



North Carolina Department of Transportation

DIVISION 1



NC 12 Bridge Replacement Project – Ocracoke Island

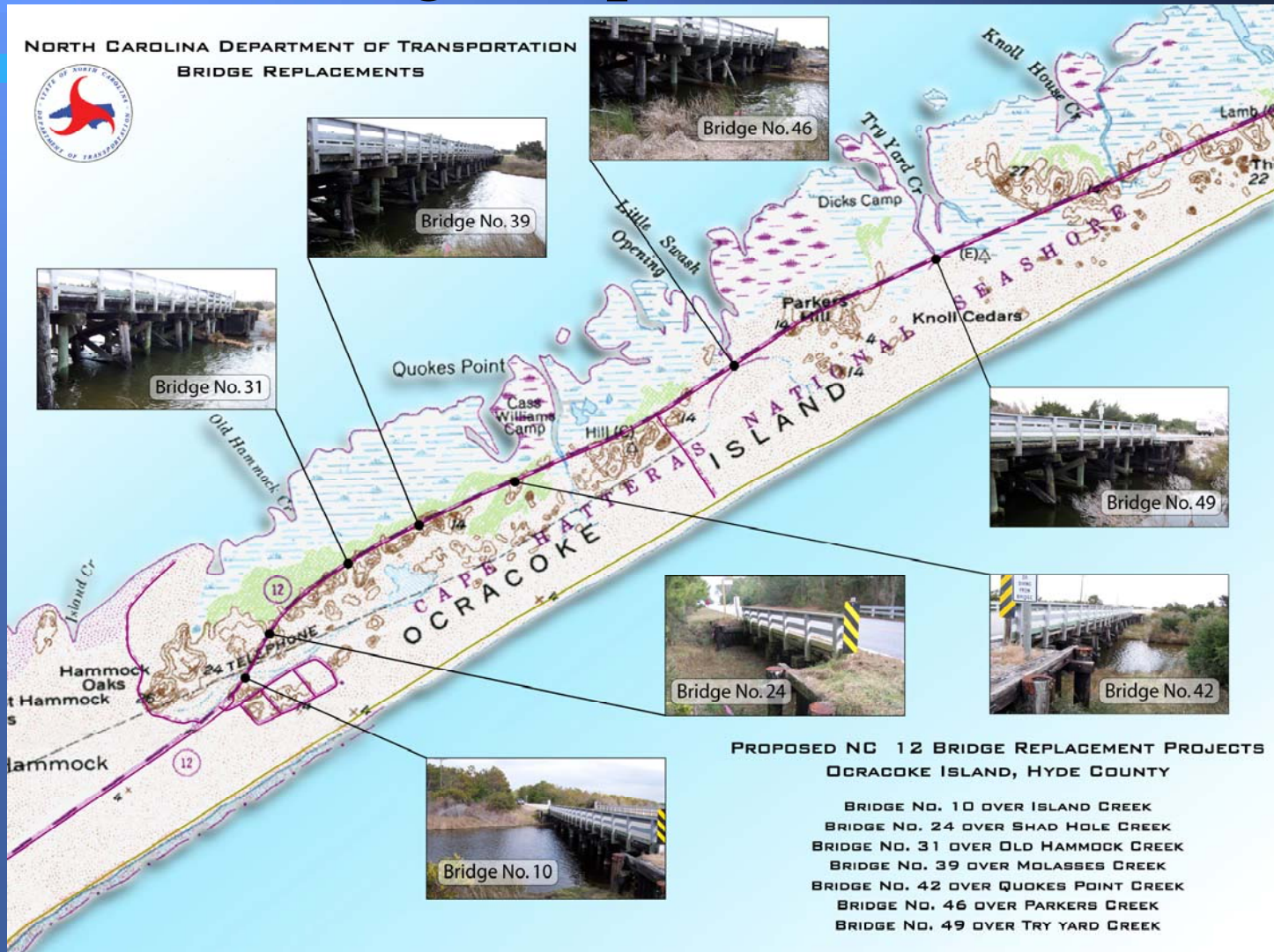
Hyde

Ocracoke, NC

March 25, 2008



Ocracoke Bridge Replacements





Project Timeline

- 2004 - North Carolina Moving Ahead Program
- October 2004 - Original proposal involved replacing bridges #10, #24, #31, and #39, while performing an environmental study for all seven bridges
- January 27, 2005 – A Citizen’s Informational Workshop was held, proposing that two bridges be constructed in 2006 and two in 2007 – based on public sentiment (strong objections) to project and the fact we only had a plan to address four of the seven bridges it was decided that we would reassess our plan
- Division decided that a different approach would be needed if this project were to succeed – At this time project stalled due to cash flow issues within the Department
- January 18, 2006 - External Constructability Review was held. Facilitated by the Alternative Delivery Section. Involved Department personnel and several contractors brainstorming about construction methodologies that would limit construction time while being as cost efficient as possible
- March 2006 – Clay Willis (DEO) and myself began meeting with National Park Service personnel to discuss various issues (staging, park impacts, island impacts, environmental challenges, etc.)



Project Timeline

- Summer – Fall 2006: Various meetings between NPS, Ocracoke Citizens, Stan White (Board Member), and Division
- **January 31, 2007: A meeting was held in Lacy Love's office with Ellis Powell, Ron Hancock, Mr. White, Lacy Love, Anthony Roper, Ray McIntyre, and myself**
- **Outcome of this meeting: We would complete replace all seven bridges in 75 days (i.e.- 75 total road closure)**
- Series of many meetings over next few months – with NPS, Bridge Maintenance, Ferry Division, County Officials, Programming Branch, Consulting Engineers, Ocracoke Island Control Group, Project Services, Geotechnical Unit
- **GOAL: July 17, 2007 Let with 8 week advertisement. This means that plans had to be turned in the second week in April.**
- From January to April all plans were revised for total pre-cast construction and environmental documents were revised and finalized. This did involve a significant amount of “tweaking” up to mandatory pre-bid conference which was held on June 25, 2007



Ocracoke Bridge Replacements



**NC 12 -
Ocracoke
Island Bridge
Replacements**



Pile Driving Analysis



- **NC 12 - Ocracoke Island PDAs**
- As a part of the NC Bridge Replacement Projects on Ocracoke Island the Division worked with the Geotechnical Unit to contract two PDAs.
- The low bid we received was \$459,698.00 which was 675% over the Engineers estimate of \$ 68,120
- Therefore we decided to tackle this project with Division Bridge Maint. Personnel, Construction personnel, and Geotechnical personnel
- Division had to rent (fully operated) a crane large enough to perform the work since our 50 ton crane couldn't handle the weight of the required hammer plus the pile
- Total Cost = \$141,693



Pile Driving Analysis

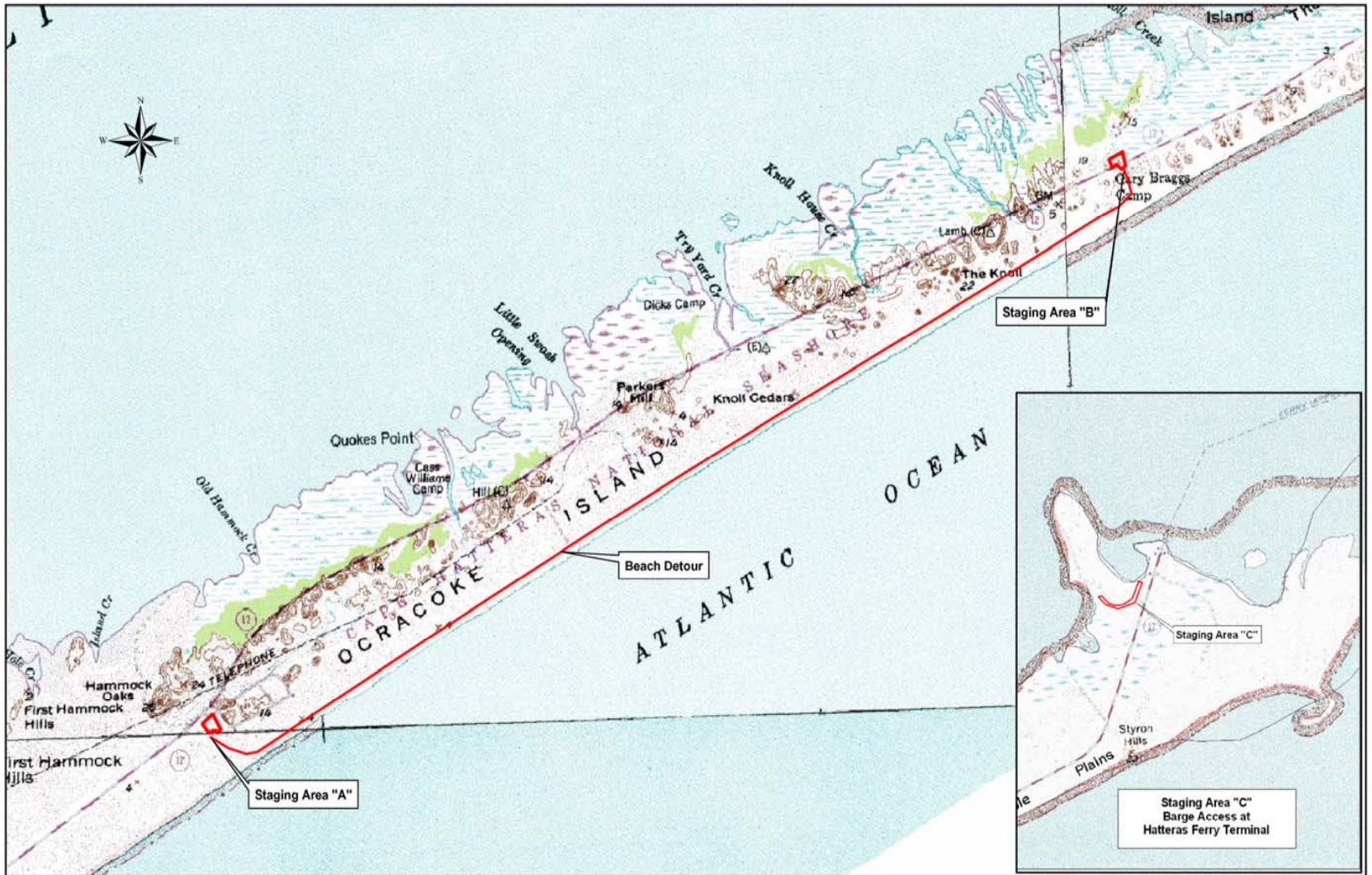
- **NC 12 - Ocracoke Island PDAs**





Staging & Stockpiling

- In addition to the inherent difficulties of working on Ocracoke Island we also had to deal with the fact that all the land on the island, except in the Village, is owned and controlled by the National Park Service
- Therefore Division worked with the NPS to designate pre-defined staging areas, stockpile sites, access points, etc.
- All of these site had to also be covered in the environmental document and authorized under a Special Use permit with the NPS





Detour Issues

- **January 2, 2008 - NC 12 Detoured for Construction - All traffic will be detoured to the beach (4x4 access only)**
- **Public Awareness Will Be Stressed**
- **Ferry Schedule Modified**
- **During Detour Provisions will be made to address issues of concerns**
- **Another Public Meeting was held on September 24, 2007 to discuss all of these issues with the residents**



Detour Access Points



Northern Detour Access By
Pony Pens



Southern Detour Access By
the Campground

Note: Access points were maintained by DOT forces



Public Awareness (VMS)

A plan was developed to setup VMS at strategic locations

- Whalebone
- Avon
- Hatteras Ferry Dock
- Swan Quarter Ferry Dock
- Cedar Island Ferry Dock
- NC 12 on Cedar Island
- Northern Detour Access
- Southern Detour Access

Placement (time) was coordinated with County Officials & the Contractor





Public Awareness (VMS)





Public Awareness - Website

NCDOT: NC 12 Ocracoke Bridge Replacements - Microsoft Internet Explorer

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Address <http://www.ncdot.org/projects/ocracokebridges/>

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NC 12 Ocracoke Bridge Replacements



Fast Facts:

- Est. Completion Date:** May 15, 2008
(Est. Road Opening: March 15, 2008)
- Project Cost:** \$8,024,339.81
- Project Team:** Carolina Bridge Co., Inc
- Region(s):** Coastal
- [Construction Progress Report](#)

News & Updates:

- [News & Updates](#)
- [Why is this project necessary?](#)
- [Project Highlights](#)
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General Construction Schedule

Download the latest [Detailed Construction Progress Report](#).

Press Release(s)

- 3/4/2008 [OCRACOKE ISLAND BRIDGE WORK COMPLETED AHEAD OF SCHEDULE, N.C. 12 OPENING WEDNESDAY](#)
- 3/4/2008 [OCRACOKE ISLAND BRIDGE WORK COMPLETED AHEAD OF SCHEDULE, N.C. 12 OPENING WEDNESDAY](#)

Why is this project necessary?

Seven bridges from Island Creek to Try Yard Creek on Ocracoke Island are being replaced in early 2008. The present day bridges spanning the seven tidal creeks were constructed when the road was built, more than fifty years ago. They have served Ocracoke well for the last half a century.

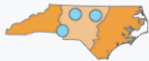
Project Highlights:

- Project Completion** - The N.C. Department of Transportation will reopen N.C. 12 on the northern part of Ocracoke Island beginning at 5 p.m. on Wednesday, March 5, 10 days ahead of schedule.

To complete paving, guardrail and shoulder work, one of two lanes along N.C. 12 on Ocracoke Island may be closed from Thursday, March 6, to Thursday, May 15. Closures may take place anytime from 7 a.m. on Monday to noon on Friday. No work will take place on the weekends. Work also will not take place from 7 a.m. on Thursday, March 20, to noon on Monday, March 24, to accommodate motorists traveling for the Easter holiday.
- Closures, detours, and/or delays** - Motorists should note that the four-wheel-drive detour between the National Park Service campground and the Pony Pens to access the village of Ocracoke has been discontinued and that ferry routes will resume their regular schedules on Thursday, March 6. Visit the

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Public Awareness - Website

Overall Project % complete 55%



Project Update: January 27 2008

- The deck slabs and concrete barrier rails are installed for three bridges; Bridge 49, Bridge 46 and Bridge 42.
- At Bridge 39 all of the substructure caps are in place and 40% of the deck slabs are installed.
- Pile driving is 100% complete at Bridge 31.
- At Bridge 24, demolition is complete and has been replaced with 2 culvert pipes.

REMINDER:

From January 2, 2008 until March 15, 2008, traffic will be detoured onto the beach.

Bridge #10 over Island Creek

Substructure % complete	<u>2%</u>
Deck % complete	<u>0%</u>

Bridge #24 over Shad Hole Creek

Culvert % complete	<u>100%</u>
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Bridge #31 over Old Hammock Creek

Substructure % complete	<u>40%</u>
Deck % complete	<u>0%</u>

Bridge #39 over Molasses Creek

Substructure % complete	<u>100%</u>
Deck % complete	<u>40%</u>

Bridge #42 over Quokes Point Creek

Substructure % complete	<u>100%</u>
Deck % complete	<u>95%</u>

Bridge #46 over Parkers Creek

Substructure % complete	<u>100%</u>
Deck % complete	<u>90%</u>

Bridge #49 over Try Yard Creek

Substructure % complete	<u>100%</u>
Deck % complete	<u>90%</u>



Public Awareness - Partners

- Hyde County Government Officials
- Hyde County Chamber of Commerce
- NCDOT Public Information Office
- Ferry Department
- National Park Service
- Ocracoke Control Group



Ferry Schedule (Modified)

- During the road closure all ferry routes were modified
- During the road closure all ferry fees were waived where applicable
- The Ferry Division worked directly with the Contractor to coordinate deliveries and ran dedicated ferries when needed for construction materials





Detour Provisions Made

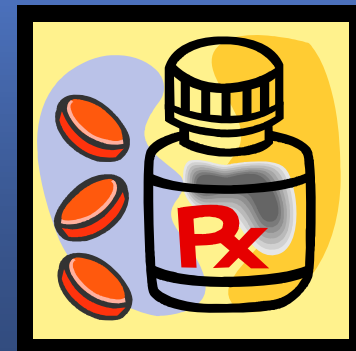
- The County and NPS became valuable partners in this project.
- The County coordinated with State Emergency Management to borrow two off road ambulances (DOT picked these vehicles up and returned them once road was opened). They also staged two other ambulances at the northern ferry terminal





Detour Provisions Made

- NPS took over delivery of the mail and daily prescription deliveries along with additional patrolling duties along the beach





Detour Provisions Made

- Towing Services were provided to assist all vehicles that become stuck on beach - NCDOT will paid for all related towing fees. (Purchase Order Contract)





Detour Provisions Made

- Towing Services continued.....





Detour Provisions Made

- **Air Pumps** - NCDOT placed an air pump at the northern ferry terminal for the public to use in order to air up their vehicles once coming off the beach. Another pump was placed at the southern end of the detour at the airport.





Detour Provisions Made

- NCDOT managed beach access points at the direction of NPS. NCDOT graded ramps and addressed issues of concern as directed by the NPS representative. Both sites were reinforced with geocellular confinement systems (TerraCell)





Let to Contract

CONTRACT INFORMATION

Contractor:	Carolina Bridge Co., Inc
Contract Amount:	\$ 8,024,339.81
Availability Date:	November 2, 2007
Begin Road Detour:	January 2, 2008
Open Road Detour:	March 15, 2008
Final Completion Date:	May 15, 2008

**Significant Incentives/Disincentives for Contractor to meet
March 15, 2008 Deadline**



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Beach
Detour

