

Department of Legislative Services
 Maryland General Assembly
 2014 Session

FISCAL AND POLICY NOTE

Senate Bill 185 (Senator Astle)
 Budget and Taxation

Transportation - Capital Projects - Life-Cycle Cost Analysis

This bill requires the Maryland Department of Transportation (MDOT) to adopt regulations that establish a methodology for applying life-cycle cost analysis to pavement-related projects that cost more than \$1.0 million. The bill establishes provisions relating to the methodology as well as requirements for MDOT on completion of a life-cycle cost analysis.

Fiscal Summary

State Effect: Transportation Trust Fund expenditures increase by \$1.0 million in FY 2015, which reflects the cost of conducting life-cycle cost analyses for paving projects that otherwise would not use them. Nonbudgeted expenditures by the Maryland Transportation Authority (MDTA) increase by \$281,000 in FY 2015. Out-year costs reflect annualization. To the extent that the more frequent use of life-cycle cost analyses results in reduced construction or maintenance costs for State roadways and parking facilities, some of those costs may be recovered, but a reliable estimate of any cost recovery is not feasible. No effect on revenues.

(in dollars)	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Revenues	\$0	\$0	\$0	\$0	\$0
SF Expenditure	1,012,500	1,350,000	1,350,000	1,350,000	1,350,000
NonBud Exp.	281,300	375,000	375,000	375,000	375,000
Net Effect	(\$1,293,800)	(\$1,725,000)	(\$1,725,000)	(\$1,725,000)	(\$1,725,000)

Note:() = decrease; GF = general funds; FF = federal funds; SF = special funds; - = indeterminate effect

Local Effect: None.

Small Business Effect: Potential meaningful for small engineering firms that perform life-cycle cost analyses.

Analysis

Bill Summary: “Life-cycle cost analysis” is defined as an engineering economic analysis tool used to evaluate alternative infrastructure investment options by comparing all costs associated with the project over its entire life span, including:

- construction, maintenance, reconstruction, rehabilitation, restoring, resurfacing, and lighting costs;
- costs to users of the project, including fuel and vehicle operating costs; and
- engineering, design, inspection, and other costs expected to be incurred to maintain the project.

After applying the life-cycle cost analysis to a project, MDOT must use the results of the analysis in its consideration of any contracts associated with the project. If the analysis reflects an estimated cost difference of 20% or less among the various options, MDOT must design and bid the project using those designs and specify that a materials price adjustment may not be included in the bid process or contract. If an award uses a solution that was not the highest rated in the life-cycle analysis, MDOT must provide a written statement to the Secretary of Transportation explaining why and compile any such statements in a semiannual report to the public. The report must also include any postcontract adjustments on account of an increase in the cost of material.

Current Law: There is no requirement to use life-cycle cost analysis for paving projects in current law.

The State Report on Transportation consists of the *Consolidated Transportation Program* (CTP) and the Maryland Transportation Plan. The Maryland Transportation Plan is revised every five years and includes a 20-year forecast of State transportation needs based on financial resources anticipated to be available. The plan is expressed in terms of goals and objectives and includes a summary of the types of projects and programs that are proposed to meet those goals and objectives, using a multi-modal approach.

The CTP is MDOT’s six-year budget for the construction, development, and evaluation of transportation capital projects. It is revised annually to reflect updated information and changing priorities. It contains a list of current and anticipated major and minor capital projects for the fiscal year it is issued and for the next five fiscal years, including:

- an expanded description of major capital projects;

- a detailed breakdown of the costs of a project, project expenditures to date, expected expenditures for the current fiscal year, projected annual expenditures for the next five years, and total project costs; and
- MDOT's estimates of the source (*i.e.*, federal funds, special funds, etc.) and amount of revenues required to fund projects in the CTP.

Background: Generally, life-cycle costs are the total costs that can be reasonably anticipated for an infrastructure investment during the entire life of the project. Life-cycle costs may include initial construction, operation, maintenance, environmental, safety, and other costs reasonably anticipated during the life of the project, such as recovery after disruption from natural or manmade hazards. According to the National Conference of State Legislatures (NCSL), considering total costs ensures that the focus is not only on the upfront delivery of infrastructure, but also on how cost-efficient the investment will be over time. By accounting for total life-cycle costs, NCSL notes that states can build longer lasting and more affordable projects.

Some states are taking life-cycle costs into account during transportation decisionmaking. For example, in Illinois, a life-cycle cost analysis must be completed for each state road project with total pavement costs exceeding \$500,000.

State Fiscal Effect: The State Highway Administration (SHA) advises that it already uses a life-cycle cost analysis in its pavement selection process that has been approved by the Federal Highway Administration. The existing process does not, however, include some of the factors included in this bill, such as roadway lighting and user costs. SHA also advises that the \$1.0 million threshold in the bill means that the life-cycle analysis has to be performed on more projects than under current practice. Specifically, SHA expects that the bill's threshold requires it to use the life-cycle cost analysis on an additional 100 paving projects currently in the CTP that would not otherwise be subject to such an analysis. Other modal units within MDOT anticipate much smaller effects, typically involving only a handful of projects each year.

MDTA, the second largest paver in the State, estimates that about 30 projects currently in the six-year CTP are also affected. Some of these are large roadway projects, but others are smaller, often involving parking lots.

A life-cycle cost analysis performed by a contracted engineering firm costs about \$150,000 for large-scale road projects; the cost is reduced to about \$50,000 for smaller projects, such as parking lots.

Assuming an average cost of \$75,000 for a life-cycle cost analysis and an annual average of 16 analyses for SHA and 2 for all other MDOT modal units combined, TTF

expenditures increase by an estimated \$1,350,000 each year beginning in fiscal 2015 to conduct the mandated life-cycle cost analyses. However, first-year costs are reduced by 25% due to the bill's October 1, 2014 effective date.

Similarly, assuming an average of five analyses for MDTA, nonbudgeted expenditures increase by \$375,000 annually, reduced by 25% in the first year.

To the extent that the more frequent use of life-cycle cost analyses reduces initial and/or maintenance costs of State roadways and parking facilities, at least some of those costs may be recouped during the construction or operational phases of the project, but a reliable estimate of any cost recovery is not feasible.

MDOT advises that the bill's requirements may result in project delays, especially for projects currently in the CTP.

MDOT can implement the bill's reporting requirements with existing budgeted resources.

Additional Information

Prior Introductions: None. However, HB 1325 of 2013 passed the House with amendments that made it similar to this bill. It was referred to the Senate Rules Committee, but no further action was taken.

Cross File: None.

Information Source(s): Maryland Department of Transportation, Department of Legislative Services

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