

Department of Legislative Services  
Maryland General Assembly  
2005 Session

FISCAL AND POLICY NOTE

House Bill 960 (Delegate Parrott, *et al.*)  
Environmental Matters

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Environment - Methyl Tertiary Butyl Ether, Ethyl Tertiary Butyl Ether, and  
Tertiary Amyl Methyl Ether - Prohibition

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This bill prohibits, beginning October 1, 2006, a person from selling or supplying gasoline that contains more than 0.5%, by volume, of methyl tertiary butyl ether (MTBE), ethyl tertiary butyl ether (ETBE), or tertiary amyl methyl ether (TAME). Beginning October 1, 2010, a person is prohibited from selling or supplying gasoline that contains any amount of those chemicals. The Maryland Department of the Environment (MDE) is authorized to adopt regulations to implement the bill.

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Fiscal Summary

**State Effect:** Beginning in FY 2007, potential significant decrease in special fund revenues from oil transfer fees and general/special fund revenues from the motor fuel tax. Potential minimal general fund expenditure increase in FY 2006 to upgrade fueling equipment. Special fund expenditure increase of \$15,000 in FY 2007 only for outreach.

**Local Effect:** As owners/operators of public water supply systems, local jurisdictions could benefit from a reduction in MTBE contamination. Local jurisdictions could incur increased costs to upgrade fleet fueling equipment.

**Small Business Effect:** Potential meaningful.

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Analysis

**Current Law:** Federal law requires the use of reformulated gasoline in areas with unhealthy levels of air pollution; reformulated gasoline is required to contain a minimum

of 2% oxygen (by weight). Federal law does not specifically require the use of MTBE, ETBE, or TAME. Refiners may choose to use other oxygenates, such as ethanol. Currently, there are no laws or regulations limiting the use of MTBE, ETBE, or TAME in gasoline sold in Maryland.

**Background:** MTBE is a chemical compound used as a gasoline additive. It raises the oxygen content in gasoline, which helps engines burn cleaner, thus reducing tailpipe emissions. It was originally introduced in the late 1970s to replace lead. MTBE is being used at higher concentrations in some states, such as Maryland, to fulfill the oxygenate requirements set by Congress in the 1990 federal Clean Air Act amendments. According to MDE, reformulated gasoline is used in 14 counties in the State.

At room temperature, MTBE is a volatile, flammable, and colorless liquid that dissolves easily in water. Because MTBE is more water soluble and less biodegradable than other gasoline components, it can be introduced into groundwater from leaking underground and aboveground petroleum storage tanks. Recent studies indicate that MTBE vapors can also lead to groundwater contamination. Low levels of MTBE can make drinking water undrinkable due to its offensive taste and color. Although there is limited data on the human health effects of MTBE when ingested through drinking water, the U.S. Environmental Protection Agency (EPA) has advised that MTBE is a potential human carcinogen at high doses.

In response to the growing concerns regarding MTBE in water, EPA appointed an independent Blue Ribbon Panel to investigate the air quality benefits and water quality concerns associated with oxygenates in gasoline. In 1999, the panel made several recommendations, including removing the federal oxygenate requirement. State legislation enacted in 2000 established a task force to study the environmental effects of MTBE. In its final report the task force noted, among other things, that Maryland should give careful consideration to a reduction or a complete phase-out of MTBE in gasoline sold in the State provided there is no backsliding on air quality benefits.

Twenty states have either partially or completely banned the use of MTBE statewide. Another 10 states have passed legislation, or have legislation pending, that signals an eventual phase-out of MTBE. Some of this legislation directs state agencies to study the effects of MTBE or creates councils and commissions to monitor the progress of a phase-out. Other legislation requires notification of property owners, public water suppliers, and health officers when groundwater contamination is discovered. Overall, partial bans are the most common form of prohibiting MTBE among these states. Partial bans permit trace amounts of MTBE in motor vehicle fuel sold or used in the state. A number of the partial bans will become complete bans within a few years.

Farmers on the Eastern Shore see ethanol as a potential substitute for MTBE. Ethanol, which is made from grains, is the most widely used substitute for MTBE. According to MDE, switching to ethanol could have drawbacks, however. First, it could reverse the air quality gains made with the use of MTBE. Second, little is known about ethanol's behavior in petroleum underground storage tank releases. MDE advises that, at high concentrations, ethanol may cause other gasoline constituents to become more soluble in water, thus contributing to groundwater pollution. Further, the breakdown of surface spills could result in consumption of dissolved oxygen, causing fish kills.

Concern regarding MTBE in Maryland increased in 2004 with the discovery of groundwater contamination in Harford County; MTBE contamination has also been found in other Maryland counties. Emergency regulations addressing MTBE contamination, which require improved release detection and site monitoring, took effect January 26, 2005.

ETBE and TAME are two other oxygenates. According to MDE, they are not widely used.

**State Revenues:** General/special fund revenues from the motor fuel tax could decrease significantly beginning in fiscal 2007 to the extent the bill results in a shortage of gasoline. The motor fuel tax is currently assessed at the rate of 23.5 cents per gallon for gasoline and clean-burning fuels. Total fiscal 2006 revenues for all motor fuel taxes are estimated at \$763.4 million. According to the Motor Fuel Tax Division of the Comptroller's Office, a gasoline shortage could occur if MTBE, ETBE, and TAME are banned in Maryland and not in surrounding states. To date, no neighboring states have banned these additives. The closest states that have banned MTBE are New York, Connecticut, Ohio, and Kentucky. The risk of a significant revenue loss would most likely decrease over time as more and more states ban these oxygenates, however.

Special fund revenues into the Oil Disaster Containment, Cleanup, and Contingency Fund from oil transfer fees could also decrease beginning in fiscal 2007. Under current law, a license fee of \$0.03 per barrel is charged on specified petroleum products transferred into the State. (A portion of the fee (\$0.01 per barrel), which is paid into the Oil Contaminated Site Environmental Cleanup Fund, is set to expire July 1, 2005.) In fiscal 2005, MDE collected approximately \$2 million in fee revenue from gasoline containing MTBE, ETBE, and/or TAME. MDE advises that, because alternative oxygenates such as ethanol do not meet the definition of petroleum product, and because such oxygenates would likely be required to be blended into gasoline near the distribution point (instead of out-of-state), the State would be precluded from charging a fee on such products. The actual impact on fee revenue would depend on the specific oxygenate

chosen and the percentage at which it is used in gasoline. Revenues could also decrease to the extent the bill results in a shortage of gasoline, as described above.

**State Expenditures:** Special fund expenditures within MDE could increase by \$15,000 in fiscal 2007 only to provide posters and stickers to gas stations in order to make the public aware of the presence of an alternative oxygenate (such as ethanol) in gasoline. (Some older cars may have problems with certain oxygenates.)

Operational impacts on MDE's groundwater protection and air quality programs are discussed below.

### ***Groundwater Protection***

MDE's Oil Control Program has 190 cases that involve over 600 private wells impacted by MTBE over five parts per billion (ppb). Eighteen public water systems have had levels of MTBE greater than six ppb in the past two years. Although the bill would reduce the number of MTBE contamination cases requiring investigation, cleanup, and oversight by MDE, the bill would not result in an overall decrease in the number of oil spills. MDE advises that it is possible that alternative oxygenates could create new challenges for the investigation and remediation of oil spills.

### ***Air Quality***

MDE advises that, although the air quality impacts of switching from MTBE to ethanol are unknown, preliminary studies in California indicate that the air quality gains made with MTBE are reversed to a degree with the use of ethanol. MDE further advises that any loss of air quality benefits would have to be replaced through the use of additional control measures in order to achieve and maintain federal air quality standards. Penalties for states failing to achieve federal standards include loss of federal highway funds, limits on new industry, and imposition of a federal implementation plan.

### ***Other Impacts***

As an owner of fueling facilities, the State could incur a minimal increase in costs in fiscal 2006 to upgrade fleet fueling equipment to accommodate an alternative oxygenate. The Department of General Services advises that it is responsible for the majority of fuel pumps (91) in the State. Costs are estimated at \$110 per dispenser. As a consumer of gasoline, the State could incur additional costs to the extent the oil industry passes any increased costs along to consumers. Based on information provided by MDE, the State uses approximately 5.4 million gallons of reformulated gasoline annually at a cost of about \$1.34 per gallon. MDE advises that some states that have switched to ethanol have

noted an increase in gasoline prices of 3 to 8 cents per gallon. Not all states that have banned MTBE have experienced a price increase, however.

**Local Expenditures:** As owners and operators of public water systems, local jurisdictions may benefit from a reduction in MTBE contamination; however, alternative oxygenates may create new challenges for investigation and remediation of oil spills.

Local jurisdictions that own and operate their own centralized fueling facilities may incur additional costs to upgrade their dispenser filtration systems. MDE advises that 90 fueling facilities are owned by local governments in the State. Costs are estimated at \$110 per dispenser, although the total number of dispensers at local facilities is unknown. As a consumer of gasoline, local jurisdictions could incur additional costs for gasoline to the extent the bill results in an increase in the price of gasoline.

**Small Business Effect:** Due to its affinity for water, ethanol cannot be transported by pipeline, so it must be shipped via truck, rail, or barge. MDE advises that if ethanol is brought to terminals by barge or rail, it is handled similarly to a regular shipment of gasoline. At terminals where blending of ethanol or other alternative oxygenates must take place, equipment for handling these additives may be required to be installed. According to MDE, there are nine major gasoline terminal facilities in Maryland that would likely be required to upgrade their facilities in order to receive, store, and blend an alternative oxygenate such as ethanol. The estimated cost of the upgrades is \$150,000 per terminal. In addition, tank owners could incur additional costs to replace tank linings and other equipment affected by ethanol as well as to drain water from tank bottoms more frequently. MDE advises that terminals are most likely not small businesses, however. Several out-of-state terminals would also have to make modifications in order to sell their gasoline product in Maryland. Businesses involved in the installation of oil terminal facility equipment could benefit from an increase in the demand for their services.

Any additional costs incurred by gasoline terminals would likely be passed onto distributors, service stations, and ultimately, consumers. According to MDE, there are approximately 1,500 gasoline service stations in areas that could be affected by the bill. Service stations would incur additional costs to upgrade their gasoline dispenser filtration systems (estimated at \$110 per dispenser, or about \$880 per station). MDE advises that vehicles manufactured prior to 1981 may have some gas tank and fuel system compatibility problems with ethanol.

Farmers would likely benefit from a ban on MTBE due to an increase in the demand for ethanol. Some states that have banned MTBE, such as Illinois, Iowa, and Minnesota,

have noted positive economic impacts on agriculture. In addition, the bill could spur economic activity related to the production of alternative oxygenates such as ethanol.

Small businesses that operate public water systems could benefit from a reduction in MTBE contamination and related costs; however, alternative oxygenates may create new challenges for investigation and remediation of oil spills.

**Additional Comments:** MDE advises that completely banning MTBE, ETBE, and TAME by October 1, 2010 is not technically feasible. According to MDE, most petroleum product that is consumed in Maryland is transported in a common pipeline from Texas and Louisiana and then transferred into trucks and storage tanks for distribution. This product commingles with other petroleum products, which become cross-contaminated with *de minimus* amounts of MTBE, ETBE, and TAME. In addition, if surrounding states do not ban MTBE, ETBE, and TAME, there will always be a cross-contamination problem with gasoline in Maryland.

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### **Additional Information**

**Prior Introductions:** None.

**Cross File:** None.

**Information Source(s):** Maryland Department of the Environment, Comptroller's Office, Department of General Services, U.S. Environmental Protection Agency, Department of Legislative Services

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