



Senate Fiscal Agency
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Senate Bill 379 (as enacted)
Sponsor: Senator Roger Victory
Senate Committee: Transportation and Infrastructure
House Committee: Transportation
Ways and Means

PUBLIC ACT 310 of 2020

Date Completed: 4-8-21

RATIONALE

During the winter months, the Michigan Department of Transportation (MDOT) and local road authorities use certain substances to prevent the accumulation of ice on roads (anti-icing) and to remove ice from the roads (deicing) to ensure safe travels for motorists. Anti-icing consists of applying liquids to the roadway before, or at the onset of, a winter storm; deicing consists of applying liquid or other substances during or after a winter storm. Anti-icing and deicing agents in Michigan currently consist mostly of brine or salt. According to reports from the United States Department of Transportation (USDOT), these materials have a negative impact on transportation infrastructure, motor vehicles, and the surrounding natural environment.

A few communities throughout Michigan, such as Farmington Hills and Frankenmuth, use agricultural additives in their anti-icing and deicing practices, which allows these communities to use less salt on roadways. Specifically, these communities use sugar beet byproducts from farms in Michigan. Some believe that incorporating these agricultural additives into current anti-icing and deicing practices may have benefits for transportation infrastructure, vehicles, and the environment. Accordingly, it was suggested that MDOT implement a pilot program on the use of agricultural additives to control ice on roads throughout the State.

CONTENT

The bill amended Public Act 51 of 1951, the Michigan Transportation Fund law, to do the following:

- Require MDOT to implement a pilot program on the use of agricultural additives to control ice on certain roads in the State.**
- Require MDOT to submit a report on the pilot program to members of the House of Representatives and the Senate committees with jurisdiction over transportation by June 30, 2025.**

The bill took effect March 24, 2021.

Specifically, the bill requires MDOT to implement a pilot program on the use of agricultural additives to control ice on public roads, highways, and bridges in the State and to review the potential efficacy and environmental impacts of agricultural additives, while maintaining the safety and mobility of the motoring public.

At a minimum, the pilot program must be designed to study liquid-only plow routes and must do the following:

- Identify and use methods for the use of agricultural additives, including liquid sugar beet byproducts, that promote surface adhering and reduce the freezing point of applied substances.
- Examine results from expanded use of agricultural additives, including potential environmental and fiscal impacts.
- Develop best practices and technical guidelines for the use of agricultural additives, and for the expansion of the use of agricultural additives in the pilot program.
- Convey program information and guidance to local road agencies.
- Use agricultural additives in at least three test locations, each containing public roads, highways, and bridges that may be affected by corrosion and a body of water that may be affected by other commonly used deicers.
- Include collaboration with at least one local road agency.

By June 30, 2025, MDOT must submit a report on the pilot program to the members of the House of Representatives and Senate committees with jurisdiction over transportation. At a minimum, the report must summarize all of the following: a) pilot program activity, b) review results, and c) potential best practices for the statewide use of agricultural additives based on the results of the pilot program.

Proposed MCL 247.661a

ARGUMENTS

(Please note: The arguments contained in this analysis originate from sources outside the Senate Fiscal Agency. The Senate Fiscal Agency neither supports nor opposes legislation.)

Supporting Argument

According to research supported by the USDOT, the United States spends \$2.3 billion annually on anti-icing and de-icing measures, and the corrosion and environmental impacts associated with these strategies increase the cost of road maintenance and repair by approximately \$5.0 billion. In addition, information from the North Dakota Department of Transportation indicates that anti-icing measures are the most effective and efficient way to prevent ice from affecting the drivability of roads in winter months. Anti-icing measures prevent ice and snow from adhering to the road, which makes the snow and ice easier to remove. The proactive approach also ensures that more of the salt-based, ice prevention substance stays on the road, saving money and preventing the externalities that result from salt run-off.

Agricultural additives, such as sugar beet byproducts, may assist in the efficacy and efficiency of this proactive approach because they are used most effectively in anti-icing measures. The additives help the anti-icing substances adhere better to the road. The improved adherence ensures more of the substance remains on the road and improves the effect of the anti-icing agents. By studying the effects of agricultural additives in anti-icing methods in Michigan, the State may find ways to save money and improve road conditions in a safe and effective manner.

Supporting Argument

Anti-icing and deicing measures on roadways in the State rely heavily on salt, which often has negative effects on surrounding vegetation and water supplies from run-off. According to a Rutgers University study on the effects of road salt on surrounding vegetation, road salt run-off can affect the soil profile, which changes the viability of growth for vegetation in the area. In other words, if a large amount of salt run-off concentrates within the soil, vegetation tends to absorb these substances, instead of nutrients and minerals needed for growth, such as potassium and phosphorus. This process can lead to depressed growth and yield as the soil becomes less viable for plants to grow.

The run-off from current deicing agents also affects the surrounding groundwater and surface water. The run-off often enters the soil with precipitation and, in large quantities, can contaminate these sources of water. Contaminated ground water can lead to contaminated drinking water as it is pulled out of the ground for use from wells or regional water systems. This effect is worse in

smaller streams and other bodies of water and can lead to changes in the biological and chemical make-up of those ecosystems.

According to studies from the USDOT and other transportation departments, the implementation of agricultural additives may reduce the amount of salt products needed to maintain safe roads. For example, the public works department in Farmington Hills reported that the implementation of agricultural additives into anti-icing and deicing measures decreased the amount of salt used annually by 30%. A pilot program on the use of agricultural additives in Michigan may produce similar results, leading to a larger scale effort to reduce the amount of salt run-off during the winter months.

Legislative Analyst: Tyler VanHuyse

FISCAL IMPACT

The bill will have a minor, negative fiscal impact on the State and no fiscal impact on local units of government.

The bill requires MDOT to test the use of agricultural additives in the salt mixture it uses to control ice on the roads during the winter months. Agricultural additives, such as sugar-beet byproducts, may reduce the amount of salt needed to combat icy road conditions, reduce salt corrosion on the roadways and on maintenance equipment, and reduce man-hours spent salting roads. Studies have shown that agricultural additives added to traditional salt mixtures can be extremely efficient and cost-effective at temperatures that are slightly below freezing, but are less efficient and cost-effective in extreme cold, i.e., zero degrees Fahrenheit and below. Any overall cost savings from a state-wide program will depend on the severity of the winter months during which it is applied.

There will be some upfront costs. Depending upon the number of road miles used for the pilot program, total upfront costs may range between \$20,000 and \$40,000.

Fiscal Analyst: Michael Siracuse

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This analysis was prepared by nonpartisan Senate staff for use by the Senate in its deliberations and does not constitute an official statement of legislative intent.