

**Centerville
Turnpike Bridge
Update**
December 17, 2020

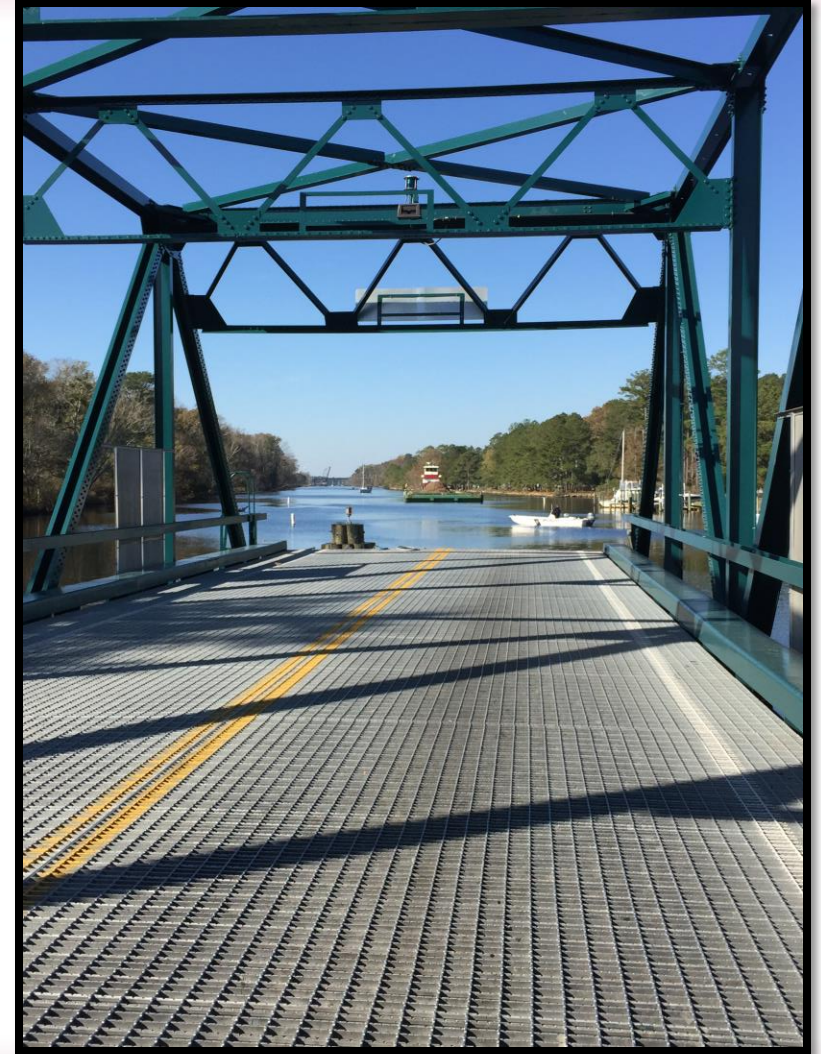
Centerville Turnpike Bridge

- Constructed 1955
- Rehabilitation Project: 2019-2020
 - Bridge closed to vehicular traffic:
August 2019 – February 2020
- Average Daily Traffic: 16,000
- Channel clearance: 80 feet (when bridge is fully opened)



Incident/Response Timeline

- November 14, 2020, 04:34:38 AM
- Tug: *Island Lookout* pushing metal refuse barge heading east
- About 7 feet from fully open, the barge impacted the northwest corner of the bridge
- Bridge Engineer notified at 0444 by Duty Officer
- Coast Guard notified by bridge tender; The USCG and NTSB commenced an investigation later that morning



Incident Response & Findings

- **Response team:**
 - Public Works Bridges and Engineering Divisions
 - Clark Nexsen (Structural Engineers)
 - Hardesty & Hanover (Mechanical Engineers)
 - W. F. Magann (Contractor)
- **Structural Damage**
 - End floor beam, stringers, gusset plates, bearing assembly, mech. support framing, fender system, pivot pier
- **Mechanical Damage**
 - Bolts sheared at Pivot Bearing Housing; unknown if bearing is damaged until span is lifted for full inspection
 - Main drive machinery significantly damaged and misaligned
 - NE Wedge bearing mechanism damaged
 - **Damage will be further assessed upon jacking/ selected disassembly & inspection**
- **Electrical Damage**
 - Localized damage at point of impact
 - Various components to be removed and reinstalled
 - Full electrical check once span can be safely operated



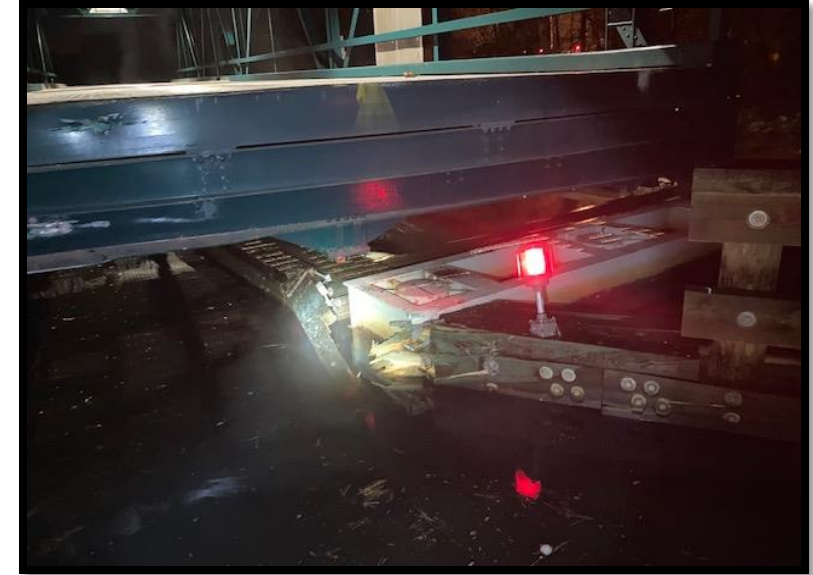
Structural Damage



Floor Beam Damage
(Fracture Critical Member)



Gusset Plate Damage
(Fracture Critical Member)



Fender Damage

Mechanical Damage



**Drive Gear Misalignment /
Damage to Rack / Track**



Pivot Bearing Housing Damage

Damage Assessment/Repair Process

- **Emergency Assessment/Engineering/Inspection (\$500K)**
 - Emergency Assessment: 100% complete
 - Full Inspection/Documentation: Estimated completion **1/11/2021**
 - Repair Plans: Estimated completion **1/31/2021**
- **Partnership between City/Consulting Engineers/Contractor**
- **Stabilization / Jacking / Selective Disassembly (\$100K)**
 - In progress: Stabilization of north end of structure/jacking/blocking
 - Jacking of bridge for pivot bearing inspection scheduled **12/23/2020**
 - Selective disassembly of Mechanical Components before and following Jacking to fully assess damage

Repair Process

- **Structural Repairs (\$800K)**
 - Steel Superstructure (truss, floor beam, gusset plates, stringers, mechanical framing)
 - Timber Fender System
 - Concrete Pivot Pier
 - Estimated timeline to complete structural repairs **(3/31/2021)**
- **Mechanical/Electrical Repairs (\$1.2 million)**
 - Drive System
 - Wedge Assemblies/Centering System
 - Center Pivot Bearing
 - Electrical System/Limit Switches
 - Final Span Alignment/Balancing
 - Estimated timeline to complete ME repairs **(5/31/2021)**
- **Estimated total: \$2.6 million + 10% contingency = \$2,860,000**
- **Estimated Final Completion: 5/31/2021**

Next Steps

- **Request for emergency appropriation of funds**
 - Will be presented to City Council in January; requires advertisement as public hearing item
 - All costs are being tracked and City staff will pursue cost recovery from the parties responsible for the tug
- **Public Communications team will provide messaging regarding anticipated repair process and bridge closure duration**