

Department of Legislative Services
 Maryland General Assembly
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FISCAL AND POLICY NOTE
 Third Reader - Revised

House Bill 1255

(Delegate Fraser-Hidalgo, *et al.*)

Ways and Means and Environment and Transportation Education, Health, and Environmental Affairs

School Bus Transition – Zero-Emission Vehicles – Grant Program and Fund

This bill establishes the Zero-Emission Vehicle School Bus Transition Grant Program within the Maryland Department of the Environment (MDE). The purpose of the program is to provide grants to local boards of education (and entities that contract with local boards to provide transportation services) to (1) purchase school buses that are zero-emission vehicles; (2) install electric vehicle infrastructure for charging school buses that are zero-emission vehicles; (3) engage in planning for a transition to using school buses that are zero-emission vehicles; and (4) fund pilot programs to experiment with a transition to school buses that are zero-emission vehicles. The bill also establishes the Zero-Emission Vehicle School Bus Transition Fund to provide funding for the program. MDE must consult with the Maryland State Department of Education to administer the program and the fund. MDE may adopt regulations to implement the bill.

Fiscal Summary

State Effect: MDE and other affected State agencies can administer the pilot program and provide technical assistance to local school systems with existing budgeted resources. Approximately \$600,000 is available to develop and fund a pilot program for zero-emission school vehicles.

Local Effect: Local school system expenditures could potentially increase to participate in the pilot program. The pilot program is expected to fund between four and six zero-emission school vehicles. Local school systems indicate that zero-emission school vehicles may result in higher operating costs. Due to the limited scope of the pilot program, local school finances should not be significantly affected.

Small Business Effect: None.

Analysis

Bill Summary: MDE and the Maryland Department of Transportation must jointly provide technical assistance to local school boards (and entities that contract with local school boards to provide transportation services) for transitioning to zero-emission school buses.

If MDE receives any funds as a result of a legal settlement that are earmarked for the purpose of transitioning to school buses that are zero-emission vehicles, the funds must be made available to award grants in accordance with the bill.

The fund consists of (1) money appropriated in the State budget to the fund; (2) interest earnings of the fund; (3) donations; (4) money derived from legal settlements that are earmarked for the purpose of transitioning to school buses that are zero-emission vehicles; and (5) any other money from any other source accepted for the benefit of the fund. Money expended from the fund for the program is supplemental to (and is not intended to take the place of) funding that otherwise would be appropriated for the program.

Current Law: A “zero-emission” vehicle is any vehicle that (1) is determined by the Secretary of Transportation to be of a type that does not produce any tailpipe or evaporative emissions and (2) has not been altered from the manufacturer’s original specifications.

Background: Local school systems spent \$620.6 million on student transportation services in fiscal 2017 as shown in **Appendix 1**. Over 640,000 public school students receive transportation services. Local school systems in six counties (Baltimore, Frederick, Montgomery, Prince George’s, Talbot, and Washington) primarily use government owned school vehicles to transport students; whereas, two local school systems (Caroline and Kent) use a combination of government owned and private contractors. Local school systems in the other jurisdictions primarily use private contractors to transport students. In total, local school systems use over 7,200 school vehicles for student transportation services.

Costs for Electric School Vehicles

Electric school buses are a relatively new technology; thus, costs for these vehicles are changing. The Maryland State Department of Education advises that the cost of a traditional diesel-powered school bus can start at around \$90,000, while a comparable electric-powered school bus can cost over \$340,000. There are also additional capital costs related to electric school buses (*e.g.*, electric charging stations).

To implement a zero-emission vehicle policy to transport students, local school system expenditures would increase by a significant amount. The additional expenditures are due

to (1) higher costs to purchase school vehicles; (2) the need to implement additional school bus routes resulting in higher personnel and operating costs; and (3) additional capital costs for charging stations. Several local school systems from across the State provided the Department of Legislative Services with information regarding the implementation of a zero-emission school bus policy.

Anne Arundel County Public Schools (AACPS) notes that its existing bus routes are likely too long for electric school buses. As a result, routes would need to be shortened (or more buses purchased to accommodate current routes). In addition, AACPS notes that electric buses may not have enough time to recharge between morning and afternoon trips. More bus drivers may also be needed in the event that additional buses and/or routes are added.

Prince George's County Public Schools (PGCPS) advises that, in order to implement a zero-emission school bus policy, it would need to purchase charging stations at about \$5,000 each. This likely necessitates significant infrastructure improvements at current bus lots. PGCPS notes that, in the event that more than 15 electric school buses are placed at one location, major infrastructure changes are necessary to provide the needed electricity. The typical bus lot in the county has 85 to 165 school buses assigned; the school system uses 13 bus lots throughout the district.

In terms of mileage, PGCPS advises that most combined morning, mid-day, and afternoon routes exceed the maximum range of an electric school bus. Therefore, it is not feasible for an electric school bus to cover many of the school system's routes on a single charge. Because of the mileage limitations, PGCPS anticipates needing additional school buses (and school bus drivers) to cover existing routes.

Finally, PGCPS notes that it is not feasible to fully recharge an electric school bus assigned to a morning, mid-day, and afternoon route. Fully recharging likely requires six to eight hours. Thus, an electric bus would need to recharge after normal business hours (during the evening and early morning) before the morning route.

Talbot County Public Schools (TCPS) advises that, because of the limited range of electric school buses, it may need to significantly increase its bus fleet size. In addition, TCPS notes that there is likely not enough time to recharge buses between morning and afternoon trips in the county.

Volkswagen Settlement

In June 2016, the U.S. Department of Justice issued a partial consent decree settling claims by the U.S. Environmental Protection Agency (EPA) and the Federal Trade Commission against automaker, Volkswagen AG (VW).

The civil complaint filed against Volkswagen claimed that the automaker installed software in its 2.0 liter diesel engine vehicles to disable emission controls under normal use and to turn on emission controls only when the vehicle was being tested. This “defeat device” resulted in better real world fuel mileage and driving performance, but also resulted in the release of thousands of tons of NOx emissions in excess of regulated limits. Researchers conducted on-road testing of VW models equipped with 2.0 liter turbocharged 4-cylinder diesel engine in May 2014. The testing revealed that average emissions in on-road testing exceeded federal NOx limits by between 9 and 38 times the U.S. limit depending on driving conditions, which is roughly equivalent to real-world emissions from a modern tractor-trailer truck. Volkswagen agreed to spend \$14.7 billion to settle allegations of circumventing emission standards.

The [settlement](#) is divided into three distinct parts. Ten billion dollars of the settlement money will be used to buy back or modify diesel vehicles from consumers. Modifications are expected to be proposed as they are developed, and will be approved by the EPA and California Air Resources. The second requirement of the settlement is that VW must create a National Zero Emission Vehicle (ZEV) Investment Plan and spend \$2 billion on ZEV infrastructure and programs and brand neutral media activities aimed at increasing public awareness of zero emission vehicles. The amount will be divided between California (\$800 million) and the rest of the United States (\$1.2 billion). The third component of the settlement is the environmental mitigation trust. To mitigate environmental damages from violating the Clean Air Act, the settlement requires VW to invest \$2.9 billion in an independently administered environmental mitigation trust, which will fund projects to reduce diesel emissions.

State/Local Expenditures: Maryland was allocated \$76 million as a result of the VW settlement. MDE advises that \$4.6 million is reserved for school bus replacement, with approximately \$600,000 specifically set aside to develop and fund a pilot electric school bus program in the State. According to MDE, the pilot program is expected to fund about four to six electric school buses in the State. While local school systems indicate that zero-emission school vehicles may result in higher operating costs, due to the limited scope of the pilot program, local school finances should not be significantly affected.

MDE and other affected State agencies can administer the pilot program and provide technical assistance to local school systems with existing budgeted resources.

Additional Information

Prior Introductions: None.

Cross File: None.

Information Source(s): Maryland Association of Counties; Maryland State Department of Education; Department of the Environment; Maryland Department of Transportation; Baltimore City Public Schools; Baltimore County Public Schools; Anne Arundel County Public Schools; Montgomery County Public Schools; Prince George's County Public Schools; Frederick County Public Schools; Garrett County Public Schools; Talbot County Public Schools; VW Settlement Clearing House; Department of Legislative Services

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Appendix 1 – Student Transportation Statistics – Maryland Public Schools

School System	Number of Vehicles			Total Miles Traveled			Pupils Eligible for Transportation			Transportation Costs
	Public	Contracted	Total	Non-disabled	Disabled	Total	Non-disabled	Disabled	Total	Total Amount
Allegany	22	88	110	1,269,594	345,312	1,614,906	5,398	267	5,665	\$5,850,495
Anne Arundel	54	550	604	9,067,159	1,647,977	10,715,136	59,347	1,741	61,088	55,903,491
Baltimore City	33	407	440	1,810,839	447,869	2,258,708	32,142	2,784	34,926	53,097,524
Baltimore	670	138	808	10,043,580	4,943,914	14,987,494	77,594	3,712	81,306	65,595,607
Calvert	0	139	139	2,548,645	783,880	3,332,525	15,156	327	15,483	13,853,914
Caroline	23	35	58	798,011	176,488	974,499	4,595	94	4,689	3,915,557
Carroll	0	262	262	3,496,507	1,791,115	5,287,622	24,110	496	24,606	21,057,977
Cecil	9	145	154	2,058,398	485,261	2,543,659	14,137	238	14,375	10,057,070
Charles	4	284	288	4,678,095	2,246,111	6,924,206	23,034	948	23,982	26,359,748
Dorchester	8	49	57	785,899	205,674	991,573	4,103	91	4,194	3,695,074
Frederick	351	0	351	4,594,266	2,907,679	7,501,945	28,931	1,026	29,957	20,428,809
Garrett	0	62	62	753,120	266,130	1,019,250	3,772	40	3,812	4,063,587
Harford	100	347	447	4,968,012	2,331,077	7,299,089	31,663	895	32,558	30,934,598
Howard	0	453	453	3,160,440	2,365,380	5,525,820	41,359	1,596	42,955	37,876,468
Kent	10	13	23	521,025	135,824	656,849	1,624	32	1,656	1,938,757
Montgomery	1,176	0	1,176	10,336,782	9,540,481	19,877,263	96,415	5,652	102,067	107,541,885
Prince George's	1,042	7	1,049	11,778,799	7,701,936	19,480,735	82,161	4,628	86,789	103,193,328
Queen Anne's	15	73	88	1,562,126	514,980	2,077,106	7,679	104	7,783	6,820,554
St. Mary's	12	190	202	2,974,423	1,156,140	4,130,563	17,516	472	17,988	15,821,355
Somerset	0	32	32	694,322	120,186	814,508	2,739	88	2,827	3,051,939
Talbot	41	0	41	629,928	206,113	836,041	3,710	80	3,790	2,622,903
Washington	136	56	192	2,356,257	749,961	3,106,218	18,597	516	19,113	11,388,160
Wicomico	18	106	124	1,590,444	333,233	1,923,677	12,295	211	12,506	8,909,383
Worcester	0	69	69	1,516,949	112,362	1,629,311	6,272	95	6,367	6,578,128
Total State	3,724	3,505	7,229	83,993,620	41,515,083	125,508,703	614,349	26,133	640,482	\$620,556,313

Note: Data for number of school vehicles, miles traveled, and students transported is from fiscal 2018. Student transportation costs is from fiscal 2017.

Source: Maryland State Department of Education; Department of Legislative Services