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Across Minnesota, asphalt roads crumbling due to faulty mix

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Woodbury may have to spend \$20 million to fix crumbling street pavement that relied on a state formula for mixing blacktop, one of at least 35 Minnesota cities and counties reporting such problems.

Among other governments having similar street difficulties since the 1990s are Edina, Stillwater, Maplewood, Roseville, White Bear Lake, Rochester, Elk River and Goodhue and Ramsey counties. Of the 35 respondents to a Minnesota Department of Transportation (MnDOT) survey, five cities and one county said that more than half of their streets had deteriorated.

But MnDOT spokesman Kevin Gutknecht said Friday that the asphalt mix was only a recommendation and that “nobody’s required to use it.”

One of the latest cities to raise a red flag is Woodbury, where the City Council was advised in mid-October that “unprecedented failures” could affect nearly one-third of the city’s streets and cost more than \$20 million to fix.

“This trend is specifically being seen on roadways built 10 to 25 years ago,” City Administrator Clint Gridley told the council. “Similar roadway failures are being experienced throughout the state, although Woodbury’s premature failures may be more noticeable because of the high number of roads constructed during the years stated.

“Road surfaces with the life expectancy of 30 years are lasting only 15 years,” he said.

Gridley said that statewide changes in blacktop mix designs in the early 1990s resulted in more porous pavements that allowed water to seep through the seal coat layer. That moisture caused asphalt to decay prematurely, leading to pitted, rough roads, he said.

Gutknecht said that how asphalt is mixed is just one of three steps of road building, along with preparing roadbeds and applying pavement. “It’s not just spreading peanut butter on. It’s a factor of those three elements,” he said.

Moreover, he said, state highways “handle traffic in a different way than a city does, or a county does,” and local governments must adapt MnDOT recommendations to their individual needs.

Jill Thomas, executive director of the Minnesota Asphalt Pavers Association, a trade group representing 31 contractors, was skeptical that the state’s design mix had caused the pavement problems.

“I’ve heard of this theory, but it’s not been proven,” she said.

Thomas said that a deeper “forensic” study was needed to consider causes such as snowplowing in winter and the role of chip sealing, and added that his association would willingly participate in such an investigation.

Even if the state doesn’t tell Woodbury what to do, “they do provide all the research,” said Klayton Eckles, the city’s engineering and public works director. “Typically, that’s what everyone uses. Think of it as a cookbook of different blacktop recipes.”

Cities and counties responding to the MnDOT study were a “sliver” of local governments experiencing problems with



St. Paul’s plant churns out 200 tons of hot asphalt mix per hour. That’s enough to fill — well, a whole bunch of holes.

Elizabeth Flores, Star Tribune

blacktop mix, Eckles said.

Mix designs were produced in a state laboratory and cities adapted them, he said, but problems began about 20 years ago at a time when local governments wanted more cost-effective means of applying blacktop.

"We know that construction practice is not the cause of a good portion of this," Eckles said. "Woodbury made a lot of blacktop roads in the 1990s, and we probably saw [more] failure than any other city. It's probably at least a decade of pavement that's been laid down that has these problems."

A MnDOT report issued in April concluded that most of the "distress" had occurred on urban streets with curbs and gutters.

"This distress starts as a small blister and becomes enlarged to the size of a small pothole, at which time the chip seal delaminates off of the asphalt pavement," the report said. "Better construction methods are recommended."

Woodbury is working with MnDOT to determine how best to maintain existing streets and slow or eliminate their deterioration, Gridley said. The city is forming a citizen task force to further examine the problem.

Two other cities reporting extensive crumbling, Brooklyn Center and Eden Prairie, also were selected for the MnDOT study.

Eckles said he can't say with certainty whether asphalt mixes being used today will deteriorate in the same fashion that the 1990s mixes did, but he's hopeful they'll last longer. The sudden appearance of crumbling roads in Woodbury wasn't pretty, he said, nor was the patching that followed.

"Certainly people are concerned, especially people in the neighborhoods that saw their roads fall apart in the course of a season," he said.

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