



Since 1931, the Stillwater Bridge has carried vehicles, pedestrians, and other traffic across the St. Croix River between Stillwater, Minnesota, and Houlton, Wisconsin. Initially constructed as a replacement for a 20-year-old swing bridge, the new vertical-lift bridge quickly captured the hearts and minds of Stillwater's residents, serving as an inspiration for everything from paintings and poetry to bumper stickers and baseball caps. As the decades passed, the Stillwater Bridge continued to cement its place in the iconography of eastern Minnesota and western Wisconsin and in 1989, was recognized with a listing on the National Register of Historic Places.

Despite its iconic design and historic status however, the bridge also had a growing number of detractors. During an annual fracture-critical inspection in 1994, the deteriorating condition led to a reduction in the bridge's capacity to 28 tons - a de-facto restriction for many commercial trucks. The following year's inspection discovered that the connections between the bottom chords of the trusses and floor beams were severely corroded. The bearing assemblies were also severely corroded, the east portal bracing had been damaged by a vehicle and inadequately repaired, and the sidewalk superstructure was in poor condition.

Plans for the construction of a new bridge, the St. Croix Crossing Bridge, to replace the Stillwater Bridge were eventually finalized leaving the question of what to do with the historic bridge. Given its communal adoration and historic stature, a plan was put in place to adapt the bridge's structure to carry only pedestrian and bicycle traffic.



The restoration and conversion of the bridge would include repairing the truss connections, repainting the bridge in its iconic green, rebuilding the concourse, and updating all of the existing mechanical and electrical systems. Mechanical engineers and experts in bridge design were brought in to perform the renovation and ordered over 500 tons of Black Diamond Coal Slag abrasive product to blast through more than a half-century of built-up rust and neglect.

Having to clear away the amassed corrosion spanning the bridge's 189,000 square feet steel structure, the engineering team knew they needed a steady and readily available supply of abrasive products. They also knew they needed a large supply of Blastox in order to stabilize the lead in the bridge's original paint and ensure that any waste produced during the blasting and restoration process was rendered non-hazardous.

The foreman, Buzz Wagner, had previously used U.S. Minerals' Black Diamond abrasive products on similar bridge projects and knew that the company's Roberts, Wisconsin plant was very close to the job site. As a licensed Blastox blender, U.S. Minerals could also address the concerns with the lead in the original paint. U.S. Minerals, by being able to address these concerns, was able to save Buzz nearly \$304 per ton in costs associated with the disposal of hazardous waste that result from using alternative abrasive products like steel grit.

Over the course of two seasons, the iconic bridge would be reborn and in June of 2019, the Stillwater Bridge was reopened to the public – finally free of its rusted shackles. Freshly repainted in its historic green, the Stillwater Bridge now stands prouder than ever thanks to the love of the surrounding community, the dedicated work of the restoration engineers, and U.S. Minerals' abrasives which, by creating the cleanest possible surface profile for the fresh application of paint, will help prevent rust and corrosion for another 30 years.

BY THE NUMBERS

30 Years

Estimated preservation period the blasting and restoration procedure has created for the bridge.

500 Tons

Amount of Black Diamond Coal Slag abrasive product used to blast through more than a half-century of built-up rust and neglect.

189,000 sq. ft.

The surface area of the bridge's steel structure blasted to remove corrosion and rust.

4 MIL

SURFACE PROFILE
achieved using 1630 grade coal slag

15 %

BLASTOX RATE

5.8 lbs/sq ft

CONSUMPTION RATE



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PLANT LOCATIONS

Anaconda, MT | Coffeen, IL | Galveston, TX
Harvey, LA | La Cygne, KS | Roberts, WI