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NEWS

DOT to shore up beams in bay bridge

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Four deteriorating steel beams under the Irondequoit Bay Bridge roadway are to be reinforced later this winter, a fix that that should allow the re-opening of two lanes now closed to traffic.

Problems with the beams, which are slightly worn and bent at the outside ends, forced closure of the eastbound and westbound right-hand lanes in October. Four other lanes remain open to traffic, and state officials continue to stress that the bridge is safe.

Repair work is set to begin next month and if all goes well could be finished by late March, allowing the lanes to re-open then, said Lori Maher, a spokeswoman for the New York state Department of Transportation.

"We have a plan. That's good news," Maher said this week.

The lane closures have caused some hardship for drivers of the 65,000 vehicles that cross the Irondequoit-to-Webster bridge each day.

"There is no doubt reducing the bridge to two lanes (in each direction) does create a traffic impact, which is most evident in the morning and afternoon rush hours," Maher said, who added that DOT has engaged a towing service and worked with local responders to clear breakdowns and accidents quickly.

Some drivers have elected to use the two closest alternate routes, Empire Boulevard at the south end of the bay and the seasonal outlet bridge at the bay's north end, though neither is an ideal route. The two-lane outlet bridge is a bit out of the way, and using Empire means negotiating steep hills on both sides of the bay, which can be difficult in snowy weather.

The lanes were ordered closed, and overweight trucks banned from the bridge as well, after a regularly scheduled inspection in late August found problem with the steel "floor beams," which run perpendicular to the roadway and lend it support.

Inspectors discovered that the outside ends of four beams were bent slightly downward. Maher said the beams also had thinned slightly in spots, a process called section loss that is well-known to bridge engineers.

The bridge has a total of about 80 floor beams.

To reinforce the beams, 25-foot-long steel "cover plates" will be bolted to the bottom of each affected length of beam. "These plates will provide additional strength," Maher said.

A DOT contractor also will replace four much smaller steel connector plates that also show signs of wear.

Though exactly how the work will be carried out hasn't been determined yet, Maher said it's expected the project will begin in February and take six to eight weeks.

There is no estimate of the work's cost. The work will be done under an extension of an existing contract with Crane Hogan Structural Systems of Ogden, which was awarded a contract to paint and performance maintenance on the bridge in 2011.

The exact cause of the problems with the beams hasn't been determined, according to Maher. "There is a hole in every theory that's been suggested so far," she said.

Identifying the root cause is less important than coming up with the correct repair, she said. "We're confident we know the condition of it and we're confident that these repairs are going to eliminate any other concerns at that location," she said.

One possible cause is that the steel expansion joints immediately above the beams could have played a role.

The joints, which allow the bridge to flex in response to stresses, were found to have deteriorated and were allowing water and road salt to leak through onto the steel members beneath, she said.

"The bad joints probably contributed. We don't know if that's exactly why, or if we can say it was just that. There were probably multiple factors over time," Maher said.

Deicing salt leaking through bridge joints is a known cause of section loss on bridge support beams, according to a study published by Michigan transportation officials in 2005.

Crane Hogan replaced the bay bridge's deck joints last summer, an exercise that provided workers and DOT officials a view of the beam underneath them. Nonetheless, Maher said, they didn't notice the bending and deterioration.

The bay bridge, at 2,321 feet the longest span in Monroe County, was opened to traffic in February 1970. Despite the need for a series of repairs, including those to the expansion joints and concrete in the bridge support piers, the bay bridge should be usable for years to come, Maher said.

"New bridges are usually in the range of 50 years (life expectancy)," she said. "But if they're maintained well, they can last much, much, much longer, and that's what we're trying to achieve."

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