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De-icing solution makes ‘significant’ difference

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The de-icing solution added to the southbound lanes of the Mitchell Bridge has been coined by a transportation official to possibly be the “biggest innovation in highway safety since the invention of the snowplow.”

Results of a recent study of the surface overlay’s first winter of activity are substantiating that claim.

Crash data shows a “significant accident reduction even in a mild winter on bridge lanes where SafeLane surface overlay is installed,” according to an announcement released earlier this week by Cargill.

“The Hibbing information really validates everything we have been saying about the product and seeing at other sites,” said Bob Persichetti, general manager for SafeLane surface overlay. “We are very satisfied to actually see a reduction. There it went from seven or eight incidents a year to zero, and we’re seeing that across the board at all of the sites.

“We feel very proud that we can make a difference in improving the overall safety for the traveling public.”

Licensed and marketed by the Minnesota-based company, SafeLane is made up of a patented epoxy and aggregate rock laid over the existing pavement.

Liquid anti-icing chemicals are applied by Minnesota Department of Transportation (Mn/DOT) plow trucks to the overlay before ice or snowstorms hit.

The material then acts like a sponge, storing the chemicals inside and automatically releasing them as conditions develop for the formation of ice or snow. It keeps releasing the anti-icing chemicals over multiple events, thereby reducing the likelihood of accidents and the need for highway crews.

According to company literature, the overlay also provides superior friction which gives drivers better traction year-round.

The SafeLane overlay was installed on the southbound lanes of Mitchell Bridge in July 2006. It was the first application of the overlay in Minnesota. The next closest location was on an on-ramp to the Blatnik bridge between Duluth and Superior, Wis.

No crashes were reported on the southbound lanes of Mitchell Bridge during last winter. That compares with eight incidents that occurred on the northbound control lanes during the same time.

Those incidents included three crashes attributed to weather, three to unsafe or illegal speed and two from unknown factors. One crash involved injury.

Dr. John Evans of the Department of Chemistry at University of Minnesota-Duluth evaluated the overlay’s performance on the Mitchell Bridge.

After analyzing crash data for the past three years, Evans noted in a prepared release that “while one would be cautious of over-interpreting such small data sets,” the evidence “strongly suggests that this overlay system is strongly contributing to accident reduction.”

Persichetti said they anticipated good numbers, but were even more thrilled to see it reduced to zero.

“What we’re seeing with Minnesota is similar to what we’re seeing with other states. They want it tested — to see what installation is like, how it performs in the wintertime, how it really holds up through the winter and if it makes a difference,” he said.

A 2005-06 performance report commissioned by Cargill found no weather-related crashes at any of the nine test sites then in place. The 2006-07 report once again found significant accident reduction rates among the current 26 road and bridge test sites.

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De-icing solution makes 'significant' difference (continued)

John Bray of Mn/DOT called the local and overall data encouraging.

"The study indicates the product has value," he said. "It was not a very heavy winter. However any time you can achieve a reduction in crashes during the wintertime is a plus. What this has shown is that the stuff works and that it does it well."

Bray said he was surprised and impressed at how long the de-icing solution is retained and continues working after being "charged" by chemicals.

While recognizing that safety studies need to be conducted over a number of years to yield statistically significant results, Bray said a normal or harsher winter may have rendered better data results.

"Although the jury is still out, it's proving to be a good product," he said.

Bray also complimented the product on its added benefit of acting as a sealant.

"It basically glues the pavement together and protects the old pavement from any effects of moisture," he said. "Nothing gets wet because water can't get down there. It's incredible stuff — like glue on steroids."

Congressmen Jim Oberstar is also a fan of the product.

"This could be the most significant highway advancement in 40 years," he said while on the bridge in July. "There's two principles working here. One, it will save lives. And two, it will save bridge and roadway surfacing and extend the usable life of a highway from 15 to 20 years to 35 to 40 years."

Transportation officials plan to continue evaluating the product for a few more years. During this past summer, bridges in Alexandria, Barnesville and Bemidji also received the SafeLane surface overlay and will be eyed as test sites.

If the product continues to do well, company officials said it could become standard on a variety of surfaces — from airport runways to crosswalks.

"Our hope is that we will take this to the other side (of Mitchell Bridge) for treatment and to other structures," said Persichetti.