Spanning the Decades: The Future of the Hampton Roads Bridge-Tunnel

April 12, 2018

James S. Utterback, PMP
Project Director
Hampton Roads Bridge-Tunnel Expansion
# HRBT Timeline

<table>
<thead>
<tr>
<th>Activity</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplemental EIS (SEIS) Process Initiated</td>
<td>June 2015</td>
</tr>
<tr>
<td>Draft SEIS Issued</td>
<td>August 2016</td>
</tr>
<tr>
<td>HRTPO Endorsement of Preferred Alternative</td>
<td>October 2016</td>
</tr>
<tr>
<td>CTB Endorsement of Preferred Alternative</td>
<td>December 2016</td>
</tr>
<tr>
<td>Request for Information &amp; Industry Meetings</td>
<td>April 2017</td>
</tr>
<tr>
<td>Final SEIS Issued</td>
<td>April 2017</td>
</tr>
<tr>
<td>FHWA Record of Decision</td>
<td>June 2017</td>
</tr>
<tr>
<td>Approval of Design-Build Procurement Method by PPTA Steering Committee</td>
<td>December 2017</td>
</tr>
<tr>
<td>Request for Qualifications Issued</td>
<td>December 2017</td>
</tr>
<tr>
<td>Activity</td>
<td>Date</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Project Information Meeting</td>
<td>January 2018</td>
</tr>
<tr>
<td>One-on-One Meetings</td>
<td>February 2018</td>
</tr>
<tr>
<td>Statements of Qualifications Received</td>
<td>March 2018</td>
</tr>
<tr>
<td>Announcement of Shortlisted Teams</td>
<td>April 2018</td>
</tr>
<tr>
<td>Draft Request for Proposals</td>
<td>Spring 2018</td>
</tr>
<tr>
<td>Proprietary Meetings and ATC Process</td>
<td>Summer 2018</td>
</tr>
<tr>
<td>Final Request for Proposals</td>
<td>Fall 2018</td>
</tr>
<tr>
<td>Technical and Financial Proposals Due</td>
<td>Late 2018</td>
</tr>
<tr>
<td>Contract Award</td>
<td>Early 2019</td>
</tr>
<tr>
<td>Contract Completion</td>
<td>2024</td>
</tr>
</tbody>
</table>
Spanning the Decades: The History of the Hampton Roads Bridge-Tunnel

April 12, 2018
Martha E. Gross, PE
Deputy Project Director
Hampton Roads Bridge-Tunnel Expansion
Superlatives for the Original Tunnel

Upon its opening in 1957, HRBT was:

- Longest immersed-tube tunnel in the world

- First marine tunnel between artificial islands
  - Still fewer than ten such tunnels worldwide today
  - All known instances in US are in Hampton Roads

- Constructed with funds from Virginia’s largest-ever revenue bond issue at $95 million
  - Repaid by tunnel tolls: $1.25 per passenger car, equivalent to over $10 today
Considerations for the New Tunnel

- “Current events” at the HRBT Site
  - Different from Midtown Tunnel
  - Different from Thimble Shoal Tunnel

- Corollary 1: When the Ship Wins
  - Historic shoreline ≠ present-day shoreline

- Corollary 2: When the Shoal Wins
  - Historic shoals = present-day shoals
“Current Events” at the HRBT Site
Corollary 1: When the Ship Wins
(Historic shoreline ≠ present-day shoreline)
Willoughby Spit Shoreline Changes
Some Changes Had Clear Explanations...
...While Others Involved Historical Mysteries

A German Submarine, Visible at Low Tide?

USS Stringham (TB-19)
Willoughby Spit in the 1920’s

Three Vessels, Deliberately Placed

When the Ship Wins: A Newly Expanded Shoreline
Corollary 2: When the Shoal Wins
(Historic shoals = present-day shoals)
The Horse Shoe in 1781

"A Plan of the Entrance of Chesapeake Bay, with James and York Rivers." Credit: Library of Congress
The Horse Shoe in the 1860’s

"Fort Monroe and Vicinity Showing Entrance to Chesapeake Bay, Norfolk, Portsmouth, Gosport Navy Yard &c."
Credit: Library of Congress
Same Shoals, Then as Now
For Scale...

**USS Missouri**

- **Length:** 887 ft
- **Width:** 102 ft
Training Exercise: January 17, 1950
Training Exercise: January 17, 1950

U.S.S. Missouri (BB-63) Salvage Report
https://maritime.org/doc/bbmosalvage
Missouri Aground on the Horse Shoe
...Within View of the Army’s Fort Monroe
Challenges:

- Grounding occurred at a particularly high tide
- 12-knot speed carried Missouri about 2500 ft into the shoal
- Ship was fully loaded at over 57,000 tons at time of grounding
Removing 12,000t to Lighten the Ship
Finally Re-Floated on February 1, 1950

(A planning model of the salvage operation)
Transferable Concepts

- Deeper water
  - Portions of HRBT channel are naturally deeper than maintained dredge depth
  - In these locations: deeper water → faster currents

- Shallower water
  - Current readings are very different than in channel
  - Limited deep-water mooring space exists near project
  - Even small craft must keep to channels

- Hampton Roads waterway is a complex site for construction!