

# George Washington Bridge (USA)

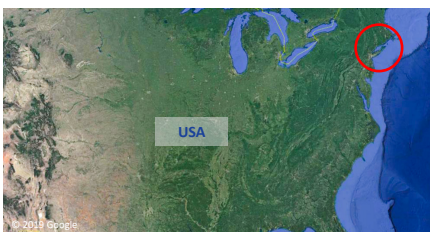


## Project description

The George Washington Bridge is a double-decked suspension bridge that connects the New York City borough of Manhattan with New Jersey across the Hudson River. Named after the first president of the United States, the bridge is believed to be the world's busiest motor vehicle bridge, carrying over 103 million vehicles in 2016 – over 280,000 vehicles per day, and over twice as many axle loads, each impacting on the expansion joints that facilitate the superstructure's movements.

After 89 years in service, it is planned to do a full replacement of the existing sliding finger expansion joints and substructures, as originally designed by the renown Civil Engineer Othmar Hermann Ammann.

The George Washington Bridge connects Manhattan with New Jersey across the Hudson River

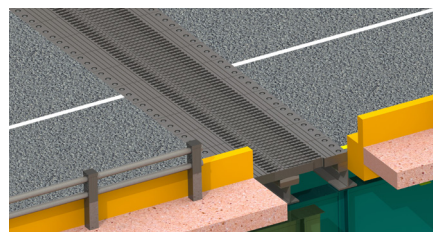


## mageba scope

mageba is supplying a total of eight sliding finger joints ranging in longitudinal movements from 18 to 52 inches. The heaviest joint weighs 156,000 pounds (71 tons) once fully assembled. mageba is fabricating the finger plates, as well as the substructures that attach the finger joints to the bridge. The joint substructures are 3 sets of dams (W beams) that connect to the bridge floor beams. The finger plates connect to the outer dams with long bolts through a series of fill plates that provide the required height for assembly. The center dam, is not physically connected to the finger plates, allowing the finger plates to slide over the top stainless steel surface.

The finger plates and substructures will be fully assembled in the shop in lengths of up to 2 bridge lanes, and delivered to site ready to be attached to the bridge, allowing a quick bridge installation during the staging work.

Simulation of a fully installed finger joint on site



## Highlights & Facts

### mageba Products:

Type: TENSA®FINGER GF finger joints  
 Feature: Movement of 18 to 52 in (457 to 1,320 mm)  
 Installation: 2021

### Structure:

City: New York & New Jersey  
 Country: United States  
 Type: Suspension bridge  
 Main span: 3,500 ft. (1,067 m)  
 Length: 4,760 ft. (1,451 m)  
 Completion: 2021  
 Owner: Port Authority of New York & New Jersey  
 Contractor: El Sol Contracting & GCOM Construction JV  
 Engineer: Modjeski & Masters Engineering

Close-up render of the finger expansion joint

