

Department of Legislative Services
Maryland General Assembly
2010 Session

FISCAL AND POLICY NOTE

House Bill 709 (Delegate Carr)
Environmental Matters

**Roadway Lighting - Expressways and Controlled Access Highways - Lighting
Curfew and Tariffs**

This bill requires the State Highway Administration (SHA) and the Maryland Transportation Authority (MDTA) to turn off all lighting on expressways and controlled access highways between 12:00 midnight and 6:00 a.m. unless the MDTA Administrator or Secretary of Transportation determines lighting is warranted. A finding that lighting is warranted must be based on a determination that roadway conditions and the density of traffic on the highway are such that the safety and security benefits derived from the lighting justify the energy consumption and monetary costs associated with the use of the lighting.

By January 1, 2012, electric companies in the State are required to prepare a tariff for roadway lighting that is turned off between 12:00 midnight and 6:00 a.m. and submit it to the Public Service Commission (PSC).

Fiscal Summary

State Effect: Transportation Trust Fund (TTF) expenditures increase by an estimated \$43.0 million in FY 2011 to install highway lighting controls and complete studies. Nonbudgeted expenditures increase significantly in FY 2011 to install highway lighting controls and complete studies. Potential increase in TTF and nonbudgeted expenditures beginning in FY 2011 for additional law enforcement. Potential decrease in TTF and nonbudgeted expenditures beginning in FY 2011 due to energy savings; however, any total cost savings cannot be reliably estimated at this time.

(in dollars)	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Revenues	\$0	\$0	\$0	\$0	\$0
SF Expenditure	43,000,000	-	-	-	-
NonBud Exp.	-	-	-	-	-
Net Effect	(\$43,000,000)	\$0	\$0	\$0	\$0

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

Local Effect: The bill is not expected to have a significant impact on local operations or finances.

Small Business Effect: Minimal or none.

Analysis

Current Law: A public service company must file a tariff schedule of its rates and charges for its regulated services and standard offer service with PSC. A public service company may not establish a new rate or change in rate unless it gives 30-day notice to PSC of the new or changed rate and publishes the new or changed rate in a specified manner.

Background: PSC, which was established in 1910, regulates public utilities and certain passenger transportation companies doing business in Maryland. PSC is empowered to hear and decide matters relating to rate adjustments, applications to exercise or abandon franchise, applications to modify the type or scope of service, approval of issuance securities, promulgation of new rules and regulations, and quality of utility and common carrier service.

SHA is responsible for more than 5,200 miles or approximately 16,800 lane miles of road, 2,500 bridges, 3,500 small stream crossing structures, and 80 miles of sound barriers. It also has responsibility for planning, designing, constructing, and maintaining these roads and bridges to safety and performance standards while considering sociological, ecological, and economic concerns.

Established in 1971 as an independent, nonbudgeted State agency, MDTA manages, operates, and maintains the State's seven toll facilities (four bridges, two tunnels, and one highway) and provides law enforcement for these facilities, as well as for Baltimore/Washington International Thurgood Marshall Airport and the Port of Baltimore. Toll revenues and bonds are used to finance these projects.

A primary purpose of lighting a roadway at night is to increase the visibility of the roadway and its immediate environment to help drivers maneuver more efficiently and safely. Visibility or the ability to detect an object depends on several factors, such as the

contrast between the object and the background, the adaptation of the eye, glare, and the visual acuity of the driver. Many factors must be taken into account when selecting road lighting fittings, such as shape, distribution of luminous intensity in relation to the surroundings, type of fitting, and the height of the fitting.

Road lighting contributes to light pollution and energy demand. Light pollution is excessive and inappropriate artificial light. Some studies link growing light pollution to negative impacts on human health and immune function, adverse behavioral changes in insect and animal populations, and a decrease of both ambient quality and safety at night. A significant amount of energy is dedicated to lighting along roads. To promote energy efficiency and reduce light pollution, road lighting is often adjusted to reduce the level of illumination and/or period of use.

House Joint Resolution 14 of 2001 created the Task Force to Study Lighting Efficiency and Light Pollution in Maryland. The purpose of the task force was to study the cost, extent, and consequences of inefficient public lighting and light pollution in the State, and the benefits of alternative improvements. The task force released a report in March 2002 that made numerous recommendations and provided the following general guidelines for State agencies:

- choose luminaires that distribute the light only where it is needed, minimizing light pollution and unnecessary energy consumption;
- choose appropriate lamp source color, efficient ballasts, and lamps with longer life ratings;
- choose lamp types to maximize visibility per lumen output, as well as maximizing lumen output per input watt of energy;
- design to appropriate lighting levels based on Illuminating Engineering Society of North America recommendations and to avoid over lighting; and
- locate lights to avoid spillover onto adjacent property and choose appropriate pole heights.

A number of communities across the country have considered imposing a curfew on street lights. The City of Bristol, Connecticut is currently considering a proposal to reduce street light usage in order to achieve energy cost savings. Furthermore, legislation may be introduced in Connecticut soon authorizing the state department of transportation to turn off roadway lighting on limited access highways during the evening. This bill is based on the draft Connecticut legislation.

State Expenditures: Currently, SHA and MDTA highway lighting controls are configured so that roadway and sign lighting is connected and cannot be independently controlled. Thus, to allow highway lights to be turned off and maintain sign lighting,

significant changes must be made to the lighting electrical systems, including new circuits, contactors, and control systems.

SHA's TTF expenditures increase by an estimated \$43.0 million in fiscal 2011 for contractual costs to complete a study (\$1.0 million) and conduct lighting control modifications (\$42.0 million). MDTA's nonbudgeted expenditures increase significantly – to a similar magnitude as SHA – to complete studies and alter lighting controls at transportation facilities projects. This estimate assumes:

- SHA and MDTA must complete studies at various highway locations to ascertain if, based on roadway and traffic conditions, the safety and security benefits of roadway lighting justifies the energy consumption and costs associated with the lighting.
- SHA requires new highway lighting control hardware at 2,100 locations at a cost of \$20,000 per location.

TTF and nonbudgeted expenditures may also increase beginning in fiscal 2011 to the extent reduced lighting prompts a need for additional law enforcement services.

SHA currently spends approximately \$4.4 million annually on roadway and sign lighting. A reliable estimate of any energy savings resulting from the bill cannot be made at this time. Under one set of assumptions, assuming roadway lighting costs of \$3.3 million annually and a 60% energy savings from extinguishing power between 12:00 midnight and 6:00 a.m., SHA advises that TTF energy expenditures could decrease by an estimated \$2.0 million annually. This estimate does not reflect any potential change in the electricity cost rate that may result from reduced power usage. There is also a potential for reduced nonbudgeted expenditures in fiscal 2011 and future years due to energy savings for MDTA; however, any cost savings cannot be reliably estimated at this time.

The net effect on TTF and nonbudgeted expenditures in the out years is unknown.

Additional Information

Prior Introductions: None.

Cross File: None.

Information Source(s): Public Service Commission, Maryland Department of Transportation, Maryland Transportation Authority, Department of State Police, Department of Legislative Services

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