

# Mid-Currituck Bridge Alternatives Analysis: Status Update

Presentation to NCTA Board  
June 18, 2008

# Overview

## Overview of Alternatives

- What alternatives are being considered?
- What are the key differences?

## Alternatives Screening Decisions

- What did NCTA propose to study in detail?
- What did the resource agencies recommend?
- What happens next?

# Alternatives Considered

- No Build
- Improve Existing Roads
- Build Mid-Currituck Bridge
  - With and without improving existing roads
- Ferry Service, Transit
- Various other alternatives

# Alternatives Considered

- Two Improve-Existing Roads Alternatives
  - ER1
  - ER2
- Both involve widening NC 12 and US 158, without building a new bridge
- Key difference:
  - ER1 widens NC 12 to 4 lanes in Dare County
  - ER2 widens NC12 to 3 lanes in Dare County



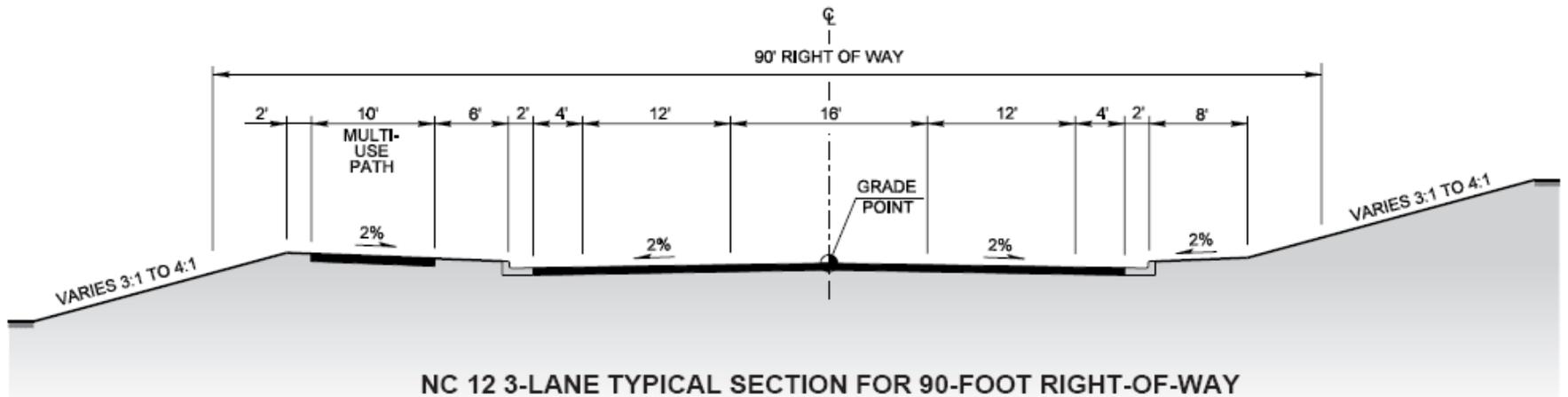
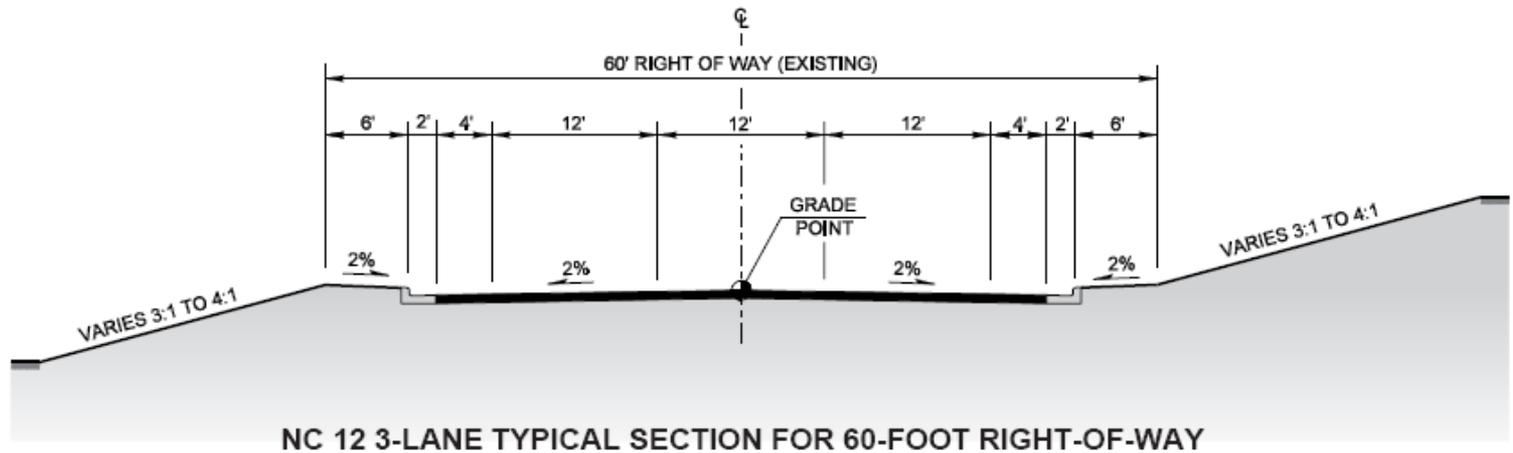
**LEGEND**

- Eight Lanes
- Six Lanes
- Four Lanes
- Three Lanes
- Third Northbound Lane or Contraflow Lane

**Highway Improvement  
Alternatives  
ER1 and ER2**

Figure

2



**NC 12 Three-Lane  
Typical Roadway  
Sections**

**Figure  
3**

# Alternatives Considered

- Four Mid-Currituck Bridge Alternatives:
  - MCB1 – bridge plus ER1
  - MCB2 – bridge plus ER2
  - **MCB3** – bridge with some road improvements
  - **MCB4** – bridge with some road improvements
- Key differences:
  - MCB3 and 4 mainly involve building a bridge; road improvements are a small part of the cost.



Scale in Miles



**MCB1**



**MCB2**

**LEGEND**

- Eight Lanes
- Six Lanes
- Four Lanes
- Three Lanes
- Third Northbound Lane or Contraflow Lane

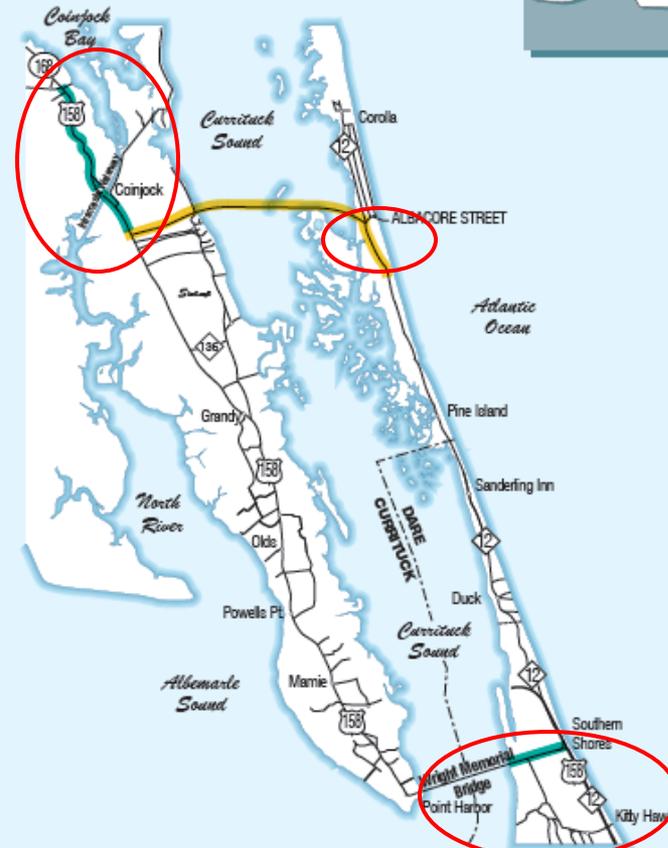
**Bridge Alternatives  
MCB1 and MCB2**

**Figure**

**6**



**MCB3**



**MCB4**

**LEGEND**

- Eight Lanes
- Six Lanes
- Four Lanes
- Three Lanes
- Third Northbound Lane or Contraflow Lane

**Bridge Alternatives  
MCB3 and MCB4**

**Figure**

**7**

# Key Considerations

- Factors considered include:
  - Ability to meet purpose and need
    - Travel time; congestion relief; hurricane evacuation
  - Impacts on natural environment
  - Impacts on communities/quality of life
  - Cost
  - Ability to generate toll revenues

Table 2. Evaluation of Existing Road (ER) and Mid-Currituck Bridge (MCB) Alternatives

Components	Highway Improvement Alternatives					
	ER1	ER2	MCB1	MCB2	MCB3	MCB4
• Bridge	NA	NA	2-lane bridge	2-lane bridge	2-lane bridge	2-lane bridge
• US 158 (Wright Memorial Bridge to NC 12)	8 lanes	8 lanes	6 lanes (8 lanes in NC 12 area)	6 lanes (8 lanes in NC 12 area)	5 lanes	5 lanes
• NC 12 (Dare County north of US 158)	4 lanes	3 lanes	4 lanes	3 lanes	2 lanes	2 lanes
• NC 12 (Currituck County)	4 lanes	4 lanes	4 lanes	4 lanes	2 lanes (4 near bridge)	2 lanes (4 near bridge)
• Location of US 158 Contraflow or Third Northbound Lane for Hurricane Evacuation	Wright Memorial Bridge to NC 168 (24.5 miles)	Wright Memorial Bridge to NC 168 (24.5 miles)	Mid-Currituck Bridge to NC 168 (5 miles)			Same as MCB3 plus Wright Memorial Bridge NC 12 (1.5 miles)
<b>Economic Feasibility</b>						
<b>Capital Cost (in millions)</b>						
• Two-Lane Mid-Currituck Bridge (average of six potential corridors)	NA	NA	\$385	\$385	\$385	\$385
• NC 12	\$550	\$207	\$550	\$207	\$72	\$72
• US 158 in Dare County	\$41	\$41	\$27	\$27	\$0	\$7
• US 158 in Currituck County (third northbound lane)	\$67	\$67	\$16	\$16	\$16	\$16
<b>TOTAL CAPITAL COST</b>	\$658	\$315	\$978	\$635	\$473	\$480
<b>Available Capital Funding (in millions)</b>						
• Potential Total Revenue Bond Financing	\$0	\$0	\$284	\$284	\$284	\$284
• Potential Transportation Infrastructure Finance and Innovation Act (TIFIA) Financing	\$0	\$0	\$128	\$128	\$128	\$128
• Potential Capital Funding Shortfall (Surplus) (total cost minus available funding)	\$658	\$315	\$566	\$223	\$61	\$68

Table 2 (continued). Evaluation of Existing Road (ER) and Mid-Currituck Bridge (MCB) Alternatives

	Highway Improvement Alternatives					
	ER1	ER2	MCB1	MCB2	MCB3	MCB4
Potential for Public-Private Partnership to cover shortfall	No	No	No	No	Yes	Yes
<b>Travel Benefits<sup>1</sup></b>						
<b>2035 Traffic Flow Benefits</b>						
Percent Reduction in Congested Annual Millions of VMT						
• At LOS E or F	55%	22%	64%	50%	37%	37%
• At LOS F	51%	27%	91%	91%	71%	71%
• At a poor LOS F	100%	44%	100%	100%	69%	69%
Percent Reduction in Miles of Road Operating at LOS F						
• Summer Weekday (SWD)	100%	60%	100%	100%	61%	61%
• Summer Weekend (SWE)	37%	10%	89%	89%	73%	73%
• Weighted Average of SWD & SWE	66%	33%	94%	94%	68%	68%
Percent Reduction in Miles of Road Operating at a Poor LOS F						
• Summer Weekday (SWD)	100%	35%	100%	100%	86%	86%
• Summer Weekend (SWE)	100%	25%	100%	100%	75%	75%
• Weighted Average of SWD & SWE	100%	32%	100%	100%	83%	83%
<b>2035 Travel Time Benefits (Aydlett Rd to Albacore St)</b>						
• Percent Reduction in Summer Travel Time via Wright Memorial Bridge (weighted average of SWD & SWE)	48%	19%	53%	44%	31%	31%
• Percent Reduction in Summer Travel Time via Currituck Sound Crossing (weighted average of SWD & SWE)	NA	NA	93%	93%	93%	93%

Table 2 (continued). Evaluation of Existing Road (ER) and Mid-Currituck Bridge (MCB) Alternatives

	Highway Improvement Alternatives					
	ER1	ER2	MCB1	MCB2	MCB3	MCB4
<b>2035 Hurricane Evacuation Benefit</b>						
Clearance Time With US 158 Northbound Contraflow Lane in Currituck County	27.4 hrs	27.4 hrs	27.4 hrs	27.4 hrs	27.4 hrs	27.4 hrs
• Percent of a Reduction from 36.3 hours to 18 hours	49%	49%	49%	49%	49%	49%
• Amount Above 18-hour Goal	8.9 hrs	8.9 hrs	8.9 hrs	8.9 hrs	8.9 hrs	8.9 hrs
Clearance Time With US 158 Third Northbound Lane in Currituck County	21.8 hrs	21.8 hrs	21.8 hrs	21.8 hrs	26.6 hrs	21.8 hrs
• Percent of a Reduction from 36.3 hours to 18 hours	79%	79%	79%	79%	53%	79%
• Amount Above 18-hour Goal	3.8 hrs	3.8 hrs	3.8 hrs	3.8 hrs	8.6 hrs	3.8 hrs
<b>System Linkage and Efficiency Benefit</b>						
Percent Reduction in Total Annual Millions of Vehicle Miles Traveled (VMT)	0%	0%	13%	13%	13%	13%
Consistent with Strategic Highway Corridor Vision Plan	No	No	Yes <sup>2</sup>	Yes <sup>2</sup>	Yes	Yes
Consistent with Intrastate System Designations	No	No	Yes <sup>2</sup>	Yes <sup>2</sup>	Yes	Yes
<b>Impact Potential</b>						
<b>Displacement</b>						
• Mid-Currituck Bridge (average of C1 to C6)	0	0	5	5	5	5
• NC 12	195	15	195	15	5	5
• US 158 in Dare County	0	0	0	0	0	0
• US 158 in Currituck County (third northbound lane)	32	32	1	1	1	1
<b>TOTAL DISPLACEMENT</b>	227	47	201	21	11	11

Table 2 (concluded). Evaluation of Existing Road (ER) and Mid-Currituck Bridge (MCB) Alternatives

	Highway Improvement Alternatives					
	ER1	ER2	MCB1	MCB2	MCB3	MCB4
Rural/Beach Community Fragmentation	Four through lanes crossed by beach users, shoppers, or hotel guests in Dare County.	New turn lane crossed by beach users or hotel guests in Dare County.	Same as ER1 plus Mid-Currituck Bridge passes through Aydlett (C3 and C4 through center) and C1, C3, and C5 pass through middle of new subdivision.	New turn lane crossed by beach users or hotel guests in Dare County, plus Mid-Currituck Bridge passes through Aydlett (C3 and C4 through center) and C1, C3, and C5 pass through middle of new subdivision.	Mid-Currituck Bridge passes through Aydlett (C3 and C4 through center) and C1, C3, and C5 pass through middle of new subdivision.	Mid-Currituck Bridge passes through Aydlett (C3 and C4 through center) and C1, C3, and C5 pass through middle of new subdivision.
Habitat Fragmentation	None	None	Associated with Mid-Currituck Bridge crossing of Maple Swamp and loss of swamp forest and hardwood forest; C1 to C4 in vicinity of an existing forest edge; C5 and C6 create a new edge and also use bay forest.			
<b>Wetland Filled/Bridged (Acres)</b>						
• Mid-Currituck Bridge (average of C1 to C6)	0.0/0.0	0.0/0.0	13.7/7.2	13.7/7.2	13.7/7.2	13.7/7.2
• NC 12	10.9/0.0	10.4/0.0	10.9/0.0	10.4/0.0	6.3/0.0	6.3/0.0
• US 158 in Dare County	4.2/0.0	4.2/0.0	3.4/0.0	3.4/0.0	0.0/0.0	0.0/0.0
• US 158 in Currituck County (third northbound lane)	12.4/0.0	12.4/0.0	10.8/0.0	10.8/0.0	10.8/0.0	10.8/0.0
<b>TOTAL WETLANDS FILLED/BRIDGED</b>	27.5/0.0	27.0/0.0	38.8/7.2	38.3/7.2	30.8/7.2	30.8/7.2
<b>High Quality Resources Filled/Bridged (Acres)</b>						
• Mid-Currituck Bridge (average of C1 to C6)	0.0/0.0	0.0/0.0	4.8/6.1	4.8/6.1	4.8/6.1	4.8/6.1
• NC 12	17.8/0.0	16.8/0.0	17.8/0.0	16.8/0.0	0.0/0.0	0.0/0.0
• US 158 in Dare County	0.2/0.0	0.2/0.0	0.0/0.0	0.0/0.0	0.0/0.0	0.0/0.0
• US 158 in Currituck County (third northbound lane)	1.4/0.0	1.4/0.0	1.4/0.0	1.4/0.0	1.4/0.0	1.4/0.0
<b>TOTAL HIGH QUALITY RESOURCES FILLED/BRIDGED</b>	19.4/0.0	18.4/0.0	24.0/6.1	23.0/6.1	6.2/6.1	6.2/6.1

# Agency Recommendations

## NCTA/FHWA:

- Drop
  - ER1, ER2
  - MCB1, MCB2
  - Ferry, Transit, Etc.
- Carry Forward
  - MCB3
  - MCB4
  - No Build

## Resource Agencies

- Drop
  - ER1
  - MCB1
  - Ferry, Transit, Etc.
- Carry Forward
  - ER2, MCB2
  - MCB3
  - MCB4
  - No Build

# Current Status

- We have made some progress with the agencies:
  - ER1 dropped
  - Ferry dropped
- We now have to decide whether to conduct additional study of ER2 / MCB2.

# Decision Point

- Proceed with MCB3 and MCB4 only
  - Allowed under 6002 process
  - Risk of permit denial

- or -

- Conduct additional study of ER2 and MCB2
  - Additional delay and cost
  - Uncertainty about ultimate outcome

# Factors to Consider

- Project history / agency perspectives
- Legal standards for screening alternatives
- Legal standards for permit decisions
- Flexibility in 6002 process
- FHWA role as lead agency
- Need to obtain permits

# Potential Path Forward

- Refine bridge alternatives
  - Including minimization and mitigation
- Develop additional information on cost and impacts of ER2 and MCB2
  - With "caveat"
- Develop additional information on financial feasibility of all alternatives.

# Ongoing Activities / Next Steps

## Ongoing

- Internal NCTA assessment
- Coordination with FHWA

## Next Steps

- Meet with agencies
- Public communication of decision
- Proceed full-steam with DEIS preparation
- Possible additional work on ER2/MCB2