

I-10 at washed out bridge in California to reopen Friday

July 22 2015, by Justin Pritchard



This aerial photo shows the collapsed elevated section of Interstate 10, Monday, July 20, 2015, in Desert Center, Calif. All traffic along one of the major highways connecting California and Arizona was blocked indefinitely when the bridge over a desert wash collapsed during a major storm, and the roadway in the opposite direction sustained severe damage. (AP Photo/Matt York)

The main route connecting Los Angeles and Phoenix, which was closed when a surge of floodwater damaged several bridges spanning small

desert gullies, is set to partially reopen Friday—far sooner than officials first estimated.

The California Department of Transportation had expected repairs on Interstate 10 to take weeks but announced Tuesday that it will be able to handle traffic again less than a week after the spans were damaged.

Travelers will still face delays, however, because just one lane will be open in each direction where one bridge collapsed.

The hardest hit bridges were over Tex Wash, a normally dry gully that filled with rainfall Sunday amid the kind of sudden, intense storm that can happen in the desert.

That fast-moving water severely eroded soil under the concrete that anchors one side of the interstate's westbound span, making it unsafe.

The eastbound span fared worse, buckling onto the desert floor. One driver was seriously injured when his truck partly fell off the roadbed toward the raging water below.

In light of the damage, some outside engineers said Caltrans may need to adopt tougher design and protection standards for highway bridges, particularly with heavy rains possible in the coming months due to the ocean-warming phenomenon known as El Nino.

While El Nino comes and goes periodically, the general warming of the Earth could have longer-term implications for bridges over desert washes. According to the 2014 U.S. National Climate Assessment, "recent trend towards increased heavy precipitation events will continue" even in the Southwest, where rainfall is expected to decrease overall.

I-10 typically sees 54,000 vehicles a day in the area of the washout,

about 50 miles west of the California-Arizona line, according to Caltrans. That traffic has been taking a detour of several hours over smaller desert highways.



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Work on rebuilding the eastbound span will start after one lane of traffic in each direction is routed over the westbound span starting Friday; Caltrans had no timetable for its reconstruction.

Caltrans initially said the interstate would be closed indefinitely. By the end of Monday, an agency spokesman projected that the limited

reopening would take weeks. On Tuesday afternoon, Caltrans credited an emergency construction contract for the new schedule.

The faster timetable emerged even as inspectors found two bridges near Tex Wash also suffered erosion. Those repairs would be completed Tuesday, Caltrans said.

On Sunday, flooding touched off by unusually intense July rainfall of nearly 7 inches washed away boulders that Caltrans had placed along the gully's bank to protect against erosion. Once that "armor" was gone, the water made quick work of the soil beneath the abutments where the bridge connected the road bed to solid land.

The bridge over Tex Wash was built in 1967 and easily passed a March safety inspection. Those inspections focus on the bridge itself, but inspectors should note any erosion—and the inspection report recorded none.

Caltrans had been aware that water could focus its full force on the eastern bank of Tex Wash, rather than the middle of the channel.

In a 2001 report, part of statewide assessment of bridges that might be susceptible to serious erosion, inspectors noted a "potential vulnerability" due to the angle of incoming water, according to Kevin Flora, a Caltrans bridge engineer.

At the time, there were no signs of past erosion, according to the report Flora reviewed. The protective sheathing of boulders seemed to be working.

As a result, Flora said, inspectors did not add Tex Wash to 67 other bridges on the state's "scour critical" list, which would have meant closer monitoring and possible reinforcement. Speaking by phone from the

scene of the collapsed bridge, he described that as a "judgment call."

Any decision on whether to change the protection or maintenance of bridges over desert gullies will come later, according to Caltrans spokeswoman Vanessa Wiseman.

"This was an extreme weather event and it will definitely be used as a valuable learning experience," she said.

Armin W. Stuedlein, an engineering professor at Oregon State University who studies how structures such as bridges interact with soil, said that in the wake of the collapse, there may be "room for improvement" in bridge design and protection standards.

Stuedlein noted that this stretch of I-10 has several dozen similar bridges.

"Any one of those gullies on any given storm event could be the bad actor," he said.

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