Fact Sheet: Colorado River Impacts Summer 2017 - June 2018



SAFETY MESSAGE

River users should stay river right of the existing center pier, and avoid the riverbanks approaching the Grand Avenue Bridge.

River users should know if the river is open before launching their vessel. 24/7 and periodic closures will be necessary for the deconstruction and reconstruction of the new Grand Avenue Bridge for user safety.

What River Users Expect:

The Grand Avenue Bridge team is installing a second causeway on the north side of the Colorado River this summer to stage construction equipment. River velocities will be faster than the 2016 season.

Upstream of the Grand Avenue Bridge

As river users approach the Grand Avenue Bridge, the river flow will slow down and then accelerate approaching the causeways. At the beginning of the north and south causeway, approximately 500 ft. before the bridge, river users will "drop-in", and river velocities will increase. The causeways will be noticeable, and the distance between the center piers and riverbanks will appear closer.

Waves will develop to the right and left of the center pier. Rapids (water jumps) will be just south of the center pier. Easier water will be on the right side of the center pier. The calculated velocity flows with the causeways in this area are 3-4 ft. per second more than the current velocity.

River users are advised to stay river right at the Grand Avenue Bridge.

Downstream of Grand Avenue Bridge

Once through the causeway area, flows will return to normal approximately 1,300 feet downstream from the existing bridge.

Anticipated River Put-in Closures (Four Separate Timeframes of Impacts)

| | TIMEFRAME | DURATION OF IMPACT | ACTIVITY |
|---|--------------------------|--|----------------------|
| 1 | July, August (low water) | Approx. 3 weeks; spotter in place, potential holds depending on boat traffic | Build north causeway |
| 2 | Begins Aug. 14 | 5-10 days of FULL closures (24/7) | GAB deconstruction |
| 3 | End-August, Early-Sept. | 10 days of FULL closures (24/7) | GAB girder erection |
| 4 | September, October | Spotter, no anticipated closures | GAB deck pours |

3 PM Conference Calls for River Users - Email us at info@grandavenuebridge.com to be added to our distribution list.

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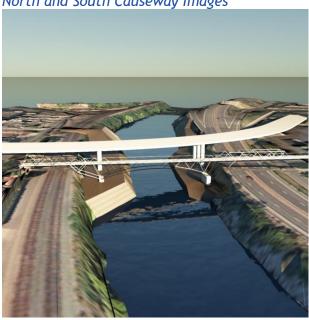
Project Overview

The Grand Avenue Bridge project requires two causeways to be constructed to provide access to the north and south piers of both the traffic bridge and pedestrian bridge. The causeways will be used as a platform for heavy equipment such as a crane and drilling rigs.

The causeways were designed with river safety as a top priority. Designers considered the river impacts for average off-peak flows of 1,400 cfs to a 10-year flood (21,500 cfs) to determine size and placement of causeway rock material.

In July based on cfs of the river (water levels), the contractor will construct a north causeway on the north bank of the Colorado River (river right). The north causeway will serve as a landing for large cranes to access the new Grand Avenue Bridge construction site. The installation of the north causeway will restrict the river more than in 2016. Anticipate increased velocities approaching the Grand Avenue Bridge.

North and South Causeway Images





Flow Rate / Cubic Feet Per Second

River users will experience increased flow rates in this area. The causeways are constructed to meet the 10-year flood rate.

Flow Rate: Flow rate is volume of water passing a point in a fixed period of time. Flow rate is measured in cubic feet per second (cfs). The flow rate in a river is determined by multiplying water velocity by the area. Flow Rate = Velocity x Area

Typical off-peak flow rates are 1,400 cfs. The causeways have been designed for flows up to the 10-year event of 21,500 cfs.

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