A Tale of Two Bridges

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“It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, …it was the spring of hope, it was the winter of despair…”

- Charles Dickens, A Tale of Two Cities
Project Overview

- Gallants Channel Bridge
  - Built in 1957
  - Eligible for National Register of Historic Places
  - Need to increase capacity and reduce traffic delays
  - NEPA started in 1998
  - EA approved in 2004
  - New request for movable bridge 2008
  - Original construction mid 2000s
  - Let for construction January 2014
  - Anticipated completion 2017

- Topsail Island Bridge
  - Built in 1954
  - Eligible for National Register of Historic Places
  - Need to improve bridge safety and functionality
  - Added to STIP in 2005
  - NEPA started in 2008
  - EA completed in 2011
  - Construction scheduled for 2017
Five Key Lessons

1. Understanding Unique Circumstances
2. Solicit Input Early and Often
3. Evaluate All Possibilities
4. Streamline the Decision Process
5. Use Technology to Aid Decisions
Lesson 1: Understand Unique Circumstances

- Gallants Channel Bridge
  - Beaufort, NC
  - One of the oldest town in NC (Est. 1709)
  - Historic District
  - Maritime Museum
  - Port Access (Morehead City)
  - Coastal wetlands
  - Airport
  - Power Lines
  - Maritime Business Park upstream – late stakeholder
Lesson 1: Understand Unique Circumstances

Source: NOAA Chart 11545 – Beaufort Inlet and Part of Core Sound, May 2013.
Lesson 1: Understand Unique Circumstances

Two Types of Bridges to be Considered

Movable Type Bridge

Fixed Span Type Bridge
Lesson 1: Understand Unique Circumstances

- **Topsail Island Bridge**
  - 3 beach communities (Surf City, Topsail Beach, North Topsail Beach)
  - Major traffic delays in summer
  - Existing bridge – strong sentimental value
  - Neighboring constraints
    - Local park, boat access
    - Coastal wetlands, SAV
    - Million $ condos, business district, high-power transmission lines
Lesson 1: Understand Unique Circumstances

Movable Bridges

Swing Bridge  Vertical Lift Bridge  Bascule Bridge
Lesson 1: Understand Unique Circumstances
Five Key Lessons

1. Understanding Unique Circumstances
2. Solicit Input Early and Often
3. 
4. 
5. 
Lesson 2: Public Input – Solicit Early and Often

- Gallants Channel Bridge
  - Traditional approach
  - Public Meetings held in 1998, 1999, 2000, 2004
  - Special stakeholder meetings with Maritime Museum, Airport, Historical Commission
  - Early stages of Merger Process with environmental agencies
  - Traditional methods of communication - mailings, newspapers
  - Additional meetings with maritime businesses and the USCG
Lesson 2: Public Input – Solicit Early and Often

Outreach Area

- Entire Island + Mainland Portion of Surf City
- 10,000 Residents/Businesses
Lesson 2: Public Input – Solicit Early and Often

Public Officials Meetings
- Meeting with Each Town Before Public Meeting

Newsletters, Hotline, Website

Public Meetings, “Working Sessions”
- June 2009 - Clean Slate
- October 2010 - All Possibilities
- December 2011 - Potential Impacts
- Summer 2014 – Details of Preferred Alternative
Public Input

- Surveys Each Step of the Way
  - Anticipated questions in the Newsletter before Public Meeting
Lesson 2: Public Input – Solicit Early and Often

**June 2009**

1) How often do you travel over the bridge (via automobile), or under/through the bridge (via boat)? (169 responses)
   - 1 – 2: 75 (44.7%)
   - 3 – 4: 32 (19.1%)
   - 4 – 6: 42 (25.1%)
   - No Response: 1 (0.6%)

2) How does the bridge support your community or business? (164 responses)
   - Significant: 96 (58.3%)
   - Insufficient: 32 (19.6%)
   - No Response: 26 (15.9%)

3) If the bridge were closed short term or long term, how would this impact you? (178 responses)
   - Significant: 104 (58.7%)
   - Insufficient: 56 (31.5%)
   - Short Term is ok: 16 (9.1%)
   - Winter is ok: 10 (5.6%)
   - No Response: 6 (3.4%)

4) How are you affected by delays due to the opening of the swing bridge? (174 responses)
   - Significant: 60 (34.1%)
   - Insufficient: 34 (19.6%)
   - No Response: 14 (8.1%)

5) Do you use the bridge at North Topsail to avoid delays at Surf City? (150 responses)
   - Yes: 25 (16.7%)
   - No: 125 (83.3%)
   - No Response: 1 (0.7%)

6) Do you think a high span bridge similar to the bridge at North Topsail is appropriate for the existing bridge replacement? How about a boxcar bridge? (178 responses)
   - High Span: 60 (33.6%)
   - No High Span: 89 (50.3%)
   - None: 29 (16.3%)

7) Should the new bridge accommodate pedestrians and bicyclists? (159 responses)
   - Yes: 146 (92.1%)
   - No: 13 (8.3%)

**Oct 2010**

1) Where do you live? (216 responses)
   - Surf City Island: 100 (46.3%)
   - Surf City Mainland: 52 (24.0%)
   - Topsail Beach: 26 (12.0%)
   - North Topsail Beach: 17 (7.9%)
   - Hampstead: 10 (4.7%)
   - Other: 12 (5.6%)

2) Your relationship with the Island: (214 responses)
   - Permanent Resident: 152 (71.0%)
   - Seasonal Resident: 48 (22.1%)
   - Other: 14 (6.6%)

3) Do you have property that will be directly impacted by one of the alternatives? (196 responses)
   - Yes: 129 (66.0%)
   - No: 67 (34.0%)

4) What is your property's use? (176 responses)
   - Residential: 128 (73.0%)
   - Business: 21 (12.3%)
   - Vacation: 20 (11.4%)
   - Other: 7 (4.0%)

5) What is your preferred alternative in EACH of the three groups?
   - Northern Group (182 responses)
     - None: 11 (6.1%)
     - All 2: 15 (8.3%)
     - All 5A: 12 (6.6%)
     - All 3: 17 (9.4%)
   - Central Group (199 responses)
     - None: 13 (6.6%)
     - All 2A: 12 (6.1%)
     - All 6: 17 (8.6%)
     - All 10: 18 (9.1%)
   - Southern Group (201 responses)
     - None: 12 (6.0%)
     - All 10: 43 (21.4%)
     - All 14: 14 (7.0%)
     - All 11: 16 (8.0%)
Five Key Lessons

1. Understanding Unique Circumstances
2. Solicit Input Early and Often
3. Evaluate All Possibilities
Lesson 3: Evaluate All Possibilities

Gallants Channel

- Evaluated Widening & New Location Options; Fixed Span and Drawbridges
- Additional Coordination with the USCG Two Years After NEPA Process was Complete
  - Alternatives re-evaluated
- Boat Survey – Quantified Results
  - Height, type, frequency, and purpose (recreation/commercial)
Lesson 3: Evaluate All Possibilities
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June 25, 2009

Consider a suspension bridge (fixed type)

Existing Topsail Island Bridge

Spout River Project

Soundside Park

Bunsaddle Road

Surf City

210
Lesson 3: Evaluate All Possibilities

18 Alternatives

Not to Scale

DESIGN STUDY AREA

Intracoastal Waterway

To North Topsail Beach

Existing Topsail Island Bridge

To Wilmington and Jacksonville

To Topsail Beach

Alt 1

Alt 2

Alt 3

Alt 4

Alt 5

Alt 6

Alt 7

Alt 8

Alt 9

Alt 10

Alt 11

Alt 12

Alt 13

Alt 14

Alt 15

Alt 16

Alt 5A

210

60

210

60

210

60

210

60

210

60
Five Key Lessons

1. Understanding Unique Circumstances
2. Solicit Input Early and Often
3. Evaluate All Possibilities
4. Streamline the Decision Process

26
Lesson 4: Streamline the Decision Process

Team Review

Feedback from Local Officials & Citizens

Engineering & Environmental Analysis
Lesson 4: Streamline the Decision Process

Significant Environmental Impacts - Eliminated 4 Alternatives

ALT 1
ALT 8
ALT 9
ALT 12
Lesson 4: Streamline the Decision Process

14 Remaining Alternatives

- Alternative 2
- Alternative 3
- Alternative 4
- Alternative 5
- Alternative 6
- Alternative 7
- Alternative 8
- Alternative 9
- Alternative 10
- Alternative 11
- Alternative 12
- Alternative 13
- Alternative 14
- Alternative 15
- Alternative 16

Northern Alternatives Group
- Alternative 1
- Alternative 2
- Alternative 3
- Alternative 4
- Alternative 5
- Alternative 6
- Alternative 7
- Alternative 8
- Alternative 9
- Alternative 10
- Alternative 11
- Alternative 12
- Alternative 13
- Alternative 14
- Alternative 15
- Alternative 16

Central Alternatives Group
- Alternative 1
- Alternative 2
- Alternative 3
- Alternative 4
- Alternative 5
- Alternative 6
- Alternative 7
- Alternative 8
- Alternative 9
- Alternative 10
- Alternative 11
- Alternative 12
- Alternative 13
- Alternative 14
- Alternative 15
- Alternative 16

Southern Alternatives Group
- Alternative 1
- Alternative 2
- Alternative 3
- Alternative 4
- Alternative 5
- Alternative 6
- Alternative 7
- Alternative 8
- Alternative 9
- Alternative 10
- Alternative 11
- Alternative 12
- Alternative 13
- Alternative 14
- Alternative 15
- Alternative 16
### What is your preferred alternative in EACH of the three groups?

#### Northern Group (154 responses)

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alt 2</td>
<td>25</td>
<td>16%</td>
</tr>
<tr>
<td>Alt 3</td>
<td>62</td>
<td>40%</td>
</tr>
<tr>
<td>Alt 4</td>
<td>29</td>
<td>19%</td>
</tr>
<tr>
<td>Alt 5</td>
<td>16%</td>
<td>19%</td>
</tr>
<tr>
<td>None</td>
<td>17</td>
<td>11%</td>
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#### Central Group (170 responses)

<table>
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</thead>
<tbody>
<tr>
<td>Alt 5A</td>
<td>21</td>
<td>14%</td>
</tr>
<tr>
<td>Alt 6</td>
<td>22</td>
<td>14%</td>
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<tr>
<td>Alt 7</td>
<td>77</td>
<td>50%</td>
</tr>
<tr>
<td>Alt 10A</td>
<td>29</td>
<td>19%</td>
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<tr>
<td>None</td>
<td>21</td>
<td>14%</td>
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#### Southern Group (169 responses)

<table>
<thead>
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<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alt 10</td>
<td>73</td>
<td>47%</td>
</tr>
<tr>
<td>Alt 11</td>
<td>28</td>
<td>18%</td>
</tr>
<tr>
<td>Alt 13</td>
<td>24</td>
<td>16%</td>
</tr>
<tr>
<td>Alt 14</td>
<td>5</td>
<td>3%</td>
</tr>
<tr>
<td>Alt 15</td>
<td>10</td>
<td>6%</td>
</tr>
<tr>
<td>Alt 16</td>
<td>7</td>
<td>5%</td>
</tr>
<tr>
<td>None</td>
<td>22</td>
<td>14%</td>
</tr>
</tbody>
</table>

**Added 5R**

**Added 17**
Lesson 4: Streamline the Decision Process

Which alternative is your First Preference? (136 responses)

Alt 17
32%
Alt 11
14%
Alt 7 (Mov)
25%
Alt 4
11%
Alt 6 (Mov)
12%
Alt 5
4%
Alt 5R
2%

Which alternative is your Seventh (least) Preference? (69 responses)

Alt 17
9%
Alt 6 (Mov)
25%
Alt 7 (Mov)
16%
Alt 11
26%
Alt 5
11%
Alt 5R
4%
Lesson 4: Streamline the Decision Process

Preferred Alternative
USCG and Boat Surveys

- Gallants Channel Bridge
  - Marine Assessment - quantified results to re-confirm earlier recommendations

- Topsail Island Bridge
  - Early coordination with the USCG
  - Boat survey – to aid in determining bridge height
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Lesson 5: Use Technology to Aid Decisions
Lesson 5: Use Technology to Aid Decisions

High-Level Fixed Bridge

Mid-Level Moveable Bridge

Bird's Eye View

Island Tie-in Location

Mainland Tie-in Location

Island Tie-in Location

Mainland Tie-in Location
Five Key Lessons

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End Result: Successful Project

Based on the information available, were all substantial questions answered?

Yes – 92%   No – 8%

Were display maps and handouts easy to read and understand?

Yes – 99%   No – 1%

Were NCDOT representatives understandable, helpful and clear in their explanations?

Yes – 98%   No – 2%

NCDOT did a good job!  Excellent Job!

Did a great job!  Very Good!

Loved this Format!

Well thought out.  It would be hard to do better.  Workshop is ideal and handled efficiently.
Thank You

Charles Cox, NCDOT
Radha Krishna Swayampakala, RS&H