Rehabilitation of Bridge 2-304C

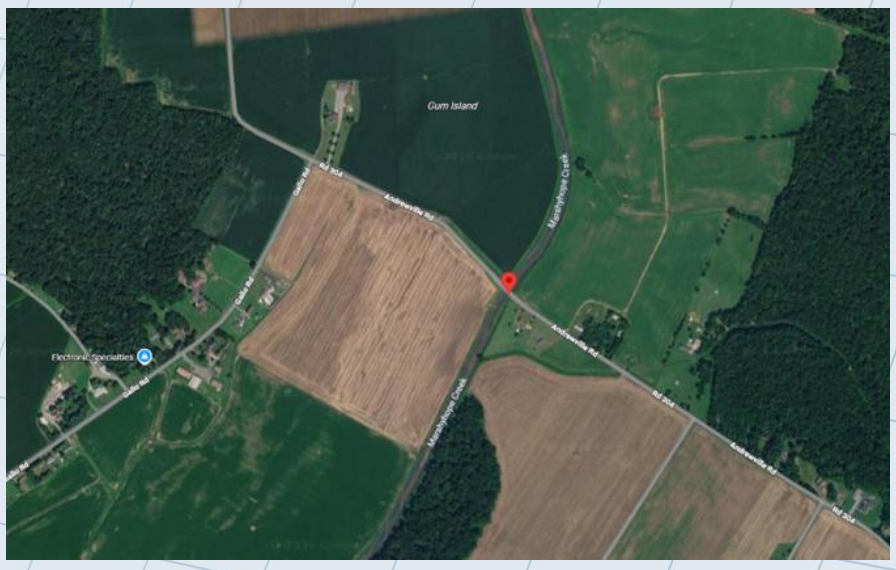
Andrewville Road over Marshyhope Creek

(DelDOT Contract T202307801)

Setting the Scene:

Bridge 2-304C is owned and maintained by DelDOT and is located near Andrewsville, spanning the Marshyhope Creek. The existing structure consists of two spans of concrete box beams with an asphalt wearing surface. The structure is supported by a set of piles (technically described as a 'bent') and a bent cap that supports the two spans between the concrete abutments and foundations.

BR 2-304C, built in 1969, is 71 feet long and carries both directions of Andrewville Road. This bridge carries 483 vehicles per day, 17% of which are trucks.



Location of Bridge 2-304C

Why is the bridge being worked on?

This bridge is currently safe for travel, but has been identified for future repairs. DelDOT inspects bridges every two years and during the 2024 inspection, the inspectors identified two primary issues with Bridge 2-304C. First, the Marshyhope Creek water flow is affecting the bridge abutments, a critical part of the bridge substructure and foundation. The water flow has caused erosion, also known as 'scour', which if left unremedied, could cause stability issues with the bridge's foundation. Second, the steel-encased concrete piles supporting the midspan of the bridge are showing substantial corrosion. Over time this corrosion will weaken the piles and DelDOT may need to place weight restrictions on the bridge.

The bridge substructure, the part of the bridge that carries the weight of the bridge and everything passing on the bridge, was rated as "Fair" condition. A "Fair" condition rating is defined by Federal standard as "all primary structural elements are sound but may have minor section loss, cracking, spalling, or scour."

Steel-encased concrete piles showing corrosion

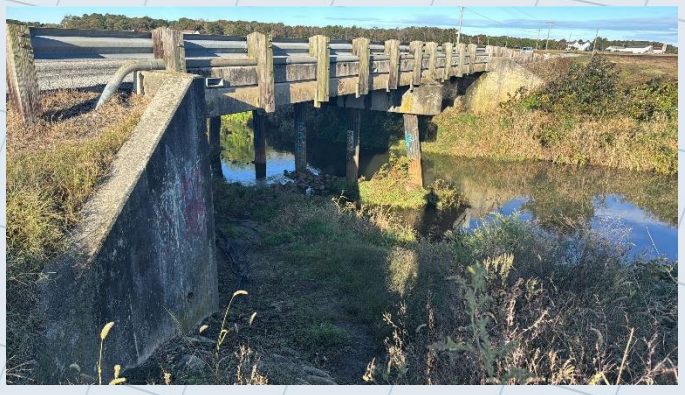
Exposed abutment footing with dislodged erosion protection

See reverse side for additional information

How do we repair scour and corrosion on piles?

The erosion protection at the abutments and wing walls will rely on adding more rocks. DelDOT will add a two-foot-deep area of rocks at the abutments. This will shield the substructure from the effects of the Marshyhope Creek water flow and changes in water level. This erosion control will protect the bridge abutments from further damage.

The steel-encased concrete piles will be wrapped in fiber-reinforced plastic sleeves. The piles will be wrapped from below the mud line to the bridge pile cap. Once the sleeves are in place, an epoxy grout is pumped into them to protect the existing surfaces from water and the air and to restore the pile to its original designed strength. This technique has been successfully used for extending the life of many bridges in Delaware and is a commonplace bridge preservation treatment worldwide.



BR 2-304C

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How will this impact my travel along Andrewville Road and when is this taking place?

Due to environmental restrictions, no in-water work may occur from late spring to mid-summer. With that, construction will either occur late summer into fall or late winter into spring. Depending on weather conditions, this project is anticipated to take approximately 5 weeks.

The bridge will be completely closed to traffic for the duration of the repairs. Eastbound motorists will turn right onto Gallo Rd, then turn left onto Cattail Branch Rd, then turn left onto Fishers Bridge Rd, then turn left onto Todds Chapel Rd, arriving back at Andrewville Rd. Westbound motorists will turn left onto Todds Chapel Rd, then turn right onto Fishers Bridge Rd, then turn right onto Cattail Branch Rd, then turn right onto Gallo Rd, arriving back at Andrewville Rd. Access to all homes will be maintained throughout the duration of the project.

Who can I contact with more questions, and how?

Any questions, comments or concerns should be directed to DelDOT Community Relations at 302-760-2080 or you may contact us by e-mail at dotpublic@delaware.gov. Please include the project name or contract number when contacting us to expedite our response to any inquiry.