

Department of Legislative Services
Maryland General Assembly
2002 Session

FISCAL NOTE

House Bill 1056 (Delegate Zirkin)
Environmental Matters

Environment - Wastewater Treatment - Use of Chlorine and Ultraviolet Light

This bill relates to the use of ultraviolet (UV) light instead of chlorine and chlorine compounds in the treatment of wastewaters discharged from publicly or privately owned sewage treatment plants.

Fiscal Summary

State Effect: Potential increase in general fund expenditures beginning in FY 2003 for the Maryland Department of the Environment's (MDE) existing wastewater regulatory program. General fund expenditures also could increase as a result of any increase in rates assessed for wastewater treatment. No effect on revenues.

Local Effect: Significant increase in local expenditures to retrofit wastewater treatment plants (several millions of dollars) and operate those plants. **This bill imposes a mandate on a unit of local government.**

Small Business Effect: Meaningful.

Analysis

Bill Summary: The bill requires a sewage treatment plant, beginning October 1, 2006, to use UV light in the treatment of wastewaters discharged from the plant. The sewage treatment plant may not use chlorine or chlorine compounds. MDE may not issue a permit that allows the use of chlorine or chlorine compounds in treatment of wastewaters discharged from any publicly or privately owned sewage treatment plant to any surface waters of the State that is in effect on or after October 1, 2006.

The bill also makes a conforming change by providing that beginning October 1, 2006, the allowable level of chlorine that may be discharged into the Chesapeake Bay or its tributaries in April and May of each year by a person with a discharge permit (not including sewage treatment plants) must not be greater than the level determined by MDE in consultation with the Department of Natural Resources.

Current Law: Except as otherwise prohibited, MDE may issue a permit that allows the use of chlorine or chlorine compounds in treatment of wastewaters discharged from any publicly or privately owned sewage treatment plant to any surface waters of the State. The treatment of the wastewaters must include dechlorination.

A person must hold a discharge permit issued by MDE before the person may construct, install, modify, extend, alter, or operate specified facilities if its operation could cause or increase the discharge of pollutants into the waters of the State. A person who has a discharge permit may not discharge chlorine or chlorine products into the Chesapeake Bay or its tributaries during April and May of any year at a level that is greater than the chlorine discharge level that is applicable to a publicly or privately owned sewage treatment plant.

Background: According to the U.S. Environmental Protection Agency (EPA), chlorination has been used widely to disinfect wastewater prior to discharge from treatment plants. In the years following the passage of the federal Clean Water Act, disinfected wastewater with significant levels of residual chlorine was routinely discharged into surface waters. However, it became evident that residual chlorine can be toxic to aquatic life, and that the reaction of chlorine with organic materials in the water can form cancer-causing compounds. As a result, wastewater was dechlorinated prior to its discharge. An alternative to dechlorination is to achieve disinfection without the use of chlorine. According to EPA, other means of disinfection, such as ozone and UV disinfection, have become increasingly prevalent.

Another concern related to the use of chlorine in the treatment of wastewater is security-related. Many wastewater treatment plants use chlorine gas. If released into the environment, the gas can have lethal effects. In light of increased security concerns, plant operators are raising questions about the advisability of storing large amounts of chlorine gas at facilities.

According to MDE, there are about 400 community wastewater treatment plants in the State (about 160 of which are publicly owned and 240 of which are privately owned). MDE advises that about 85% of the treatment plants in the State currently use chlorine to

disinfect wastewater. (While about 15% of all plants in Maryland use UV disinfection, MDE advises that this represents less than 2% of the total wastewater flow in the State).

In response to other concerns related to wastewater treatment plants, the Governor established a Task Force on Upgrading Sewerage Systems in the State. In its November 2001 report, the task force identified existing needs (not including retrofits to UV disinfection) to be \$4.3 billion over the next 20 years.

State Expenditures: MDE advises that general fund expenditures would increase by \$208,255 in fiscal 2003, which reflects the bill's October 1, 2002 effective date. The estimate reflects the cost of hiring four public health engineers (one to augment its existing permitting activities, one to augment its existing compliance activities, and two to augment its existing capital program activities). The estimate includes costs related to vehicle and equipment purchases as well as ongoing operating expenses including travel.

Legislative Services agrees that MDE's expenditures related to permitting and enforcement could increase initially to rewrite existing permits and to ensure compliance. However, at this time it is unclear that the bill's requirements justify the need for an additional four employees. First, MDE already regulates these entities and has employees dedicated to permit writing and enforcement. Second, two of the four employees MDE advises it would need are based on the assumption that MDE's Water Quality Revolving Loan Fund would fund additional projects as a result of this bill. Legislative Services advises that at this time, the extent to which projects related to retrofitting plants from chlorine to UV light would replace other capital projects is unknown; therefore, any increase in workload related to administering the loan program under this bill cannot be reliably estimated.

As a generator of waste, the State could incur an increase in expenditures related to wastewater treatment to the extent plant operators raise their rates as a result of the bill.

Local Fiscal Effect: Local governments are responsible for the operation and maintenance of publicly owned wastewater treatment plants. By mandating the use of UV disinfection in lieu of chlorine and chlorine compounds, the bill will result in a significant increase in local expenditures related to retrofitting wastewater treatment plants. MDE advises that costs to retrofit all wastewater treatment plants that currently use chlorine (about 340 plants total) could range from \$75 million to \$175 million statewide depending on the exact nature of the retrofits.

While publicly owned plants account for only 160 of the 400 plants in the State, and of these, an estimated 136 plants currently use chlorine as a disinfectant, MDE advises that the majority of the costs associated with retrofitting plants will be borne by local

jurisdictions. The Washington Suburban Sanitary Commission (WSSC) advises that it expects to incur capital costs of \$15 million to retrofit all its plants; the WSSC further advises that costs to operate the UV disinfection process are expected to be approximately \$300,000 more per year than current operating costs associated with the chlorine disinfection process.

To the extent local jurisdictions receive any federal or State funds to offset those costs, expenditures would decrease accordingly. It is assumed that local jurisdictions would increase their user rates in order to offset at least a portion of the costs that would occur as a result of this bill.

Small Business Effect: Small businesses that own and operate private wastewater treatment plants could also be significantly affected by the bill's requirement that UV disinfection be used instead of chlorine and chlorine compounds. Of the 400 wastewater treatment plants in the State, approximately 240 of them are privately-owned. An estimated 85% of these (204 plants) currently use chlorine and would be required to convert to UV light under the bill; the number of these plants that would be considered small businesses is unknown, however.

Any small business that generates waste could be affected to the extent that wastewater treatment plant operators increase their rates as a result of the bill.

Additional Information

Prior Introductions: None.

Cross File: None.

Information Source(s): Maryland Department of the Environment, Washington Suburban Sanitary Commission, Department of Natural Resources, Prince George's County, Department of Legislative Services

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Analysis by: Lesley Frymier

Direct Inquiries to:
John Rixey, Coordinating Analyst
(410) 946-5510
(301) 970-5510

