

Residents of Purcell and Lexington, still reeling from the closure of the US-77/SH-39 bridge connecting the two cities of Purcell and Lexington, will have to wait until all repairs are made to the bridge before it can be opened to any vehicle traffic.

"We understand this news is frustrating for the people of these communities and we regret that it happened, but the safety of the driving public is something we will not compromise," Oklahoma Department of Transportation Executive Director Mike Patterson said.

In light of consistent, additional cracking, ODOT engineers received recommendations from expert consultants who are concerned continued cracking on the bridge would pose a serious safety issue if the bridge was to open early to light vehicles.

"We have not seen a pattern of the cracks slowing down or stopping and we cannot, in good conscience, let even light vehicles on the bridge without the fear of more cracks causing a possible collapse," ODOT Chief Engineer Casey Shell said.

When the emergency contract for repairs was awarded on February 14, there were 10 cracked areas in the lower chords of the bridge and officials had hoped to open to light vehicles in 45 days. The number of cracked areas has increased to 41 locations and will most likely increase. Recent frigid temperatures may have contributed to the acceleration of the cracking in weakened areas.

Because of the day-to-day uncertainty, all of the weakened areas on the bridge must be repaired before any traffic can be allowed on the bridge, which is currently expected to be opened by early June. Hefty incentives placed on the contract for finishing early could make the June completion much sooner. The contractor will receive incentives of \$1,500 - \$2,500 for every hour work is completed early.

The cracks formed due to a recent repair project that was finishing up in January and involved welding on members of the bridge that were made of manganese steel alloy. The department was unaware that portion of the bridge contained the exotic alloy when designing the repair project. The welds caused the manganese to become brittle and cracks formed when crews were tightening tension rods. This new development seeks to repair all weakened areas that could crack before opening.

The cracks are of particular concern, as the design of the bridge is fracture critical, meaning that if one part of the bridge fails, the entire bridge could collapse. Fracture critical refers to the design of the bridge and not the bridge's condition.

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