

**Department of Legislative Services**  
Maryland General Assembly  
2015 Session

**FISCAL AND POLICY NOTE**

Senate Bill 738 (Senator Simonaire)  
Education, Health, and Environmental Affairs

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**Professional Engineers - Responsible Charge - Review and Approval of  
Engineering Documents**

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This bill specifies an additional requirement for the review or approval by a unit of State or local government of an engineering document prepared in connection with any project where the skills of a professional engineer are required. Such review or approval must be undertaken by a professional engineer with responsible charge with respect to the governmental unit's oversight of the project for which the document was prepared.

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**Fiscal Summary**

**State Effect:** No effect on total spending in the State capital budget, under the assumptions discussed below. However, the bill significantly increases the cost of most capital projects beginning in FY 2016, which displaces other capital spending and reduce funding for other capital expenditures. The estimated cost for design reviews conducted solely by the Department of General Services (DGS), which procures most nontransportation construction contracts in Executive Branch agencies, is approximately \$10.5 million in FY 2016 and \$14.0 million annually thereafter. The per-project cost for DGS maintenance projects likewise increases; however, there is no effect on total general fund expenditures by DGS for building maintenance, but a maintenance backlog likely increases. This estimate does not include the cost to procure additional engineering services for other State agencies or for public institutions of higher education.

**Local Effect:** Local expenditures and/or capital costs increase significantly beginning in FY 2016 from the bill's requirement that specified documents be reviewed or approved by a professional engineer. **This bill imposes a mandate on a unit of local government.**

**Small Business Effect:** Meaningful.

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## Analysis

**Bill Summary:** The requirement that all engineering documents prepared in connection with specified projects where the skills of a professional engineer are required must be signed, sealed, and dated by the professional engineer who prepared or approved the documents is clarified to include any project conducted by, jointly with, or under contract with the State or a political subdivision of the State. These projects were already included in the current requirement.

**Current Law:** All engineering documents prepared in connection with the alteration, construction, design, or repair of a building, structure, building engineering system and its components, machine, equipment, process, works, subsystem, project, public or private utility, or facility in the built or economic environment, where the skills of a professional engineer are required, must be signed, sealed, and dated by the professional engineer who prepared or approved the documents.

However, there is no State requirement that any required review or approval by a unit of State or local government of an engineering document prepared in connection with any project where the skills of a professional engineer are required must be undertaken by a professional engineer.

**Background:** State agencies do not review engineering documents solely with licensed professional engineers. For most projects reviewed by DGS, the agency employs a combination of licensed staff and other experienced staff. DGS employs four staff, one of whom is licensed, for this purpose. DGS advises that, currently, only large K-12 public school and community college projects requiring multiple engineering disciplines are outsourced to licensed engineers for review on behalf of the State.

School construction costs are shared by the State and local governments. The Interagency Committee on School Construction (IAC) administers the State Public School Construction Program (PSCP) under the authority of the Board of Public Works (BPW). The State funds its share of school construction primarily by issuing bonds and allocating the funds to local education agencies (LEAs). IAC reviews requests for State funds for eligible projects such as renovations, additions, new schools, and systemic renovations. Local matching funds are required.

PSCP advises that the capacities of LEAs vary enormously. Several of the larger LEAs have professional engineers on staff (as well as architects and design specialists), while the facility staff of a very small LEA may consist of a single individual who comes from a variety of backgrounds, including instruction, and who relies heavily on the engineer of record for quality control of engineering documents and accountability for errors or omissions.

A similar range in design review capability was received from local governments contacted for information for this fiscal and policy note.

### *Procurement of Engineering Services*

The procurement of architectural and engineering services is overseen by the General Professional Services Selection Board in DGS and the Transportation Professional Services Selection Board in the Maryland Department of Transportation. Both selection boards are required to ensure that recommendations to BPW for architectural and engineering procurements costing more than \$200,000 are made on a competitive basis and include an evaluation of the technical proposals and qualifications of at least two firms. Each board has separate regulations and procedures.

The General Professional Services Selection Board awards procurements for architectural and engineering services over \$200,000 based on an initial technical ranking and a subsequent negotiation for compensation. State agencies, with the exception of transportation units, intending to procure architectural and engineering services that cannot be provided in-house are required to submit a request to procure those services to the board.

Architectural and engineering procurements for transportation agencies are awarded by the Transportation Professional Services Selection Board based on a multi-tier ranking process. A transportation agency that intends to procure architectural and engineering services that cannot be provided in-house is required to submit a request to procure those services to the Secretary of Transportation. The Secretary must consider whether the project can be performed by in-house resources. If not, the Secretary must certify this fact to the board.

**State Expenditures:** State agencies generally outsource the design of projects to licensed individuals, but whether a design is reviewed by a licensed professional engineer varies by agency. For example, the State Highway Administration and the Maryland Transportation Authority each indicate that the bill likely has little to no effect because either licensed staff or licensed consultants review design documents on behalf of the agencies.

For those agencies that do not review design documents with licensed professional engineers, the bill requires either (1) the further outsourcing of the review of project designs or (2) a significant increase in staff resources across the State agencies, including DGS and the Maryland Transit Administration (MTA), to provide in-house design reviews. Under either scenario, there is no effect on total spending in the State *capital* budget, which is established annually by the Governor and General Assembly.

Given the effective date of the bill and the difficulties in hiring licensed professional engineers, it is more likely that State agencies outsource the review of project designs,

which is then incorporated into each individual project's cost. Under this assumption, the bill significantly increases the cost of most capital projects beginning in fiscal 2016, which displaces other capital spending and reduces funding for other capital expenditures – either within a project or on other capital projects. DGS advises that the bill applies to approximately 400 design reviews annually, with a cost to procure each review ranging from \$30,000 to \$40,000.

Therefore, the estimated cost increase for project design reviews conducted solely by DGS is approximately \$10.5 million in fiscal 2016 and \$14.0 million annually thereafter. The per-project cost for DGS maintenance projects is likewise increased; however, there is no effect on total general fund expenditures by DGS for building maintenance, as an ongoing maintenance backlog limits spending to the general fund appropriation. The fiscal 2014 backlog has 1,032 projects totaling \$41.8 million, while the Governor's proposed fiscal 2016 appropriation is \$5.0 million. To the extent that additional funding for maintenance is not available, the backlog likely grows.

This estimate does not include the cost to procure additional engineering services for other State agencies or for public institutions of higher education, which is also likely significant.

Alternatively, State agencies and public institutions of higher education may hire sufficient engineers to perform the design reviews in-house. Assuming an average design review period of 40 hours per review, eight professional engineers are required solely for design reviews by DGS. Under these assumptions, general fund expenditures for DGS increase by \$1.1 million in fiscal 2016 and by more than \$1.4 million annually thereafter. Similarly, MTA indicates that special/federal fund expenditures increase by \$2.3 million in fiscal 2016 and by more than \$3.3 million annually thereafter to provide sufficient in-house design review staff. These estimates do not include the cost to other State agencies or public institutions of higher education.

A portion of the costs of additional design reviews (whether the costs are in the capital or the operating budget) may be offset by a reduced number of change orders due to enhanced scrutiny during the design review process. While the number of change orders reduced due to the bill cannot be reliably estimated at this time, a March 2014 study by Montgomery County found that, on average, change orders added about \$37,400 (0.5%) to a project's contract costs, and increased the overall construction time by 30.3%. The study looked at 17 recent capital projects, each with an original contract cost of more than \$1.0 million.

**Local Expenditures:** Local expenditures and/or capital costs increase significantly beginning in fiscal 2016 from the bill's requirement that engineering documents be reviewed or approved by a professional engineer on behalf of the public body. As noted above, the Department of Legislative Services received a range of capabilities for design

review from local governments contacted for information for this fiscal and policy note. Given the effective date of the bill and the difficulties in hiring licensed professional engineers, it is assumed that local governments procure any necessary design review services. The average cost to procure an engineering review is between \$30,000 and \$40,000. Local government capital costs increase to the extent that engineering services are procured. Alternatively, local governments may hire sufficient engineers to perform the design reviews in-house, in which case local government expenditures increase significantly.

**Small Business Effect:** Small businesses providing professional engineering services benefit from a significant increase in demand for their services from State and local government.

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### **Additional Information**

**Prior Introductions:** None.

**Cross File:** HB 752 (Delegate W. Miller, *et al.*) - Economic Matters.

**Information Source(s):** Department of General Services; Maryland Department of Transportation; Department of Labor, Licensing, and Regulation; Public School Construction Program; Baltimore City; Montgomery County; cities of Bowie and Takoma Park; Department of Legislative Services

**Fiscal Note History:** First Reader - February 28, 2015  
min/mcr

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