

NDDOT FAST Fact Sheet



Spray disc in action on Interstate 29 Buxton Bridge south of Grand Forks, ND

What does the NDDOT do to address slippery conditions on bridges?

A technology installed on the North Dakota Department of Transportation's (NDDOT) roadway network to help address slippery conditions on bridge surfaces is a system called Fixed Automated Spray Technology (FAST). This system, located in conjunction with an *Environmental Sensor Station (ESS)*, is designed to predict various surface freezing temperatures, and apply **anti-icing** products to the roadway in an effort to prevent slippery conditions.

Why do we use the FAST System on some bridges?

Safety is a top priority with the NDDOT. FAST systems have been installed throughout the United States since the late 1990s. Two examples of existing FAST systems within North Dakota are located on I-29 at the Buxton Bridge south of Grand Forks, ND and I-94 at the Red River Bridge between Fargo, ND and Moorhead, MN. The Buxton Bridge system was installed in 2001, and the Red River Bridge system was installed in 2006. According to a recent study, crashes at the Buxton Bridge were reduced by 66 percent and crashes at the Red River Bridge were reduced by 50 percent after the installation of the FAST system.



FAST plumbing system on Interstate 94 Red River Bridge between Fargo, ND and Moorhead, MN



Pump house and ESS on Interstate 29 Buxton Bridge south of Grand Forks, ND

How does the FAST system work?

Liquid product is pumped through plumbing attached to the side of the structure and connected to spray discs in the surface of the bridge deck. The primary components of a FAST system are: pump house, ESS, liquid plumbing hardware, and spray discs. The pump house contains the storage tanks and pump.

What does the FAST System look like?

In action, the device resembles a sprinkler head. However, it is actually a spray disc designed specifically for the roadway. It is flush with the roadway surface, so there is no danger to you or your vehicle if you happen to drive over the disc. As always, use caution when changing lanes in the winter while crossing bridge decks as they pose a greater risk to freezing conditions.



Spray disc on Interstate 94 Red River Bridge between Fargo, ND and Moorhead, MN

Who turns on the FAST system?

The FAST system can be activated automatically, manually or remotely by the NDDOT when weather conditions warrant the use of anti-icing technology. Manual operation is done at the pump house or remotely by using a personal computer. Automated operation is the most common and is triggered as the ESS gathers information, including surface temperature, dew point, snow precipitation rate and wind speed. The ESS station then gives the FAST system an order to act accordingly. The current limitations for the automated FAST system are to not spray in winds greater than 15 mph or when temperatures reach below 12 degrees Fahrenheit.



Spray nozzle in guardrail on Interstate 29 Buxton Bridge south of Grand Forks, ND

More Information

For more specific facts about the FAST system, please visit www.Ugpti.org. For more NDDOT winter maintenance information, please feel free to visit us at www.dot.nd.gov/. Under the "Travel" tab, click snow and ice information.