Chincoteague Bridge – General Information

The movable portion of the Chincoteague Bridge is a single leaf bascule bridge. Bascule bridges open by rotating a leaf (or leaves) from the normal horizontal position to a point that is typically nearly vertical, providing an open channel of unlimited height for marine traffic. The width of the channel is limited by the length of the leaf. If the channel is narrow, one leaf may be sufficient, in which case the bridge is called a “single-leaf bascule” bridge (as in the case of the Chincoteague Bridge).

There are three basic types of bascule bridges: trunnion, rolling-lift, and heel-trunnion. These types have slight variations in configuration and gear mechanisms. The Chincoteague Bridge is a trunnion bascule, which is by far the most common of the three types.
## Chincoteague Bridge: Route 175 over Black Narrows Channel (#2)

The spans leading to the bascule portion of the bridge are known as approach spans, which are built with conventional prestressed concrete girders. A buffer system is currently being installed to ensure proper seating.

### Movable Bridges - Major Projects in 30-Year Plan

<table>
<thead>
<tr>
<th>Project Number</th>
<th>Project Description</th>
<th>Start Year in 30-Year Plan</th>
<th>Cost (2018 Dollars)</th>
<th>Reason for Importance/Potential Consequences of Inaction</th>
</tr>
</thead>
</table>
| 1              | Superstructure, Rehabilitate Span Locks, Replace Deck | 11                           | $7M                 | • Structural Rehabilitation of Primary Framing: Corrosion to beams will inhibit their load-carrying ability  
• Span lock malfunction could lead to structural damage to primary members  
• Damage to deck could damage car or truck tires, leading to impact to bridge or to other vehicles |
| 2              | Motor               | 17                           | $2M                 | • Required for movable bridge operation |
| 3              | Mechanical and Electrical Rehabilitation | 26                           | $23M                | • Regular rehabilitation required to keep mechanical and electrical systems operational and current |

Chincoteague Bridge 30-Year Plan Total in 2018 Dollars $32M

### Project #1 - Superstructure, Rehabilitate Span Locks, Replace Deck – Start Year 11 in 30-Year Plan

**Superstructure:** The structure is exposed to an aggressive saltwater environment, which leads to corrosion and deterioration. The main framing members of both the movable spans and the approach spans will require repair and rehabilitation in order to preserve the structure for the long term.

**Span locks:** Span locks require periodic rehabilitation. The failure of one or more span locks could lead to serious structural damage to the structural framing of the movable portion of the bridge. It could also expose vehicular traffic to hazards, as an improperly locked span could cause vertical misalignment causing a dangerous situation for the drivers and damage to the bridge machinery.

**Deck:** Movable bridges employ very light weight bridge decks (driving surfaces) in order to minimize the loading on the machinery and power systems. The bridge deck on the movable portion of the Chincoteague Bridge is a partially-filled, steel grid steel decking, which has a very limited life span. These decks must be scheduled for replacement on a regular basis, as they become vulnerable to cracking and localized failure toward the end of their life spans. Failure of any portion of a grid deck could lead to serious safety risks for vehicles and the structures.

### Project #2 - Motor - Start Year 17 in 30-Year Plan

Certain elements of movable bridges require periodic rehabilitation and replacement. This applies to the motors of the bascule span. These are vital systems for the functioning of the movable bridge, and they will have reached the end of service life by this time.

### Project #3 – Mechanical and Electrical - Start Year 26 in 30-Year Plan

Regular rehabilitation required to keep mechanical and electrical systems operational and current. It is vital that these rehabilitative efforts be performed in a timely manner to avoid unanticipated service disruptions.