

Mayor: Hot-in-place asphalt repair explained

Mike Vandersteen 5:24 p.m. CDT September 5, 2015



(Photo: Chalabala, Getty Images/iStockphoto)

Hot-in-place asphalt recycling is the process that the city used to give some of our streets a fresh, smooth driving surface last month. This project allowed the Department of Public Works to test this method to see if it produced a new way to maintain our streets and stretch the limited dollars we have for city road maintenance.

After investigation and attending a demonstration of the process last fall in Manitowoc County, the DPW requested separate bids to do a traditional milling of the asphalt and filling with new asphalt and the hot-in-place asphalt recycling. The streets selected were North Eighth Street from Superior Avenue to North Avenue and North Avenue from 10th Street to Sixth Street. When these bids were compared, the hot-in-place bid was almost half as expensive as the traditional mill-and-fill method.

DPW decided to use the low bid and add additional streets to the project. After evaluating both the surface and the buried utilities of many streets, Michigan Avenue from Eighth to Fourth streets, North 15th Street from Pennsylvania Avenue to New Jersey Avenue, Union Avenue from South 17th Street to Sauk Trail, Taylor Heights Frontage Road and Eighth Street was lengthened from Highland Terrace to Superior Avenue were added to the list of streets for 2015.

The equipment used by Gallagher Asphalt for the hot-in-place asphalt recycling consisted of two trucks. The first truck blasted the roadway with flames to heat up the road surface to 200 degrees. The second truck continues to concentrate a propane gas flame on the road until it is heated to 325 degrees and the heat has reached 4 to 6 inches down into the asphalt road mat.

Next, spring-loaded tines set hydraulically at prescribed depth will scarify the existing road surface while dragging over existing structures like manhole covers and water lateral shutoffs to avoid damage to these utilities. As the heated asphalt is broken up, the first application of hot oil is sprayed on the loose aggregate. Then, full-width reversible augers mix the hot asphalt with rejuvenating oil, and the asphalt is redistributed back to the existing road grade. The finished roadway is compacted with a roller that results in a new, smooth driving surface.

During the recycling process, traffic can be routed around the Gallagher trucks, and after the asphalt is compacted, traffic on the finished road can be resumed. A few days or weeks later, a Miegs Onyx road sealant is applied to seal up pores in the road surface. The sealant also contains small aggregate that delivers a smooth driving surface. This process has a minimal impact on the neighborhood when compared to the traditional mill-and-fill project duration.

The total investment using the hot-in-place asphalt recycling in 2015 was \$450,000, or about \$31.07 per lineal foot with an average 36-foot width road. This year's hot-in-place road project rejuvenated a little less than 2 miles of city roads. Approximately 60 of the 200 miles of roads in Sheboygan are asphalt streets where the hot-in-place system is a viable option.

The hot-in-place roads are expected to last seven to 10 years. Another treatment of the road sealant may be needed in five years to achieve this road expectancy. Other factors like traffic, usage by heavy trucks and movement by underlying concrete road sections can also affect the life of this road improvement.

I have talked to representatives of two other communities that have used hot-in-place on their roads. They are positive about the program and the results in their community, but neither has been using the hot-in-place long enough to have them comment on the life expectancy.

Mike Vandersteen is the mayor of Sheboygan.

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