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BILL



ANALYSIS

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Senate Bill 879 (as enacted)
Sponsor: Senator Mike Shirkey
Senate Committee: Transportation
House Committee: Transportation and Infrastructure

PUBLIC ACT 457 of 2016

Date Completed: 2-3-17

RATIONALE

Public Acts 174 through 180 of 2015 (the road funding package) amended various statutes to, among other things, increase the gasoline and diesel fuel tax; increase registration tax rates on passenger and commercial vehicles by 20%; and earmark individual income tax revenue to the Michigan Transportation Fund in varying amounts according to a specific schedule. Additionally, Public Act 175 of 2015, which amended the Michigan Transportation Fund law, required the Michigan Department of Transportation (MDOT) to form the Roads Innovation Task Force. According to the Act, the purpose of the Task Force was to create a comprehensive public report to evaluate road materials and construction methods that could allow MDOT to build roads that last longer than those typically constructed, with a goal of roads lasting at least 50 years, higher-quality roads, and reduced maintenance costs; focus on materials and processes that may cost more up front but produce life-cycle construction and maintenance savings; and focus on longer-term time frames that seek to maximize value to taxpayers on a total cost basis. By June 1, 2016, the Task Force had to update the finalized report to provide suggested boilerplate language that coincided with how MDOT would execute the plan and attempt to achieve the targets in the report.

Apparently, the report prompted discussions about statutory obstacles that hinder the Department from attempting innovative infrastructure projects that would be both cost-effective and responsible for durable roads. For example, one identified "roadblock" was the requirement that the Department use Michigan-based data to evaluate materials or designs. It was suggested that additional amendments to the Michigan Transportation Fund law should address obstacles that prevent MDOT from reaching the objective of reduced life-cycle costs for high-quality roads.

CONTENT

The bill amends the Michigan Transportation Fund law to do the following:

- **Require the Michigan Department of Transportation to develop and implement a life-cycle cost analysis for each project for which the total pavement costs exceed \$1.5 million, instead of \$1.0 million, when funded in whole or in part with State funds, and require the analysis to be based on the estimated total pavement cost.**
- **Give MDOT additional options on which to base life-cycle costs when there are no relevant Michigan historic project maintenance, repair, and resurfacing schedules and costs as recorded by the pavement management system for comparison.**
- **Delete a provision that limits MDOT to conducting not more than four pavement demonstration projects each year to evaluate new construction methods, materials, or design.**
- **Allow MDOT to conduct pavement demonstration projects to evaluate designs that do not have actual Michigan historical project maintenance, repair, or resurfacing schedules or costs recorded by the pavement management system, in addition to new construction methods and materials, subject to certain restrictions.**

- **Prohibit a demonstration project from being conducted without the approval of MDOT, and, if a project is rejected, require MDOT to provide an explanation for the rejection to the person that proposed the project.**
- **Allow a demonstration project to be selected based on pavement designs intended to increase pavement life expectancy in a manner that will lower life-cycle costs.**
- **Require MDOT to submit a letter of explanation to certain legislators if the difference between the total costs of contracts awarded for demonstration projects using asphalt and concrete in any contiguous three-year period is, or is anticipated to be, more than 25%, and recommend how MDOT will reduce the difference to below 25% over the next three years.**
- **Require MDOT to strive to reduce the equivalent uniform annual cost of demonstration projects by 5% over the 10-year period following the bill's effective date.**

The bill will take effect on April 5, 2017.

Life-Cycle Cost Analysis

The law requires MDOT to develop and implement a life-cycle cost analysis for each project for which total pavement costs exceed \$1.0 million funded in whole, or in part, with State funds. The Department must design and award paving projects using material having the lowest life-cycle cost. All pavement design life must ensure that State funds are used as efficiently as possible. Under the bill, MDOT must develop and implement a life-cycle cost analysis for each project for which the estimated total pavement costs exceed \$1.5 million fund in whole, or in part, with State funds.

Under the law, except as otherwise provided, life-cycle cost must compare equivalent designs and must be based upon Michigan's actual historic project maintenance, repair, and resurfacing schedules and costs as recorded by the pavement management system, and include estimates of user costs throughout the entire pavement life.

For pavement projects for which there are no Michigan actual historic project maintenance, repair, and resurfacing schedules and costs as recorded by the pavement management system, the Department may use actual historical and comparable data for equivalent designs from states with similar climates, soil structures, or vehicle traffic.

The bill allows the following as a substitute for the current requirements if there are no relevant Michigan actual historic project maintenance, repair, and resurfacing schedules and costs:

- The Department may use actual historical and comparable data for reasonably equivalent designs from geographic locations with similar climates, soil structures, or vehicle traffic.
- The Department may determine appropriate estimated maintenance, repair, and resurfacing schedules for a project by using preliminary results from a demonstration project that is under way at the time of the project.

The schedules derived from a demonstration project under way at the time of a project must be determined using appropriate engineering analysis techniques and must be approved by the chief engineer of MDOT. The temporary schedules must be superseded by actual performance data as they are developed.

Additional Pavement Demonstration Projects

The Michigan Transportation Fund law permits MDOT to conduct up to four pavement demonstration projects each year to evaluate new construction methods, materials, or design. The Department may offer or conduct a pavement demonstration project that may be all or a portion of that project using either concrete or asphalt as determined by the Department. Under the bill, instead, MDOT may conduct pavement demonstration projects to evaluate new construction

methods, materials, or designs that do not have actual Michigan historical project maintenance, repair, or resurfacing schedules or costs recorded by the pavement management system.

As currently required, each demonstration project must include measurable goals and objectives for determining its success. The Department must make a final report for each demonstration project following the demonstration life of the project, which may be shorter than the actual pavement life of the material used for the project, that assesses the cost-effectiveness and performance of the pavement materials and design used in the project and compares the results to the pavement material identified under MDOT's standard pavement selection process.

The bill requires the Department to measure the interim success of each demonstration project each year, in addition to making a final report for each demonstration project following its demonstration life.

The bill specifies that a lack of Michigan actual historic project maintenance, repair, and resurfacing schedules and costs as recorded by the pavement management system does not preclude the Department from conducting a pavement demonstration project.

Pavement Demonstration Selection Criteria

The Michigan Transportation Fund law requires demonstration projects to be selected using any of the following criteria:

- Pavement designs intended to increase pavement life expectancy.
- Pavement designs intended to improve performance, including friction, surface stress, noise reduction, and improvement of ride quality.
- Comparisons of performance of various types of pavement.

The bill refers to pavement designs intended to increase pavement life expectancy in a manner that will result in lowered life-cycle costs. In addition, the bill prohibits a demonstration project from being conducted without the approval of MDOT. If a proposed demonstration project is rejected, MDOT must provide an explanation of the reason for the rejection to the person that proposed the project.

Pavement Demonstration Project Costs

Currently, the total cost of contracts awarded for demonstration projects using asphalt and concrete may not exceed a difference of more than 20% between the respective paving materials in any two-year period. ("Total cost" means the initial engineer's estimated costs of the pavement design portion of the project.)

Under the bill, if the difference between the total cost of contracts awarded for demonstration projects using asphalt and concrete in any contiguous three-year period is more than, or is anticipated to be more than, 25%, MDOT must submit a detailed letter of explanation to the chairpersons of the Senate and House of Representatives transportation committees, the Senate Majority Leader, and the Speaker of the House, explaining why there is a difference and recommendations on how MDOT will reduce the difference to below 25% over the next three years. The bill states that nothing in this provision requires any individual demonstration project to be duplicated with both asphalt and concrete.

Additionally, the bill requires the Department to strive to reduce the equivalent uniform annual cost of demonstration projects by 5% over the 10-year period following the bill's effective date.

MCL 247.651h & 247.651i

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

The bill addresses statutory challenges the Department faces when attempting to use innovative road designs or projects, as identified by the Roads Innovation Task Force report (which was issued in June 2016 and revised in September). As previously noted, the language of the statute prevents the Department from using innovative materials or designs that do not have Michigan-based data. As a result, it is not possible to create advanced designs because the data needed to fulfill the requirement do not exist in Michigan. The bill remedies this problem, and gives the Department further flexibility through the ability to use innovative, and more cost-effective, infrastructure designs.

Moreover, the bill allows the Department to select demonstration projects based on lower life-cycle costs, in addition to increased life expectancy. Public Acts 174 to 180 of 2015 were enacted in response to deteriorating infrastructure throughout Michigan. Reportedly, the road funding package will require Michigan taxpayers and consumers to spend about 40% more on roads annually. It is essential for the State to protect that investment by finding designs that are both durable and economical over time. The bill continues this theme by giving additional consideration to life-cycle costs.

Response: If the State wishes to protect the increased investment in roads, it should not require a project's estimated total pavement cost to exceed \$1.5 million before the Department must develop and implement a life-cycle cost analysis for the project. Increasing the threshold from \$1.0 million will reduce the number of projects required to have an analysis.

Opposing Argument

The bill allows life-cycle costs to be based on actual historical and comparable data for reasonably equivalent designs from geographic locations with similar climates, soil structures, or vehicle traffic when there are no relevant Michigan actual historic project maintenance, repair, and resurfacing schedules and costs as recorded by the pavement management system. Under this circumstance, foreign data may be used. There are many elements that affect a pavement structure's performance. Using foreign data will be risky because there are many confounding variables that could ruin the data and comparison. For example, foreign countries may use completely different materials, contracting techniques, maintenance practices, or construction methods. This could lead to unreliable pavement results and performance.

Opposing Argument

Pavement demonstration projects are used to create both innovative and cheaper pavement products. One of the ways this is accomplished is through competition between separate asphalt and concrete pavement designs. Under the bill, however, the current 20% maximum difference allowed between contracts awarded to pavement projects using each material in any two-year period is being replaced by material contract conditions that will produce less balance between the materials. The current structure is adequate to provide the necessary competition, whereas the bill will create an environment where one material could gain an advantage over the other.

Response: The new material contract requirements under the bill give MDOT more freedom, which will result in reduced life-cycle costs.

Opposing Argument

The provision of the bill allowing the Department to determine appropriate estimated maintenance, repair, and resurfacing schedules for a project using preliminary results from a demonstration project that is under way at the time of the project should apply to pavement demonstration projects only, instead of any pavement project.

Legislative Analyst: Drew Krogulecki

FISCAL IMPACT

The bill will have no impact on State or local revenue, but may affect the allocation of expenditures across activities. The bill will not alter the amount of money earmarked or appropriated to the Department or any specific activity conducted by the Department, but will allow the Department

to increase the number of demonstration projects. To the extent that more demonstration projects are conducted, revenue may be directed away from other activities.

The bill also increases the monetary threshold, from \$1.0 million to \$1.5 million, for projects for which the Department is required to develop and implement a life-cycle cost analysis. The higher threshold will presumably lower the number of projects that will require such an analysis, and thus lower costs for MDOT by an indeterminate amount.

Fiscal Analyst: David Zin