases of the project include bridging, road relocation, and/or beach nourishment. All of these solutions, which are available for implementation as part of the Preferred Alternative, were identified and assessed as part of the FEIS and **would be reassessed at the time decisions on future phases are being made.**

2010 EA at 2-28 (emphasis added). Despite these assurances, NCDOT and FHWA have conducted a detailed study of only two alternatives during the current Phase IIb - the Bridge within Existing Easement and the Bridge on New Location. As explained in the 2016 EA, the Merger Team reached consensus at a November 14, 2012 meeting that neither beach nourishment nor a combined nourishment/bridge approach would be carried forward as detailed study alternatives. 2016 EA at 2-7. This decision was made over three and a half years prior to the publication of the 2016 EA and directly conflicts with the 2010 EA's guarantee that such alternatives would be reassessed at the time that decisions on future phases are being made. By inaccurately stating that alternatives such as beach nourishment would be reassessed at the time of later phase decisions, the 2010 EA did not put the public on notice that these alternatives would be unilaterally eliminated by the Merger Team without further public comment.

***Response:** The Bridge on New Location Alternative and the Bridge within Existing NC 12 Easement were both assessed in the 2008 FEIS. The Bridge South component of the Road North/Bridge South Alternative is a bridge within Pamlico Sound. In the Rodanthe area it is in almost the same location as the Preferred (now Selected) Alternative. See Figure 4 of the Revised Phase IIb EA. From about the Refuge border north, the Selected Alternative is farther from the shoreline. This change was made at the request of Refuge so the project introduces as little new easement in the Refuge as possible. Also in the 2010 EA, the Bridge South at its terminus in Rodanthe was refined to reduce historic resource impacts (see Section 2.1 of the 2010 EA).*

*The Bridge within Existing NC 12 Easement Alternative was assessed as the Phased Approach/Rodanthe Bridge Alternative in the 2008 FEIS. Like the Bridge South, in the 2010 EA, the Phased Approach/Rodanthe Bridge Alternative was refined to reduce historic resource impacts (see Section 2.1 of the 2010 EA). In the context of the preparation of the 2013 Phase IIa EA, the southern end of this alternative was further revised to take into consideration the updated 2060 high-erosion shoreline presented in Appendix D of the 2013 Phase IIa EA. The changed shoreline allowed the bridge to descend into Rodanthe in manner that reduced visual impacts. The 2010 design carried the 30-foot-high bridge (deck elevation) to the Rodanthe Historic District boundary to facilitate a future bridge extension once shoreline erosion reached the Refuge. A ramp to one side of the bridge was used to get traffic on and off the bridge. With the new design the bridge descended directly to grade just before the historic district boundary.*

*The changes made were refinements developed to reduce impacts and take into consideration changed conditions but these alternatives were not substantially changed in concept and as such do not represent new alternatives.*

NCDOT met the commitment found in the 2010 EA and referenced above by the commenter. As described in Section 2.5.1 of both Phase IIb EAs, NCDOT met with the Merger Team and agreed on the final detailed study alternatives specifically for both Phase IIa and IIb. Potential Phase IIa and IIb alternatives were first discussed with the Merger Team at their December 2011 meeting. Alternatives that were considered by the team to be carried to detailed study were listed as:

- Beach Nourishment
- Bridge On New Location (southern portion of Road North/Bridge South and All Bridge Alternatives)
- Bridge within Existing NC 12 Easement (Phase II of Phased Approach/Rodanthe Bridge Alternative)
- Bridge within Existing NC 12 Easement and Beach Nourishment (Phase II of Phased Approach/Rodanthe Nourishment Alternative).

A comparison of potential impacts was presented. A tentative agreement was reached that the Nourishment and Bridge within Existing NC 12 Easement and Beach Nourishment would not be detailed study alternatives. This tentative agreement was not finalized until October 12, 2012, as indicated by the signed concurrence form included in Appendix A of both Phase IIb EAs. Reasons these two alternatives were not pursued are included in the response to the next group of comments, which focus on nourishment as an alternative.

NCDOT also held public scoping workshops to discuss potential alternatives in December 2011. Public scoping workshop comments are included in Appendix B of both Phase IIb EAs beginning on page B-25. Responses to comments received are included in Appendix C of both Phase IIb EAs. The public scoping workshops made the public aware that NCDOT was beginning Phase IIb studies with the selection of detailed study alternatives. Both Phase IIb EAs described why some alternatives were not selected by the Merger team for detailed study. In the case of the decision of detailed study alternatives, the Merger Team's concurrence occurred after the public scoping workshop and took public comment into consideration.

The Revised Phase IIb EA was the outcome of an on-going Phase IIb reassessment and decision-making process that began in 2011. The Revised Phase IIb EA did not reflect the outcome of a new reassessment or decision-making process.

**Comment: The change in the 2060 projected shoreline and the 2014 emergency beach nourishment project constitute significant new circumstances and information that require an SEIS.** Not only does NCDOT and FHWA's refusal to reassess beach nourishment and other alternatives conflict with prior assurances provided in the 2010 EA, but it also violates NEPA's requirement that an agency prepare an SEIS to "[r]igorously explore and objectively evaluate all reasonable alternatives" in light of "significant new circumstances or information relevant to environmental concerns and

bearing on the proposed action or its impacts." 40 C.F.R. § 1502. 14(a); 40 C.F.R. § 1502.9(c)(1)(ii).

The circumstances underlying the analysis of beach nourishment as an alternative in the FEIS have changed dramatically over the past several years, thus rendering the FEIS obsolete. First, "the erosion in the Rodanthe area through 2060 is now forecast to be less than was forecast for the 2008 FEIS and 2010 EA." 2013 EA at 2-11. This indicates a flaw in one of the fundamental premises underlying the agencies' alternatives analysis and suggests that the extent of required beach nourishment may be much less than previously estimated. Because new information has shed light on the fact that the FEIS was based on an erroneous estimate of future shoreline erosion, NCDOT and FHWA must prepare an SEIS in which alternatives are evaluated in light of this new information.

Additionally, the 2014 emergency beach nourishment project at the Rodanthe S Curves Hot Spot (which lies within the corridor contemplated by the instant Phase IIb proposal) generated new data in light of which beach nourishment should be reevaluated as an alternative to the proposed bridges. One of NCDOT and FHWA's primary stated reasons for eliminating beach nourishment as an alternative for detailed study is "uncertainties related to the availability of a suitable sand source .... " 2016 EA at F-20. By investigating sand sources for the 2014 beach nourishment project, the U.S. Army Corps of Engineers "identified sand sources within Wimble Shoals" that were "compatible with the native beach sand in the project area." 2016 REA at 2-16. By clarifying the uncertainties surrounding sand sources, this new information nullified a primary reason for eliminating beach nourishment as a long-term alternative. Additionally, the successful 2014 beach nourishment project provided site-specific data points regarding the efficacy and cost of beach nourishment and is therefore integral to any meaningful analysis of beach nourishment as a long-term solution.

Of particular note, the Corps of Engineers concluded that the 2014 beach nourishment project "would have no significant impacts" on the environment. 2016 EA at 2-16. Given that the bridge alternatives entail significant environmental impacts, this raises serious questions as to why beach nourishment has not been reevaluated. Despite the fact that "[t]he largest amount of commenters preferred beach nourishment instead of a bridge project," 2016 EA at F-3, NCDOT continues to summarily reject this approach by simply stating that it has already been eliminated as a detailed study alternative. Because of the new circumstances and information generated by the reduction in the anticipated erosion area and the 2014 nourishment project, beach nourishment and other alternatives should be re-assessed in a revised Environmental Impact Statement, not as part of a predetermined Environmental Assessment.

In addition to NEPA's legal requirements, practical utility also warrants a detailed study of beach nourishment as a long-term solution. Even after factoring in the need to perform nourishment on an ongoing basis, beach nourishment was still "the least costly

of the alternatives assessed in the 2008 FEIS." 2016 EA at F-19. In light of the reduction in the projected erosion area, beach nourishment would likely be even less costly than estimated in the FEIS. The proposed Pamlico Sound bridge, on the other hand, is estimated to cost between \$179 million and \$198 million. 2016 EA at 3-7. By prematurely eliminating beach nourishment as an alternative, NCDOT and FHWA are on a path that would waste millions of taxpayer dollars and deplete funds that could be used for more pressing matters. It commits the state and its taxpayers to hundreds of millions of dollars to address one small, 2.4-mile section of Route 12 when the next big storm could threaten other parts of the Outer Banks shoreline. In addition to being more cost effective than a bridge, beach nourishment also provides flexibility in terms of the timing and nature of construction and expenditures, and minimizes the obstruction of views, noise, recreational impairments, property condemnation, and property value diminution.

*Response: The change in the 2060 high-erosion line, the possibility that less sand might be required to carry out a long-term nourishment program, and the outcome of 2014 single round of nourishment do not require revisiting the decision in 2012 not to assess in detail either the Nourishment Alternative or the Bridge within Existing NC 12 Easement and Beach Nourishment Alternative in the Phase IIb environmental documentation.*

*Nourishment, all or in part, remains an unreasonable alternative for the following reasons:*

- 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). Northern Rodanthe and the southern part of the Refuge are at high risk area for a breach (see Figure 3 of the Revised Phase IIb EA). Geologically, the depth of sand to more stable ground containing organics (decayed plant material) in this area is greater than some other parts of Hatteras Island. Deeper sand can result in deeper scour on the island when a storm surge passes over the island, which can create a breach. The Pea Island breach area is also an area more susceptible to breaching. Portions of the project area susceptible to breaching, as well as "hot spots" where shoreline change has the most effect on NC 12, are shown in Figure 1 of the Revised Phase IIb EA. This information came from Dr. Stan Riggs, coastal geologist and Professor Emeritus at East Carolina University.*
- Carrying out a regular nourishment and dune-building (to keep overwash off the road) program would not ensure that a severe storm would not break down a part of the dune and overwash would cover NC 12 with sand or damage the pavement. NCDOT and the Hatteras Island community have been fortunate that storms since the completion of the 2014 emergency nourishment project have not breached the dunes.*

- *NC 12 closures that result from storms create economic losses for homes and businesses serving tourists on all of Hatteras Island, as well as Ocracoke Island. Such closures also impact the permanent population in terms of access to work, shopping, doctors and the hospital, and off-island school activities. Thus, NCDOT decided to minimize the opportunity for this economic impact to occur by defining reasonable long-term solutions for parts of NC 12 threatened by shoreline erosion or breaching as ones where the corrected portion of NC 12 is unlikely to be susceptible to sand overwash or damage during storms. In the Rodanthe area, not building a bridge would leave NC 12 susceptible to sand overwash or damage during storms for the reasons noted in the first two bullets. A bridge is needed to have the desired positive economic benefit for all of Hatteras Island.*
- *Nourishment would not allow natural island processes to occur in the Refuge, and, based on the opinions of US Fish and Wildlife Service (USFWS) representatives, a long-term nourishment program is not likely to be found compatible with the Refuge's mission and purpose. The NPS said that they are responsible for the intertidal zone and that they usually do not allow beach nourishment in their parks in other parts of the country, with few exceptions. NPS said that their policy would likely result in an objection to a beach nourishment alternative. Any nourishment program to protect NC 12 in Rodanthe also would affect beaches under the jurisdiction of both USFWS and NPS.*
- *It 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 2060 high-erosion shoreline is used to identify road locations potentially vulnerable because of erosion. The position of the 2060 high-erosion shoreline takes into account both the erosion rate and an estimate of the uncertainty in the rate. Uncertainty in the projection of the shoreline is associated with the number of historical shoreline positions used to determine the rate. The shift seaward in the 2060 high-erosion shoreline forecast from the initial 2005 forecast primarily reflects a reduction in the uncertainty associated with the prediction because of the additional 10 years of annual shorelines included in the 2015 forecast.*

*Even though incorporation of recent shoreline trends into shoreline modeling has resulted in a 2060 high-erosion shoreline in Rodanthe that is seaward of the one mapped in the FEIS, the Phase IIb area is still considered vulnerable to damage because of long term erosion, as well as breaching. The change in forecast position has not substantially changed the identification of that section as vulnerable road.*

*Erosion rates have decreased with the inclusion of 10 additional years of data; however, they remain high in the Rodanthe area compared to the rest of Hatteras Island. The FEIS indicated that the erosion rate in the northern Rodanthe area was an average of*

11 feet per year. As of December 2015, the rate is now an average of 9 feet per year in the northern Rodanthe area (note that within this section, a stretch of approximately 1 mile remains at approximately 11 feet per year). The volume of sand required in a nourishment project may be less than originally estimated because of the reduced average erosion rate; however, the nourishment alternative's design would still need to consider the highest rates in the project area.

- The Corps of Engineers did say that the 2014 emergency nourishment project "would have no significant impacts" on the environment. In addition, the Refuge, the NC Division of Coastal Management, and others issued permits allowing nourishment to occur, including the use of sand bags as dunes. This conclusion could be reached and these actions could occur because it was a one-time program that was done in response to a Governor-declared State of Emergency following Hurricane Sandy and subsequent nor'easters. In these situations, the appropriate agencies are able to allow nourishment as a one-time emergency response action. These agencies would not consider a 50-year beach nourishment program an emergency action, nor are the use of sand bags on the coast allowed on a permanent basis.
- The short-term nourishment project cost \$20.3 million. This emergency nourishment project was designed by the USACE to last approximately three years and is on track to last between three and four years, depending on storm events. If it or a similar program were repeated every four years at the same cost (12.5 times), the cost of 50 years of nourishment would be approximately \$254 million. The Selected Alternative is estimated to cost \$179 to \$198 million. The Nourishment Alternative assessed in the 2008 FEIS also assumed nourishment would need to be repeated every four years. Associated dunes to keep sand off of NC 12 would need to be rebuilt every 12 years.
- The Nourishment Alternative would require a suitable sand source over the project's estimated 50-year life. Both the USFWS and NCDCM have specific requirements on the characteristics of the sand that can be used for nourishment. Sand used for beach nourishment must be similar in quality and grain size to sand in the area being nourished. As said in Section 2.10.2.1 of the 2008 FEIS, the analysis of the Nourishment Alternative relied on a report by Boss and Hoffman (2000) that suggested that the material available in Wimble Shoals was on the order of 55.9 million cubic yards. A detailed assessment of the compatibility of the borrow material with the native beach material was not conducted; however, the grain size analysis performed on sediment samples collected from the vibracores appeared to indicate that the material would be suitable for nourishment.

A more recent sediment analysis presented in the report titled "Offshore Sand Resource Investigation, North Carolina Outer Banks: Ocracoke Inlet to Oregon Inlet" by Hanna and Nickerson (2009) identifies two potential borrow areas in Wimble Shoals, referred to as Area 2 and Area 3. Total volume estimates for both

areas ranged from 7.9 to 8.3 million cubic yards. Approximately 1.3 million cubic yards was dredged from a Wimble Shoals borrow area for the 2014 emergency project. This leaves approximately 6.6 to 7.0 million cubic yards available in the Wimble Shoals borrow areas based on the estimates made by Hanna and Nickerson. Thus, these more recent estimates indicate that there would not be sufficient material available to conduct a 50-year nourishment program from this source if the volume required at each replenishment interval were equal to the 2014 project.

Assuming that the estimated 6.6 to 7.0 million cubic yards of remaining sand is suitable for a beach nourishment option, then the remaining sand could potentially be used for a shorter 20-year nourishment program (based on the 1.3 million cubic yards used in the 2014 nourishment project). NCDOT does not consider this a reasonable alternative for this long-term project because of the other concerns with a nourishment alternative presented in this list. However, the implementation of the Selected Alternative does not prohibit any other entity from pursuing a shorter-term beach nourishment program in this location.

The 2008 FEIS describes a Bridge within Existing NC 12 Easement and Beach Nourishment Alternative in Section 2.10.2.4 (called Phased Approach/Rodanthe Nourishment Alternative). The total required beach nourishment length was approximately 6,000 feet. Nourishment would extend approximately 1,500 feet into the Refuge. The estimated amount of sand needed for the Phased Approach/Rodanthe Nourishment Alternative was 19.6 million cubic yards over 50 years. Again, there would not be sufficient material available.

**Comment: An SEIS is needed to assess reasonably foreseeable effects that were disregarded in prior NEPA documents.** NEPA was designed to ensure that impact analysis "focus[es] on reasonably foreseeable impacts." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 356 (1989). The NEPA documents in the instant matter fail to consider a number of reasonably foreseeable socioeconomic impacts, as required by 40 C.F.R. § 1508.14 when, as here, "economic or social and natural or physical environmental effects are interrelated." For example, none of the NEPA documents on record have assessed the impact that these alternatives would have on property values in the Rodanthe area. While the 2013 and 2016 EAs mention several adverse impacts of the sound bridge, such as obstruction of views and the impairment of kite boarding and windsurfing, the environmental assessments fail to tie these discrete impacts into a holistic analysis of the effects on the human environment that are likely to result.

Many of the houses and businesses in and around Rodanthe depend on tourism as a source of income. Tourism, in turn, is driven largely by the fact that Rodanthe (i) offers a kiteboarding and windsurfing venue that is widely considered to be one of the world's finest, and (ii) is one of the few places in America where one can witness both an unobstructed sunrise and sunset by merely walking a few blocks. The Bridge on New Location would fundamentally disrupt windsports and views on Pamlico Sound. As a



result, rental incomes and property values would be adversely affected. A local water sports business, Kite12.com, also would be adversely impacted by the Bridge on New Location, notwithstanding the 2016 EA's erroneous assertion that "[t]here are no businesses serving these types of activities along the shoreline in the area affected." 2016 EA at 4-32.

Reduced business and rental income, diminished property values, and the condemnation of certain properties would, in turn, foreseeably contribute to a reduction in local tax revenue. Thus, the adverse effects of the bridge could have severe socioeconomic impacts on the community of Rodanthe, none of which are adequately evaluated in the NEPA documents prepared to date.

***Response:** FHWA has determined that the modifications and changes assessed in the Revised Phase IIb EA do not result in any new, significant impacts not previously disclosed; therefore, a Supplemental FEIS is not required.*

*Economic Impact. The potential for three types of economic impacts were considered during impact assessments included in the 2008 FEIS and subsequent EAs. Impacts to local residents and businesses was specifically identified by the commenter. The three types are as follows:*

- 1. Impact of NC 12 Closures. NC 12 closures that result from storms create economic losses for homes and businesses serving tourists on all of Hatteras Island, as well as Ocracoke Island. Such closures also impact the permanent population in terms of access to work, shopping, doctors and the hospital, and off-island school activities. Thus, NCDOT decided to minimize the opportunity for this economic impact to occur by defining reasonable long-term solutions for parts of NC 12 threatened by shoreline erosion or breaching as ones where the corrected portion of NC 12 is unlikely to be susceptible to sand overwash or damage during storms. In the Rodanthe area, not building a bridge would leave NC 12 susceptible to sand overwash or damage during storms. A bridge is needed to have the desired positive economic benefit for all of Hatteras Island.*
- 2. Impacts to the Dare County Tourism. This type of economic impact was first addressed by the decision described in item 1. Secondly, it was addressed in terms of loss of access to recreation opportunities. An economic impact assessment for this type of impact was done in the 2008 FEIS for bypassing the Refuge completely. It is presented in Section 4.1.5 of the 2008 FEIS. It concluded that the economic impact to Dare County from loss of tourism would not be great because for most recreation activities, there are alternative sites to conduct the activity within the county. Thus, the lack of access in one location would mean that people likely would conduct their preferred activity elsewhere in Dare County instead of choosing to visit another coastal recreation area. The findings of this study were considered applicable to recreation impacts in Rodanthe for both a bridge in Pamlico Sound and a bridge in*

*the existing NC 12 easement that would ultimately affect recreation in the Atlantic Ocean. This is discussed in Section 4.2.4.2 of the Revised Phase IIb EA. The Rodanthe area has important water recreation features on both sides of the island. A bridge within the existing NC 12 easement would affect those on the Atlantic Ocean and a bridge in the Pamlico Sound would affect those in Pamlico Sound. In terms of this impact one alternative does not have an advantage over the other and in both cases there are other parts of Pamlico Sound and the Atlantic Ocean shore where these activities can occur in Dare County. Thus, the economic impact of changed recreation access to Dare County tourism likely would not be notable and the impact that would occur would be similar for any of the detailed study alternatives.*

- 3. Impacts to Local Residents and Businesses. It was found those displaced could be relocated elsewhere on Hatteras Island. With required relocation assistance, there would be minimal economic impact from displacement with the possible exception of a relocation of the Liberty Service Station/Island Convenience Store, which would only occur with the Bridge within Existing NC 12 Easement Alternative. As indicated in Section 4.2.1 of the revised Phase IIb EA: “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.”*

*In terms of impacts to those not displaced, it was assumed that the economic impact would be directly related to the change in the setting of individual properties with each alternative. In other words, the bridge alternative with the greatest community impacts would have the greater economic impact, including property values. NCDOT concluded that the Bridge within Existing NC 12 Easement Alternative would have the greater community impact. With the Bridge within Existing NC 12 Easement Alternative, a 30-foot high bridge (deck elevation) would be in the immediate views of over 50 residential and business structures that line NC 12. Views from homes would be blocked at the second or third story levels. From the ground, the bridge would be a dominating presence in front of these homes and businesses. As shown in Figure 11 of the Revised Phase IIb EA, where the bridge is in the sound, the distance from the bridge to soundside would range from 460 to 2,350 feet. The bridge would not reach its full height until it is in the sound. The bridge would range from 12 to 19 feet high as it passes the two homes near the bridge, 20 and 90 feet away, respectively. Once, it turns north from Rodanthe, the 2014B Bridge on New Location Alternative would be approximately 1,400 feet from the shoreline and the homes that line the shoreline. The Bridge within Existing NC 12 Easement would be 1,400 feet away or less from all of the homes in northern Rodanthe, and the homes along NC 12 would be 65 to 230 feet from the bridge deck.*

*Businesses Serving Water Sports Activities. The statement on page 4-32 of the EA that there are no businesses serving water sports activities along the shoreline in the area affected is correct. No local water sports businesses own frontage on the part of Pamlico Sound affected by the Selected Alternative used for launching water sports craft.*

*The Payment of Compensation in Cases of Diminution in Property Value.* Community and economic impacts were evaluated as required by NEPA. NCDOT recognizes that in any project of this magnitude and significance to the traveling public, there may be assertions by a select group of property owners of diminished property values and claims of other tangible and intangible economic, visual, or aesthetic impacts. NCDOT has completed its NEPA assessments in accordance with relevant guidance and intends to work diligently to minimize, reduce and eliminate impacts associated with the project. However, NEPA does not provide a legal mechanism for payment of compensation in cases of diminution in property value.

**Comment: Conclusion.** NCDOT and FHWA's identification of the Bridge on New Location as the preferred alternative in the 2016 EA is an unlawfully predetermined act. Additionally, the agencies must issue an SEIS due to substantial changes in the proposed action and the new circumstances and information generated by the altered shoreline projections and the 2014 beach nourishment project.

*Response:* NCDOT disagrees with the commenter's conclusion for the reasons presented in the responses to the commenter's detail comments above.

### **C.3.2 Southern Environmental Law Center**

**Comment:** SELC supports NCDOT's selection of the Bridge on New Location Alternative.

*Response:* The commenter's support for the Bridge on New Location Alternative is noted.

**Comment:** On June 15, 2015, the National Wildlife Refuge Association and Defenders of Wildlife (collectively "the Conservation Groups"), represented by SELC, reached a settlement with NCDOT, FHWA, and the North Carolina Division of Coastal Management. The settlement resolved two lawsuits brought by the Conservation Groups challenging the legality of State and federal environmental reviews of the Bonner Bridge Replacement. Pursuant to the settlement agreement, NCDOT committed to "identify Phase IIb Bridge on New Location as its preferred alternative and seek Merger Team Concurrence Point 3 ... on Phase IIb Bridge on New Location Alternative area .... " Subsequently, "if the Phase IIb Bridge on New Location Alternative [was] determined to be the least environmentally damaging practicable alternative ("LEDPA") and [became] the Selected Alternative," the Conservation Groups "covenant[ed] not to sue the State or the United States including any agency, official or employee as to any claim based on, arising out of or regarding, in whole or in part, the NEP A and Section 4f documents issued for the Phase IIb Bridge on New Location Alternative, or any permit, approval or any other decision regarding the Phase IIb Bridge on New Location Alternative. "

We appreciate that NCDOT has thus far carried out its commitments pursuant to the settlement agreement. We believe that, among the detailed study alternatives, the Bridge on New Location Alternative is the best option both for the environment and for ensuring safe, reliable access to Hatteras Island. As set forth in the settlement agreement, SELC will not challenge the validity of the Environmental Assessment if the agencies move ahead with the Bridge on New Location Alternative as the Selected Alternative for Phase IIb.

*Response: The commenter's position is noted.*

# *Appendix D*

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## **Agency Correspondence**





**North Carolina Department of Natural and Cultural Resources**  
**State Historic Preservation Office**

Ramona M. Bartos, Administrator

Governor Pat McCrory  
Secretary Susan Kluttz

Office of Archives and History  
Deputy Secretary Kevin Cherry

October 27, 2016

**MEMORANDUM**

**TO:** Matt Wilkerson  
Office of Human Environment  
NCDOT Division of Highways

**FROM:** Ramona M. Bartos

*Re: for Ramona M. Bartos*

**SUBJECT:** Archaeological Report: *Underwater Archaeological Survey and Diver Assessment/Evaluation for Future Extension Concept/2014B, Revised Bridge on New Location, Bonner Bridge Project, Dare County, North Carolina, STIP B-2500, ER 90-8304*

We have reviewed the archaeological report produced by Pan-American Consultants, Inc. for the NC Department of Transportation's "Future Extension Concept/2014B" of the Bonner Bridge replacement project. During the course of the remote sensing survey, no new targets were found within the Future Extension Concept alignment with characteristics suggestive of historically significant submerged cultural resources. One previously recorded archaeological shipwreck site within the study area, PAS0001, "Pappy's Lane Wreck" was investigated during the course of the survey.

Pan-American Consultants, Inc. recommended the Pappy's Lane Wreck as eligible for listing on the National Register of Historic Places and has indicated that avoidance of the resource will be accomplished by a planned spanning of the wreck location. We concur with this recommendation. Based on the magnetic contour map (Fig. 4-07 of the report) we recommend at least a 100-meter buffer area surrounding the visible portions of the wreck to be established where no disturbance from bridge structure installation or work vessel mooring will take place. If this condition can be met, we have no problem with the project as planned.

Pan-American Consultants, Inc. has recommended no additional archaeological investigation on any other targets within this Future Extension Concept alignment. We concur with this recommendation.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579 or [environmental.review@ncdcr.gov](mailto:environmental.review@ncdcr.gov). In all future communication concerning this project, please cite the above referenced tracking number.

cc: Panamerican Consultants, Inc.





## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Raleigh Field Office  
Post Office Box 33726  
Raleigh, North Carolina 27636-3726

October 26, 2016

John F. Sullivan, III, P.E.  
Federal Highway Administration  
310 New Bern Avenue, Suite 410  
Raleigh, North Carolina 27601

Dear Mr. Sullivan:

This letter is in response to your letter of October 6, 2016 which provided the U.S. Fish and Wildlife Service (Service) with information regarding the NC 12-Rodanthe Breach Long-Term Improvements: Bonner Bridge Replacement Project Phase IIb in Dare County, North Carolina (TIP No. B-2500B). Your letter included a Threatened and Endangered Species Technical Memorandum dated October 2016. The following comments are provided in accordance with Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

As the result of a programmatic formal Section 7 consultation, the Service issued a Biological Opinion on July 10, 2008 for the overall B-2500 project. Since that time, the Service has agreed to several minor revisions regarding the Terms and Conditions of the Incidental Take Statement. After the rufa red knot (*Calidris canutus rufa*) was federally listed as a threatened species, additional formal consultation resulted in the Service issuing an addendum to the Biological Opinion on February 9, 2015. As a requirement of the programmatic consultation, and as additional design information is developed for subsequent phases of the project, the Federal Highway Administration must submit updated design information to the Service in order to assess whether the incidental take of federally listed species will exceed the amount previously authorized in the Biological Opinion. In addition, the Service is to determine whether the existing Terms and Conditions of the Biological Opinion are appropriate.

The submitted Threatened and Endangered Species Technical Memorandum updates the effects analysis for all species listed in Dare County, North Carolina. For those species previously addressed which are under the purview of the Service, we find that the biological conclusions remain unchanged from previous consultation. We also find that the Terms and Conditions from the Biological Opinion and Addendum to still be appropriate. The northern long-eared bat (*Myotis septentrionalis*) was listed as federally threatened in 2015, but was addressed separately in a programmatic formal Section 7 consultation. Based on the submitted information and other available information, the Service believes that the previously authorized incidental take of federally listed species will not be exceeded by Phase IIb or previous phases of B-2500.

We do acknowledge a change in the action area for the Section 7 consultation. The action area is expanded westward into the Pamlico Sound to accommodate the selection of alternative 2014B

Revised Bridge on New Location as the Least Environmentally Damaging Practical Alternative for B-2500B.

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,

*for*   
Pete Benjamin  
Field Supervisor

Electronic copy:

Tracey Wheeler, USACE, Washington, NC  
Travis Wilson, NCWRC, Creedmoor, NC  
Ron Lucas, FHWA, Raleigh, NC  
Cynthia Van Der Wiele, Research Triangle Park, NC  
Kathy Herring, NCDOT, Raleigh, NC



**UNITED STATES DEPARTMENT OF COMMERCE**

National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
Southeast Regional Office  
263 13th Avenue South  
St. Petersburg, Florida 33701-5505  
<http://sero.nmfs.noaa.gov>

F/SER46:DR

John F. Sullivan, III, P.E.  
Division Administrator  
North Carolina Division  
U.S. Department of Transportation  
Federal Highway Administration  
310 New Bern Avenue, Suite 410  
Raleigh, North Carolina 27601-1441

**DEC 13 2016**

Dear Mr. Sullivan:

This letter responds to your request for consultation with us, the National Marine Fisheries Service (NMFS), pursuant to Section 7 of the Endangered Species Act (ESA) for the following action.

SER Number	Project Type
SER-2016-18311	N.C. 12 Rodanthe Breach Bridge (Phase IIb of the Bonner Bridge Replacement Project)

**Consultation History**

NMFS consulted on earlier phases of the N.C. 12 Bonner Bridge Replacement Project in 2008 and 2013 (SER-2008-03396 and SER 2013-11110). These consultations focused on the replacement of the N.C. 12 Herbert C. Bonner Bridge over Oregon Inlet. The present consultation concerns the construction of a new bridge within Pamlico Sound that will extend from Pea Island National Wildlife Refuge (1.8 miles north of the refuge border) to Rodanthe. Of the alternative alignments shown in the map below, the “2014B Revised Bridge on New Location” has been selected as the Preferred Alternative as it was considered the Least Environmentally Damaging Practicable Alternative by the project’s NEPA/Section 404 Merger Team. This consultation will be based on the construction of the selected Preferred Alternative which will hereafter be referred to as the N.C. 12 Rodanthe Breach Bridge. We received your letter requesting consultation and a Threatened and Endangered Species Technical Memorandum on October 7, 2016. We requested additional information on November 9, 2016. We received a response on November 10, 2016, and sent follow-up questions on November 18, 2016. We received a response on November 21, 2016. On December 2, 2016, we requested a commitment to use a noise reduction measures if impact hammering of 54-inch (in) diameter cylindrical concrete piles will be required. We received a final response indicating a commitment for the use of noise reduction measures on December 6, 2016, and we initiated consultation that day.



**Project Location**

Address	Latitude/Longitude	Water body
N.C. 12 Rodanthe Breach Bridge, Rodanthe, Hatteras Island, Dare County, North Carolina	35.614538°N, 75.474947°W (North American Datum 1983)	Pamlico Sound

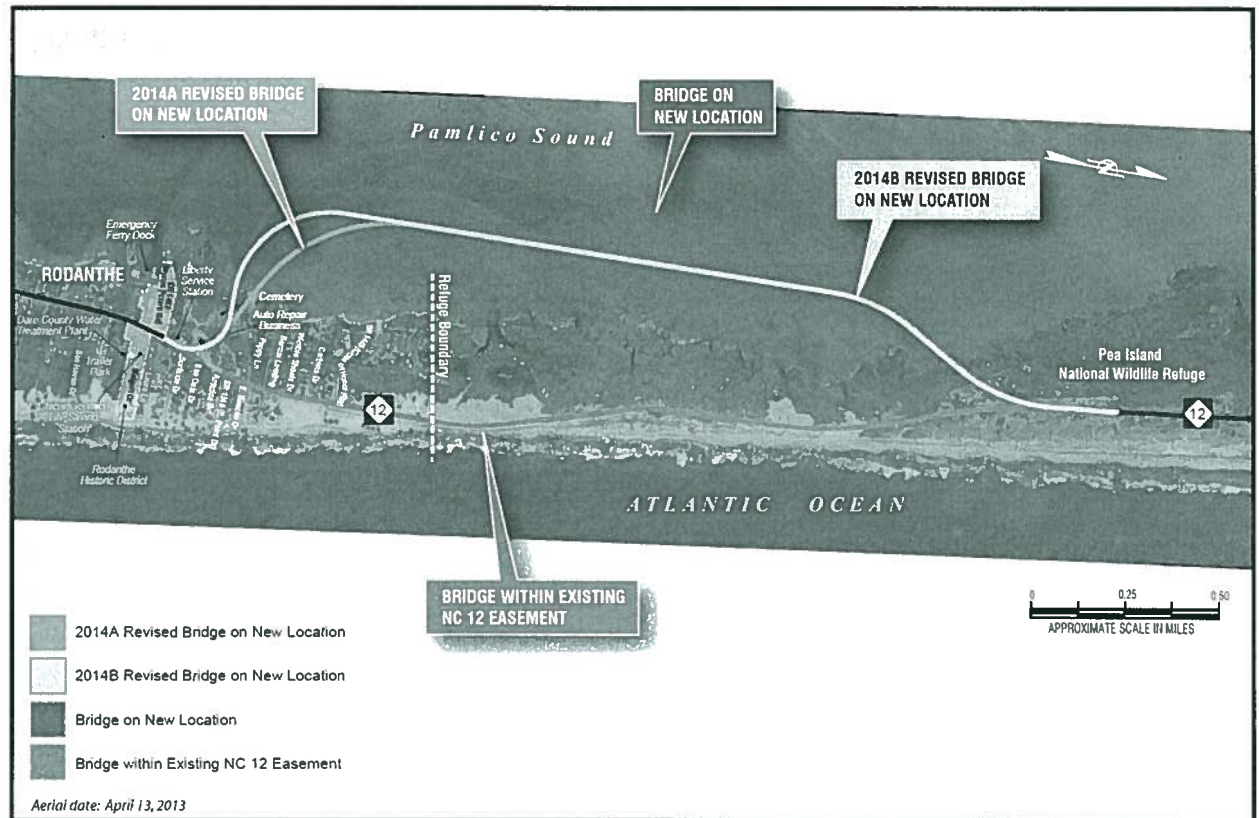


Image of the project location and surrounding area showing the yellow line, “2014B Revised Bridge on New Location” as the Preferred Alternative (Provided by FHWA)

*Existing Site Conditions*

The new N.C. 12 Rodanthe Breach Bridge will extend into Pamlico Sound from Pea Island National Wildlife Refuge (1.8 miles north of the refuge border) to Rodanthe. Pamlico Sound is an estuarine waterbody. Water depths in the project area range between -0.5 and -2.0 feet (ft) at Mean Lower Low Water, and between -1.5 and -3.0 ft at Mean Higher High Water. Bottom sediments in Pamlico Sound primarily consist of sand with some areas of mud also present. The Preferred Alignment was designed to avoid nearby seagrasses in the project area.

**Project Description**

The Federal Highway Administration (FHWA) and the North Carolina Department of Transportation (NCDOT) propose the construction of a new 2-lane concrete fixed span bridge. The new bridge’s approximate length (based on the preferred alignment alternative) would be 2.4 miles. The bridge would extend out approximately 1,400 ft west of Pamlico Sound’s eastern shoreline at its farthest point. To put this in perspective, the width of Pamlico Sound at the project site (western shoreline to eastern shoreline) is about 78,500 ft across. No fishing from

the new bridge will be allowed. No dredging will be allowed due to the proximity of seagrass beds to the project area.

The following design and construction methods are based on “worst case” scenarios considered most likely by FHWA and NCDOT. The new bridge’s true final design is not known at this point and will not be known until a design/construction contractor has been selected. FHWA and NCDOT are aware that any changes to the bridge design that deviate from the specifications described below, revealing potential effects to listed species or critical habitat that were not previously considered, will require reinitiation of Section 7 consultation with NMFS.

In-water or over-water work will be accomplished from temporary work bridges, as barges cannot be used due to the project area’s shallow water depths (generally -3 ft or less). However, small shallow-draft work boats may be used. As with similar bridge and transportation projects, it is expected that heavy equipment such as cranes, backhoes, and dump trucks will be used to accomplish construction activities. It is estimated that construction of the new bridge will take 3 years to complete with 30 months of that time being in-water work.

It is anticipated that the construction of the new bridge will require the installation of either approximately 575 30-in by 30-in square concrete piles or 260 54-in diameter cylindrical concrete piles or some combination of the 2 pile types. Several different installation scenarios are possible for the 2 pile types.

Scenarios for the 54-inch pile include: (1) jetting the pile inside a steel casing to within 10 ft of the ultimate tip elevation, followed by impact driving through the last 10 feet; (2) excavating material out of the casing for the first 55-60 feet, and then jetting to within 10 feet of the ultimate tip elevation followed by impact driving through the last 10 feet; and (3) excavating material out of the casing for the first 55-60 feet, then impact driving the rest of the way to the ultimate tip elevation.

Scenarios for the 30-inch pile include: (1) jetting the pile to within 10 ft of the ultimate tip elevation (no casing), followed by impact driving through the last 10 feet; (2) jetting the pile inside a steel casing to within 10 ft of the ultimate tip elevation, followed by impact driving through the last 10 feet; (3) excavating material out of the casing for the first 55-60 feet, and then jetting to within 10 feet of the ultimate tip elevation followed by impact driving through the last 10 feet; and (4) excavating material out of the casing for the first 55-60 feet, then impact driving the rest of the way to the ultimate tip elevation.

If the piles are brought to within 10 ft of the ultimate tip elevation (through jetting or excavation and jetting) before impact hammering to complete the installation, then 2,000 impact hammer strikes per day are expected. If the casings are excavated for the first 55-60 ft before the piles are impact hammered to complete the installation, then 8,000 impact hammer strikes per day are expected. If steel casings are used as part of the installation process, they will be set in place using a vibratory hammer and it is expected that each casing will require 15 minutes of vibratory hammering to install. The casings will be pulled out of the substrate before impact hammering proceeds or just after the first few feet of impact driving has occurred. The completion of in-water pile installations will take approximately 145 days.

The construction of the temporary work bridges will require the installation of about 1,000 steel pipe piles (18-in to 24-in diameter) by vibratory hammer. It is estimated that a maximum of 4 pipe piles may be installed per day and each pipe pile will require 5 minutes of vibratory driving to install (a total of 20 minutes of vibratory driving each day). These temporary pipe piles will only remain in place for 3-6 months at any 1 location.

**Pile Installation**

Pile type	Number of Piles	Installation Method	Confined Space or Open Water
Square concrete piles (30-in by 30-in)	575	Jetting/Excavation/Impact hammer (in some combination – see above)	Open water
Cylindrical concrete piles (54-in diameter)	260	Jetting/Excavation/Impact hammer (in some combination – see above)	Open water
Steel pipe piles (18-in to 24-in diameter)	1,000	Vibratory hammer	Open water

*Construction Conditions*

The applicant will ensure the use of NCDOT’s Best Management Practices for soil and erosion control, and develop a spill prevention and pollution control plan to minimize impacts to wetlands, seagrasses, and the waters of Pamlico Sound. Turbidity curtains will be deployed around each bridge bent as the substructures are constructed. A “ramp-up” method will be used to initiate impact driving of piles. The “ramp-up” method involves slowly increasing the power of the impact hammer, and the noise it produces, over a period of time (between 5 and 20 minutes) to give marine species an opportunity to leave the work area. The applicant has agreed to implement NMFS’s *Sea Turtle and Smalltooth Sawfish Construction Conditions*, dated March 23, 2006, and apply those conditions to sturgeon species as well. The applicant has agreed to a year-round restriction on in-water pile driving between 9:00 PM and 8:00 AM, so that no in-water pile driving occurs during at least 11 hours per night. The applicant has also agreed to require the use of noise reduction measures (either bubble curtains or isolation casings) during the impact driving of 54-in diameter cylindrical piles (if they are selected).

**Effects Determination(s) for Species the Action Agency or NMFS Believes May Be Affected by the Proposed Action**

Species	ESA Listing Status	Action Agency Effect Determination	NMFS Effect Determination
<b>Sea Turtles</b>			
Green (North and South Atlantic distinct population segment [DPS])	T	NLAA	NLAA
Kemp’s ridley	E	NLAA	NLAA
Leatherback	E	NLAA	NP

Species	ESA Listing Status	Action Agency Effect Determination	NMFS Effect Determination
Loggerhead (Northwest Atlantic Ocean DPSs)	T	NLAA	NLAA
Hawksbill	E	NLAA	NP
<b>Fish</b>			
Shortnose sturgeon	E	NLAA	NP
Atlantic sturgeon (Carolina DPS)	E	NLAA	NLAA
E = endangered; T = threatened; NLAA = may affect, not likely to adversely affect; NP = not present			

Among the five species of sea turtles that may occur in or near the project area, some sea turtle species are much more likely to be present in the project area than others. The loggerhead sea turtle is the most common species in the project area, and green and Kemp's ridley sea turtles also occur in the project area, though considerably less frequently. Leatherbacks and hawksbills are very unlikely to be present due to their foraging and life history characteristics. Leatherbacks are primarily pelagic feeders, foraging mostly on jellyfish in deeper, offshore waters, though they will occasionally follow their wind-driven prey closer inshore. Sponges, the preferred foraging item for hawksbills, are likely sparse in the vicinity of the new N.C. 12 Rodanthe Breach Bridge, so hawksbill presence is likely to be very rare. These species will not be considered further in this consultation. Shortnose sturgeon have been largely extirpated from North Carolina waters. NMFS believes shortnose sturgeon are unlikely to be present in the project area (S. Bolden, pers. comm. to NCDOT, November 19, 2007); this species will not be considered further in this consultation.

**Critical Habitat**

The project is not located in designated critical habitat, and there are no potential routes of effect to any designated critical habitat.

**Analysis of Potential Routes of Effects to Species**

Effects to Atlantic sturgeon and sea turtles include the risk of injury from direct impact by construction machinery and associated activities (e.g., barge and work boat movement, impact and vibratory hammer operations), which will be discountable due to the species' ability to move away from the project site if disturbed. The potential effects due to the noise from installing steel casings and piles are discussed separately below. The applicant's compliance with NMFS's *Sea Turtle and Smalltooth Sawfish Construction Conditions*, dated March 23, 2006, (also applied to Atlantic sturgeon) will provide an additional measure of protection by causing the construction activities to stop if sea turtles or sturgeon are spotted within 50 ft of operations.

As referenced above, sea turtles and sturgeon may avoid the project sites due to construction activities, and will also be physically excluded from active work areas by turbidity curtains or silt fences. Any impacts to these species from physical exclusion or avoidance of the project areas due to project activities will be insignificant, as there are numerous suitable alternative sites in the area that sea turtles and sturgeon could use for foraging or refuge, and any exclusion effects will be temporary.

In-water construction activities will result in temporary increases in turbidity that could affect water quality. Yet, these highly turbid areas will be contained within turbidity barriers or silt fences, and these barriers will not be removed until after turbidity levels decrease to ambient levels. Therefore, we anticipate any effects on listed species due to elevated turbidity will be insignificant.

Effects to Atlantic sturgeon and sea turtles as a result of noise created by the installation of steel casings, concrete piles and pipe piles (e.g., impact hammering of concrete piles and vibratory installation of casings or pipe piles) can physically injure animals in the affected areas or change animal behavior in the affected areas. Physical injurious effects can occur in 2 ways. First, effects can result from a single noise event's exceeding the threshold for direct physical injury to animals, and these constitute an immediate adverse effect on these animals. Second, effects can result from prolonged exposure to noise levels that exceed the daily cumulative exposure threshold for the animals, and these can constitute adverse effects, if animals are exposed to the noise levels for sufficient periods. Behavioral effects can be adverse if such effects interfere with migrating, feeding, resting, or reproducing, for example. All in-water noise levels discussed below are referenced to 1 micropascal. The NMFS-accepted noise thresholds for impact pile driving are 206 decibels (dB) for peak-pressure injury, 187 dB for cumulative sound exposure level (cSEL) injury, 150 dB root mean square (RMS) for behavioral disturbance of fishes, and 160 dB RMS for behavioral disturbance of sea turtles.<sup>1</sup> The NMFS-accepted noise thresholds for vibratory driving are the same as for impact driving with the exception of the cSEL injury threshold, which is 234 dB for vibratory driving.

Atlantic sturgeon and sea turtles may be affected by noise associated with the potential vibratory hammer installation of cylindrical steel casings into the estuary's bottom. Because no noise data exist for the vibratory installation of steel casings (6 ft in diameter or less), we used data on the vibratory installation of 6-ft-diameter steel pipe piles as a surrogate.<sup>2</sup> Based on our noise analysis, the vibratory installation of casings will not cause peak-pressure or cSEL injury to sea turtles or sturgeon. The peak-pressure noise level at the source (i.e., immediately next to active vibratory driving) will be approximately 198 dB, while the NMFS-accepted peak-pressure injury threshold is 206 dB. The maximum cSEL at the source will be approximately 215 dB, while the NMFS-accepted cSEL injury threshold is 234 dB. The applicant's compliance with NMFS's *Sea Turtle and Smalltooth Sawfish Construction Conditions*, dated March 23, 2006, (also applied to Atlantic sturgeon) will provide an additional measure of protection by causing the installation activities to stop if sea turtles or sturgeon are spotted within 50 ft of operations. Thus, it is extremely unlikely that sea turtles and sturgeon will be injured due to the vibratory installation of casings and the effect of such installation is discountable.

Based on our noise calculations, the vibratory installation of steel casings could cause behavioral disturbance effects at radii of 152 ft (46 meters [m]) from the source for sea turtles and 707 ft

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<sup>1</sup> NMFS 2014. Regional General Permit SAJ-82 (SAJ-2007-1590), Florida Keys, Monroe County, Florida.

<sup>2</sup> California Department of Transportation. 2009. Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish (with updated 2012 Compendium). Final. February (ICF 645.10). Prepared by ICF Jones & Stokes, Sacramento, CA and Illingworth & Rodkin, Inc., Petaluma, CA.



(215 m) from the source for Atlantic sturgeon. The 152-ft radius marks the point at which the RMS noise level drops below the NMFS-accepted RMS behavioral disturbance threshold of 160 dB for sea turtles, while the 707-ft radius marks the point at which the RMS noise level drops below the NMFS-accepted RMS behavioral disturbance threshold of 150 dB for sturgeon. If an individual chooses to remain within the behavioral disturbance zone, it could be exposed to behavioral noise effects during pile installation and alter its behavioral pattern. Yet, due to the mobility of sea turtles and sturgeon, we expect them to move away from noise disturbances to similar habitat outside of the behavioral disturbance zones and resume normal behaviors. In addition, these species will be able to resume normal activities during quiet periods between pile installations, and for at least 11 hours every night. Therefore, we anticipate any behavioral effects will be insignificant.

Any noise produced by jetting or excavating within the steel casings is expected to be well below the thresholds for injury or behavioral disturbance of sturgeon and sea turtles. Therefore, we believe that any effects due to these activities will be insignificant.

Atlantic sturgeon and sea turtles may be affected by noise associated with the vibratory hammer installation of steel pipe piles (up to 24-in diameter) into the estuary's bottom for the construction of temporary work bridges (as well as their later removal). Based on our noise analysis, the vibratory installation or removal of pipe piles will not cause peak-pressure or cSEL injury to sea turtles or sturgeon. The peak-pressure noise level at the source (i.e., immediately next to active vibratory driving) will be approximately 195 dB, while the NMFS-accepted peak-pressure injury threshold is 206 dB. The maximum cSEL at the source will be approximately 216 dB, while the NMFS-accepted cSEL injury threshold is 234 dB. The applicant's compliance with NMFS's *Sea Turtle and Smalltooth Sawfish Construction Conditions*, dated March 23, 2006, (also applied to Atlantic sturgeon) will provide an additional measure of protection by causing the installation activities to stop if sea turtles or sturgeon are spotted within 50 ft of operations. Thus, the risk of injury to sea turtles and Atlantic sturgeon from the vibratory installation or removal of 24-in-diameter pipe piles is extremely unlikely, and the effect of such activity is discountable.

Based on our noise calculations, the vibratory installation or removal of steel pipe piles could cause behavioral disturbance effects at radii of 152 ft (46 m) from the source for sea turtles and 707 ft (215 m) from the source for sturgeon. The 152-ft radius marks the point at which the RMS noise level drops below the NMFS-accepted RMS behavioral disturbance threshold of 160 dB for sea turtles, and the 707-ft radius marks the point at which the RMS noise level drops below the NMFS-accepted RMS behavioral disturbance threshold of 150 dB for sturgeon. If an individual chooses to remain within the behavioral disturbance zone, it could be exposed to behavioral noise effects during pile installation and alter its behavioral pattern. Due to the mobility of sea turtles and sturgeon, we expect them to move away from noise disturbances to similar habitat outside of the behavioral disturbance zones and resume normal behaviors. In addition, these species will be able to resume normal activities during quiet periods between pile installations, and for at least 11 hours every night. Therefore, we anticipate any behavioral effects will be insignificant.

Based on our noise calculations, the installation of 30-in by 30-in square concrete piles by impact hammer could cause peak-pressure injury to Atlantic sturgeon and sea turtles. Peak-pressure sound levels at the source would be 215 dB, while the NMFS-accepted peak-pressure noise injury threshold is 206 dB for sturgeon and turtles. Peak-pressure injury could occur if a sturgeon or sea turtle was within 13 ft (4 m) of the pile driving operations. The use of the “ramp-up” technique prior to full-force driving will provide sturgeon and turtles ample opportunity to leave the project area as noise levels increase and before the peak-pressure injury threshold is reached. Because we anticipate that sturgeon and turtles will move away from the project area during the “ramp-up” period, we believe that an animal’s suffering physical injury from peak-pressure noise exposure is extremely unlikely to occur. The applicant’s compliance with NMFS’s *Sea Turtle and Smalltooth Sawfish Construction Conditions*, dated March 23, 2006, (also applied to Atlantic sturgeon) will provide an additional measure of protection by causing the installation activities to stop if sea turtles or sturgeon are spotted within 50 ft of operations. There are adequate avenues for a sturgeon or sea turtle to leave or avoid the project area during pile-driving activities, and there is similar habitat nearby. Thus, we believe that the potential for peak-pressure injury effects is extremely unlikely and the effect of such activity is discountable. An animal’s movement away from the injurious impact zone is a behavioral response, with the same effects discussed below.

The maximum cSEL at the source will be approximately 224 dB, while the NMFS-accepted cSEL injury threshold is 187 dB. The cSEL of multiple pile strikes to 30-in by 30-in square concrete piles (8,000 strikes per day) over the course of a day may cause injury to sturgeon and sea turtles at a radius of up to 707 ft (215 m) from pile driving, if a sturgeon or turtle remained within this zone for a full day’s pile driving. Due to the mobility of sturgeon and turtles, we expect them to move away from noise disturbances. Because we anticipate that sturgeon and turtles will move away from the project area during the “ramp-up” period, we believe that an animal’s suffering physical injury from cSEL noise exposure is extremely unlikely to occur. The project has adequate avenues for a sturgeon or sea turtle to leave or avoid the project area during pile-driving activities, and there is similar habitat outside of the cSEL injury zone. Thus, we believe the risk of injury is extremely unlikely and the effect of such activity discountable. An animal’s movement away from the injurious impact zone is a behavioral response, with the same effects discussed below.

The impact hammer installation of 30-in by 30-in square concrete piles could cause behavioral disturbance effects at radii of 707 ft (215 m) from the source for sea turtles and 3,281 ft (1,000 m) from the source for Atlantic sturgeon. The 707-ft radius marks the point at which the RMS noise level drops below the NMFS-accepted RMS behavioral disturbance threshold of 160 dB for sea turtles, and the 3,281 ft radius marks the point at which the RMS noise level drops below the NMFS-accepted RMS behavioral disturbance threshold of 150 dB for sturgeon. If an individual chooses to remain within the behavioral disturbance zone, it could be exposed to behavioral noise effects during pile installation and alter its behavioral pattern. Due to the mobility of sea turtles and sturgeon, we expect them to move away from noise disturbances to similar habitat outside of the behavioral disturbance zones and resume normal behaviors. In addition, sturgeon and turtles will be able to resume normal activities during quiet periods between pile installations, and for at least 11 hours every night. Therefore, we anticipate any behavioral effects will be insignificant.

Based on our noise calculations, the installation of 54-in diameter cylindrical concrete piles by impact hammer (with the use of noise reduction measures) could cause peak-pressure injury to Atlantic sturgeon and sea turtles. Peak-pressure sound levels at the source would be 212 dB, while the NMFS-accepted peak-pressure noise injury threshold is 206 dB for sturgeon and turtles. Peak-pressure injury could occur if a sturgeon or sea turtle was within 8 ft (3 m) of the pile driving operations. The use of the “ramp-up” technique prior to full-force driving will provide sturgeon and turtles ample opportunity to leave the project area as noise levels increase and before the peak-pressure injury threshold is reached. Because we anticipate that sturgeon and turtles will move away from the project area during the “ramp-up” period, we believe that an animal’s suffering physical injury from peak-pressure noise exposure is extremely unlikely to occur. The applicant’s compliance with NMFS’s *Sea Turtle and Smalltooth Sawfish Construction Conditions*, dated March 23, 2006, (also applied to Atlantic sturgeon) will provide an additional measure of protection by causing the installation activities to stop if sea turtles or sturgeon are spotted within 50 ft of operations. There are adequate avenues for a sturgeon or sea turtle to leave or avoid the project area during pile-driving activities, and there is similar habitat nearby. Thus, we believe that the potential for peak-pressure injury effects is extremely unlikely and the effect of such activity is discountable. An animal’s movement away from the injurious impact zone is a behavioral response, with the same effects discussed below.

The maximum cSEL at the source will be approximately 223 dB, while the NMFS-accepted cSEL injury threshold is 187 dB. The cSEL of multiple pile strikes to 54-in diameter cylindrical concrete piles (8,000 strikes per day) over the course of a day may cause injury to sturgeon and sea turtles at a radius of up to 606 ft (185 m) from pile driving, if a sturgeon or turtle remained within this zone for a full day’s pile driving. Due to the mobility of sturgeon and turtles, we expect them to move away from noise disturbances. Because we anticipate that sturgeon and turtles will move away from the project area during the “ramp-up” period, we believe that an animal’s suffering physical injury from cSEL noise exposure is extremely unlikely to occur. The project has adequate avenues for a sturgeon or sea turtle to leave or avoid the project area during pile-driving activities, and there is similar habitat outside of the cSEL injury zone. Thus, we believe the risk of injury is extremely unlikely and the effect of such activity discountable. An animal’s movement away from the injurious impact zone is a behavioral response, with the same effects discussed below.

The impact hammer installation of 54-in diameter cylindrical concrete piles (with the use of noise reduction measures) could cause behavioral disturbance effects at radii of 606 ft (185 m) from the source for sea turtles and 2,814 ft (858 m) from the source for Atlantic sturgeon. The 606-ft radius marks the point at which the RMS noise level drops below the NMFS-accepted RMS behavioral disturbance threshold of 160 dB for sea turtles, and the 2,814 ft radius marks the point at which the RMS noise level drops below the NMFS-accepted RMS behavioral disturbance threshold of 150 dB for sturgeon. If an individual chooses to remain within the behavioral disturbance zone, it could be exposed to behavioral noise effects during pile installation and alter its behavioral pattern. Due to the mobility of sea turtles and sturgeon, we expect them to move away from noise disturbances to similar habitat outside of the behavioral disturbance zones and resume normal behaviors. In addition, sturgeon and turtles will be able to

resume normal activities during quiet periods between pile installations, and for at least 11 hours every night. Therefore, we anticipate any behavioral effects will be insignificant.

### **Conclusion**

Because all potential project effects to listed species were found to be discountable, insignificant, or beneficial, we conclude that the proposed action is not likely to adversely affect listed species under NMFS's purview. This concludes your consultation responsibilities under the ESA for species under NMFS's purview. Consultation must be reinitiated if a take occurs or new information reveals effects of the action not previously considered, or if the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat in a manner or to an extent not previously considered, or if a new species is listed or critical habitat designated that may be affected by the identified action. NMFS's findings on the project's potential effects are based on the project description in this response. Any changes to the proposed action may negate the findings of this consultation and may require reinitiation of consultation with NMFS.

We have enclosed additional relevant information for your review. We look forward to further cooperation with you on other projects to ensure the conservation of our threatened and endangered marine species and designated critical habitat. If you have any questions regarding this consultation, please contact Dr. Dave Rydene, Consultation Biologist, at (727) 824-5379, or by email at David.Rydene@noaa.gov.

Sincerely,



For  
Roy E. Crabtree, Ph.D.  
Regional Administrator

Enc.: 1. *Sea Turtle and Smalltooth Sawfish Construction Conditions* (Revised March 23, 2006)  
2. *PCTS Access and Additional Considerations for ESA Section 7 Consultations*  
(Revised March 10, 2015)

File: 1514-22.L.1

## **SEA TURTLE AND SMALLTOOTH SAWFISH CONSTRUCTION CONDITIONS**

The permittee shall comply with the following protected species construction conditions:

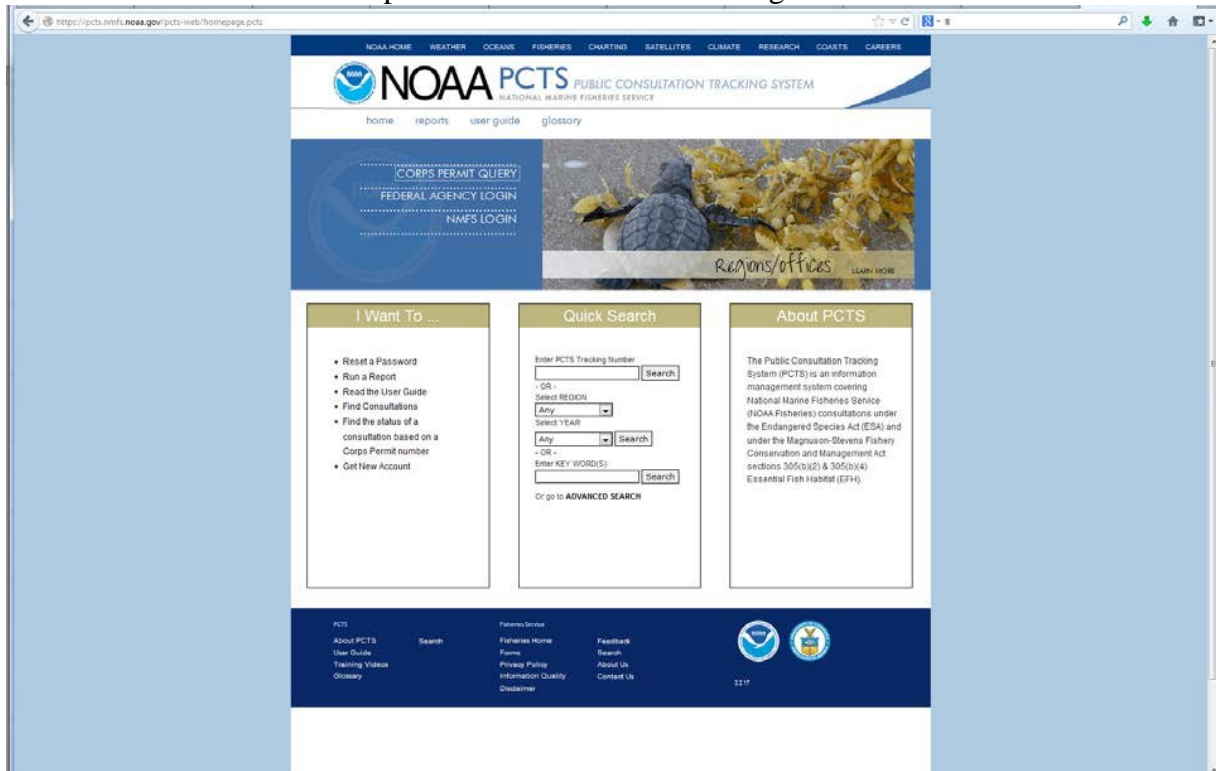
- a. The permittee shall instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with sea turtles and smalltooth sawfish. All construction personnel are responsible for observing water-related activities for the presence of these species.
- b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing sea turtles or smalltooth sawfish, which are protected under the Endangered Species Act of 1973.
- c. Siltation barriers shall be made of material in which a sea turtle or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block sea turtle or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the National Marine Fisheries Service's Protected Resources Division, St. Petersburg, Florida.
- d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.
- e. If a sea turtle or smalltooth sawfish is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a sea turtle or smalltooth sawfish. Operation of any mechanical construction equipment shall cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.
- f. Any collision with and/or injury to a sea turtle or smalltooth sawfish shall be reported immediately to the National Marine Fisheries Service's Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/rescue organization.
- g. Any special construction conditions, required of your specific project, outside these general conditions, if applicable, will be addressed in the primary consultation.

Revised: March 23, 2006

## PCTS Access and Additional Considerations for ESA Section 7 Consultations (Revised 03-10-2015)

Public Consultation Tracking System (PCTS) Guidance: PCTS is a Web-based query system at <https://pcts.nmfs.noaa.gov/> that allows all federal agencies (e.g., U.S. Army Corps of Engineers - USACE), project managers, permit applicants, consultants, and the general public to find the current status of NMFS's Endangered Species Act (ESA) and Essential Fish Habitat (EFH) consultations which are being conducted (or have been completed) pursuant to ESA Section 7 and the Magnuson-Stevens Fishery Conservation and Management Act's (MSA) Sections 305(b)2 and 305(b)(4). Basic information including access to documents is available to all.

The PCTS Home Page is shown below. For USACE-permitted projects, the easiest and quickest way to look up a project's status, or review completed ESA/EFH consultations, is to click on either the "Corps Permit Query" link (top left); or, below it, click the "Find the status of a consultation based on the Corps Permit number" link in the golden "I Want To..." window.



Then, from the "Corps District Office" list pick the appropriate USACE district. In the "Corps Permit #" box, type in the 9-digit USACE permit number identifier, with no hyphens or letters. Simply enter the year and the permit number, joined together, using preceding zeros if necessary after the year to obtain the necessary 9-digit (no more, no less) number. For example, the USACE Jacksonville District's issued permit number SAJ-2013-0235 (LP-CMW) must be typed in as 201300235 for PCTS to run a proper search and provide complete and accurate results. For querying permit applications submitted for ESA/EFH consultation by other USACE districts, the procedure is the same. For example, an inquiry on Mobile District's permit MVN201301412 is entered as 201301412 after selecting the Mobile District from the "Corps District Office" list. PCTS questions should be directed to Kelly Shotts at [Kelly.Shotts@noaa.gov](mailto:Kelly.Shotts@noaa.gov) or (727) 551-5603.

EFH Recommendations: In addition to its protected species/critical habitat consultation requirements with NMFS' Protected Resources Division pursuant to Section 7 of the ESA, prior to proceeding with the proposed action the action agency must also consult with NMFS' Habitat Conservation Division (HCD) pursuant to the MSA requirements for EFH consultation (16 U.S.C. 1855 (b)(2) and 50 CFR 600.905-.930, subpart K). The action agency should also ensure that the applicant understands the ESA and EFH processes; that ESA and EFH consultations are separate, distinct, and guided by different statutes, goals, and time lines for responding to the action agency; and that the action agency will (and the applicant may) receive separate consultation correspondence on NMFS letterhead from HCD regarding their concerns and/or finalizing EFH consultation.

Marine Mammal Protection Act (MMPA) Recommendations: The ESA Section 7 process does not authorize incidental takes of listed or non-listed marine mammals. If such takes may occur an incidental take authorization under MMPA Section 101 (a)(5) is necessary. Please contact NMFS' Permits, Conservation, and Education Division at (301) 713-2322 for more information regarding MMPA permitting procedures.