



Virginia Department of Planning and Budget **Economic Impact Analysis**

9 VAC 20-81 Solid Waste Management Regulations
Department of Environmental Quality
Town Hall Action/Stage: 5415 / 9457
December 9, 2021

The Department of Planning and Budget (DPB) has analyzed the economic impact of this proposed regulation in accordance with § 2.2-4007.04 of the Code of Virginia (Code) and Executive Order 14 (as amended, July 16, 2018). The analysis presented below represents DPB's best estimate of these economic impacts.¹

Summary of the Proposed Amendments to Regulation

Following action by the Governor, a periodic review, and the work of a regulatory advisory panel, the Virginia Waste Management Board (Board) proposes amendments to landfill siting, operations, and gas and groundwater monitoring, as well as a ban on the open burning of household trash.

Background

This regulatory proposal was developed by the Department of Environmental Quality (DEQ) staff based on the comments received during the periodic review and Notice of Intended Regulatory Action (NOIRA) comment periods, recommendations included in the August 2019 final report submitted by the Secretary of Natural and Historic Resources (Secretary) to the Governor in response to the Governor's Executive Order 6 (2018), meetings with members of the Regulatory Advisory Panel (RAP), and feedback from program staff.

¹ Code § 2.2-4007.04 requires that such economic impact analyses determine the public benefits and costs of the proposed amendments. Further the analysis should include but not be limited to: (1) the projected number of businesses or other entities to whom the proposed regulatory action would apply, (2) the identity of any localities and types of businesses or other entities particularly affected, (3) the projected number of persons and employment positions to be affected, (4) the projected costs to affected businesses or entities to implement or comply with the regulation, and (5) the impact on the use and value of private property.

*Executive Order 6 (2018).*²

On April 3, 2018, Governor Northam issued Executive Order Six (EO 6), “Supporting the Critical Role of the Virginia Department of Environmental Quality in Protection of Virginia’s Air, Water, and Public Health.” This EO required the DEQ director to review the agency’s permitting, monitoring, and enforcement activities across the air, water, and solid waste programs. It also required the DEQ director to work with stakeholders to improve communication with the public and the regulated community and provide more opportunities for proactive education, especially among underserved and lower income populations. The EO further mandated that the Director of DEQ report monthly to the Secretary on the progress of these reviews. The Secretary was also tasked with sending a report on recommended actions to the Governor.

*Report Issued by Secretary of Natural Resources.*³

In response to EO 6, the Secretary submitted a final report to the Governor in August 2019. The report recommends that solid waste management regulations be revised to: (1) ensure that facilities provide adequate financial assurance that they can fund cleanup and closure, (2) update provisions related to setbacks and siting of solid waste facilities, as well as solid waste facility leachate pollution, (3) eliminate or significantly reduce –with restrictions on timing, conditions, and residuals management –the open burning of household solid waste, and (4) require groundwater monitoring and safe disposal of Coal Combustion By-Product (CCB/coal ash) at non-utility facilities not covered by the federal CCB rule. Other sections of the report urge an increase in efficiency and responsiveness in permitting and an improvement in public engagement.

*Periodic Review.*⁴

On June 10, 2019, a periodic review of this regulation was announced in the Virginia Register of Regulations. During the 21-day public comment period that followed, comments

² <https://www.governor.virginia.gov/media/governorvirginiagov/executive-actions/eo-6-executive-order-supporting-the-critical-role-of-the-virginia-department-of-environmental-quality-in-protection-of-virginia-s-air-water-and-public-health.pdf>

³ See page 8 at <https://www.governor.virginia.gov/media/governorvirginiagov/media/EO-6-Final-Report-from-SNR.pdf>

⁴ <https://townhall.virginia.gov/L/comments.cfm?periodicreviewid=1807>

were received from ten individuals, four of whom posted comments on Town Hall; the others apparently contacted the agency directly. These comments suggested changes to the siting, design, operation, and monitoring of municipal solid waste landfills; requirements for host agreements; and public notification requirements. Commenters also provided information about other states' regulations in this area and requested that Virginia adopt similar requirements. Still other commenters requested additional regulation of, and requirements for, landfills larger than a specified size. The agency took these comments into consideration as it developed regulatory text in this action.

Regulatory Advisory Panel (RAP).

A regulatory advisory group was formed to assist in developing this action and consisted of six members, including a representative of the waste management industry, a public citizen, a local government representative, two consultants (an engineer and a representative of the Solid Waste Association of North America), and a representative of environmental groups. According to the agency, a consensus was not achieved on a new or expanded landfill's setback distance to a residence, school, daycare center, hospital, nursing home, or recreational park area (described below), but there was agreement that the current distance should be increased. No consensus was reached on how often waste should be covered at an active industrial landfill (also described below), but there is now a provision that ameliorates that requirement by allowing an active industrial landfill to propose an alternative that would achieve the same result.

Estimated Benefits and Costs

Landfill Siting.

One of the main changes proposed is an increase in the setback distance from a waste management boundary to the facility boundary, which would be increased from 50 feet to 100 feet. In addition, the distance from the waste management boundary to any residence, school, daycare center, hospital, nursing home, or recreational park area in existence at the time of application would be increased from 200 feet to 500 feet. These changes would create a larger buffer between the waste management boundary and development on properties adjacent to the landfill. DEQ notes that the additional buffer from the waste management boundary is consistent with the requests received from the public for an increased buffer space to be placed around landfills and is consistent with the increased setback distances found in surrounding states. The

increase to the setback distances would potentially reduce noise and odor concerns, and provide more protection to adjacent properties from potential subsurface methane gas migration.

The proposed setback requirements are prospective in that the current landfills would be grandfathered from the revised setback distances. Increased setback distances would essentially create a larger buffer that would not be available for other uses, including the landfill's capacity. New and expanded landfill owners could meet the new siting criteria by increasing the land area to achieve the same capacity or by reducing the capacity if additional land area is not available or feasible. Thus, the expected cost to new and expanded landfill owners is either the purchase of additional land or a reduction in capacity. Conversely, values of real property that would be within the additional buffer areas created by this action may also be affected. For example, a landfill owner may choose to purchase additional real estate adjacent to a prospective site to keep the capacity as planned prior to this action. Or, some land may be rendered no longer suitable for siting as a landfill.

Landfill Operations.

A new requirement for active landfills to conduct an annual topographic survey would be added to the regulation. Topographic surveys ensure the landfill is filled according to its permitted design capacity, prevent overfilling of the landfill and potential impacts to landfill stability, and verify when final elevations and slopes have been attained so that closure construction can be planned and implemented. Periodic topographic surveys also result in more accurate and up-to-date information on remaining capacity and life of the landfill. Landfills receiving fewer quantities of waste (those with a permitted daily disposal limit of 300 tons per day or less) would be required to conduct the survey on a biennial basis (once every 24 months), whereas all other landfills must survey and report on an annual basis (once every 12 months).

According to DEQ, some landfills are already required by their permit to conduct these surveys and some do so voluntarily. DEQ estimates that approximately 55 active landfills would be impacted by the requirement to conduct a periodic topographic survey because the remaining landfill permits already include this requirement. Based on the daily disposal limits of currently permitted landfills, approximately 35 active landfills would be impacted by the annual survey requirement, and approximately 20 active landfills would be impacted by the biennial survey requirement. Based on feedback from one large landfill that is already subject to this requirement

by permit, the cost of the proposed survey is estimated to be \$16,000 for that facility but could be as low as \$5,000 for smaller facilities.

A requirement for weekly cover of six inches of compacted soil to be applied over exposed waste at active industrial landfills would be added. Currently, the regulation states that these facilities are to provide “periodic cover” without a specific time frame. According to DEQ, current inspection data indicates the periodic cover being applied is not adequate to prevent issues with fires, odors, blowing litter, stormwater infiltration, excess leachate generation, surface and subsurface erosion of waste, waste slides, compromised stability, and releases of waste and leachate at industrial landfills. In consideration of the RAP discussion and feedback, the proposed amendment allows DEQ to evaluate alternate methods proposed by the facility to address the same performance standards.

Twenty active industrial landfills, of which 19 are privately owned and operated (one is owned and operated by a local government authority), would be required to provide weekly cover. The soil used for weekly cover could be removed later and reused. The costs of application of weekly soil cover would vary depending on the landfill’s adjusted ongoing working face size; the extent to which soil is removed and reused between lifts; and availability of soil onsite versus purchase and/or transport from offsite. The requirement for weekly cover would likely lead to industrial landfills minimizing the size of their working face to minimize the amount of weekly cover required to be applied, and would in turn minimize the amount of exposed waste at the facility. It is worth noting, however, that flexibility has been added to the regulation to allow landfills to investigate and propose less costly methods to meet the same performance standards based on site-specific conditions.

Landfill Gas Exceedance Notification.

A new requirement would be added for landfills to notify adjacent properties within 500 feet when gas compliance levels have been exceeded (i.e., methane gas detected at or above the lower explosive limit) in the perimeter gas monitoring network. Landfill gas may migrate subsurface and accumulate in nearby off-site structures. The goal is to inform neighboring properties concerning the potential for the subsurface migration of methane and the safety risks related to explosive gases. Only landfills that detect compliance level exceedances of methane within 500 feet of an occupied structure would be impacted by this proposal.

The cost of sending notices to adjacent property owners would be consistent with regular mail costs, but is expected to provide landfill owners with an additional incentive to maintain compliance with exceedance limits. Increased awareness of a nearby problematic landfill operation may adversely affect the perceived values of nearby properties and may prompt complaints and litigation.

Additional costs to landfill owners may accrue as facilities would be required to offer monitoring inside nearby offsite structures for elevated levels of methane after an exceedance is detected in the perimeter gas monitoring network. The costs of additional monitoring would vary from site to site depending on whether exceedances are detected and whether occupied structures are in close proximity. DEQ does not expect the costs of additional offsite monitoring to be significant because the majority of landfills do not have occupied structures within 500 feet of the perimeter gas monitoring network, and any additional monitoring could be conducted in conjunction with the current monitoring that already occurs at the facility.

Monitoring of Additional Constituents in Groundwater.

The proposed groundwater monitoring requirement is contingent upon the Maximum Contaminant Levels (MCLs) to be established for polyfluoroalkyl substances (PFAS) and other emerging contaminants by the Virginia Department of Health (VDH) pursuant to Chapter 1097, 2020 Acts of Assembly.⁵ Chapter 1097 modifies §32.1-169 of the Code of Virginia (effective on January 1, 2022) and directs the State Board of Health to “adopt regulations establishing [MCLs] in all water supplies and waterworks in the Commonwealth for (i) [PFAS] as the board deems necessary; (ii) chromium-6; and (iii) 1,4-dioxane.”

In anticipation of these new MCLs, a proposed amendment would add a new column, Column C, to Table 3.1 in the regulation. The proposed Column C lists emerging constituents for which MCLs will be established by VDH in response to the statutory mandate. The content of Column C can be modified in the future if necessary, based on the actions taken by VDH to adopt MCLs for emerging constituents. MCLs must be adopted by VDH before this regulation will be amended to require monitoring for these constituents; however, this information has been included in this amendment to provide a framework for these additional monitoring constituents

⁵ <https://lis.virginia.gov/cgi-bin/legp604.exe?201+sum+HB1257>

and to provide the regulated community with insight concerning how these new MCLs would be incorporated in monitoring requirements for solid waste disposal facilities. Once final MCLs are adopted by VDH, Column C will be updated, if necessary, for consistency with MCLs adopted by VDH, and monitoring for constituents listed in Column C would be required for all landfills.

PFAS are manufactured chemicals that are found in many items that are allowed to be disposed in landfills, such as cookware and clothing. These chemicals do not degrade in the environment and thus leach into soil, air, and water. This may contribute to the presence of PFAS in the blood of 97 percent of Americans.⁶ Additionally, health risks from groundwater constituents are constantly being evaluated and updated. Including the monitoring of PFAS and other emerging constituents in groundwater is an additional measure to detect and address any impacts to groundwater from the landfill so that risks to human health and the environment can be better understood. All active landfills and all closed landfills conducting post-closure care may be impacted by the requirement for groundwater monitoring of additional constituents if VDH establishes MCLs for PFAS or other emerging contaminants listed in Column C of Table 3.1.

This would be an additional cost for entities that choose to own or operate a landfill. Members of the RAP provided cost information on analyzing groundwater samples. One estimate was for the testing for 49 PFAS constituents at a cost of \$349 using a non-SW-846 test method (EPA test method 537.1). Other RAP members provided more general estimates of testing for PFAS of \$350-\$500 per sample, while others estimated costs of \$500-700 per sample and did not indicate the analytical test method used. The regulation has been drafted to allow the use of non-SW-846 test methods for constituents listed in Column C of table 3.1 to provide flexibility concerning the test methods to be used.

The proposed list of new sampling constituents would be subject to the existing groundwater sampling frequency set for each individual site in its corresponding solid waste permit. Semi-annual is the baseline sampling frequency. However, site specific criteria or the locality may mandate quarterly sampling.

⁶ <https://www.niehs.nih.gov/health/topics/agents/pfc/index.cfm>

Ban on Open Burning of Household Trash.

This proposal would remove language that previously allowed citizens to dispose of their household solid waste through open burning of waste on their property if regularly scheduled collection services are not available at the adjacent road. Under the amended regulation, only vegetative waste, clean wood and clean paper products would be allowed to be openly burned on private property when no regular collection services are available. This change is proposed in response to the Secretary's report to the Governor noted above, which recommended that the regulations be revised to eliminate or significantly reduce the open burning of household solid waste. DEQ states that combustion of materials commonly found in household waste (e.g. plastics) is well documented to release carcinogenic compounds, and the smoke and odors from the burning of household waste may be a nuisance to adjacent property owners. Other open burning exemptions are also being modified to be consistent with open burning requirements for Volatile Organic Compound Emissions Control Areas found in regulations adopted by the State Air Pollution Control Board.

DEQ expects a reduction in complaints from neighbors will result from this ban on open burning of household waste. Due to the unknown number of affected households and different fee structures implemented by localities to assess fees for waste disposal, however, DEQ is not able to assess the size of the economic impact of this change.

Promotion of Composting Activities.

Changes are being proposed to the regulation to further promote composting activities. Additional exemptions from permitting have been added to the regulation for certain composting activities on farms as well as composting activities performed in conjunction with a public/private event or festival. The Board is also proposing to remove the requirement for compost facilities to conduct parasite testing because historical data has demonstrated that parasites have not posed issues with final compost quality.

Closure Cost Estimates.

The regulation is also being revised to require that closure cost estimates include the costs related to the removal of stockpiled beneficial use materials (e.g. tire chips) at a facility in response to the Secretary's report noted above, which recommended that the regulations be

revised to ensure that facilities provide adequate financial assurance that they can fund cleanup and closure. This amendment would require facilities' closure cost estimates to include costs for removal of beneficial use materials (which are not included currently) when calculating the financial assurance a facility is required to provide for closure of the facility. This change protects the Commonwealth from having to pay for the removal and disposal of beneficial use material if a facility fails to properly close.

Other Changes.

The remaining proposed changes are clarifications of the following parts of the regulation: financial responsibility requirements, public participation, groundwater monitoring, exemptions and exclusions, closure and post closure requirements, permitting process, and recordkeeping requirements. These clarifying changes are not expected to create a significant economic impact other than improving the accuracy of the regulatory text.

Businesses and Other Entities Affected

DEQ reports that as of August 2021, 181 permitted landfills would be affected by the proposed amendments, including 128 sanitary landfills (80 closed), 24 construction/demolition/debris landfills (10 closed), and 29 industrial landfills (9 closed).

The Code of Virginia requires DPB to assess whether an adverse impact may result from the proposed regulation.⁷ An adverse impact is indicated if there is any increase in net cost or reduction in net revenue for any entity, even if the benefits exceed the costs for all entities combined. As noted above, the proposed amendments add new requirements and would increase costs for landfills. Thus, an adverse impact is indicated.

This regulation also applies to permitted non-landfill facilities which include 15 compost facilities, 55 transfer stations, 53 materials recovery facilities, 4 waste to energy facilities, 3 incinerators, and 8 surface impoundments. DEQ anticipates that the impacts to non-landfill

⁷ Pursuant to Code § 2.2-4007.04(D): In the event this economic impact analysis reveals that the proposed regulation would have an adverse economic impact on businesses or would impose a significant adverse economic impact on a locality, business, or entity particularly affected, the Department of Planning and Budget shall advise the Joint Commission on Administrative Rules, the House Committee on Appropriations, and the Senate Committee on Finance. Statute does not define "adverse impact," state whether only Virginia entities should be considered, nor indicate whether an adverse impact results from regulatory requirements mandated by legislation.

facilities would be minimal as the proposed changes affecting these facilities clarify the intent of existing requirements and are consistent with industry standard practices.

No facilities appear to be disproportionately affected.

Of the permitted landfills, 126 are publicly owned or operated (125 by local governments and 1 by the Commonwealth), and 55 are privately owned or operated.

State agencies that own or operate waste management facilities would be subject to the same requirements as other publicly and privately owned or operated facilities. There are two permitted facilities owned or operated by state agencies – a sanitary landfill in post-closure care and a compost facility. The landfill would incur ongoing costs for conducting PFAS monitoring and for notification of gas level exceedances as discussed above.

Citizens for whom no regularly scheduled collection services are available would no longer be allowed to burn their household waste (except for vegetative waste, clean wood, and clean paper products) and would be required to manage their waste at a solid waste permitted facility or convenience center. However, it is not known how many citizens are currently burning their municipal solid waste and would be impacted by this regulatory change.

Small Businesses⁸ Affected:⁹

In general, approximately nine percent of all landfills (16 out of 181) are estimated by DEQ to be small businesses. Approximately fifteen percent of 55 facilities impacted by the survey requirement are estimated to be small businesses. Approximately ten percent of 20 active industrial landfills impacted by the weekly cover requirements are estimated to be small businesses. Thus, the proposed amendments also adversely affect small businesses.

⁸ Pursuant to § 2.2-4007.04 of the Code of Virginia, small business is defined as “a business entity, including its affiliates, that (i) is independently owned and operated and (ii) employs fewer than 500 full-time employees or has gross annual sales of less than \$6 million.”

⁹ If the proposed regulatory action may have an adverse effect on small businesses, Code § 2.2-4007.04 requires that such economic impact analyses include: (1) an identification and estimate of the number of small businesses subject to the proposed regulation, (2) the projected reporting, recordkeeping, and other administrative costs required for small businesses to comply with the proposed regulation, including the type of professional skills necessary for preparing required reports and other documents, (3) a statement of the probable effect of the proposed regulation on affected small businesses, and (4) a description of any less intrusive or less costly alternative methods of achieving the purpose of the proposed regulation. Additionally, pursuant to Code § 2.2-4007.1, if there is a finding that a proposed regulation may have an adverse impact on small business, the Joint Commission on Administrative Rules shall be notified.

Flexibility has been added to the regulation to allow industrial landfills impacted by the weekly cover requirement to investigate and propose less costly methods to meet the same performance standards based on site-specific conditions. There are no clear additional alternative methods that both reduce adverse impact on small businesses and meet the intended policy goals.

Localities¹⁰ Affected¹¹

Localities that own or operate waste management facilities would be subject to the same requirements as other publicly and privately owned or operated facilities. If operating an active landfill, a locality would be required to conduct annual topographic surveys, to monitor PFAS, to notify and take corrective action for gas level exceedances. There are 125 permitted landfills owned or operated by localities. Consequently, an adverse economic impact on these localities is indicated.

Projected Impact on Employment

The proposed requirements regarding the topographic survey, weekly cover, off-site gas monitoring, groundwater monitoring, and ban on open burning of household waste would likely add to demand for professional, skilled, and unskilled labor in related areas, and may commensurately increase employment.

Effects on the Use and Value of Private Property

The proposed new siting requirements are anticipated to have a direct impact on affected real estate properties as specifically discussed above. The asset values of 55 private landfill facilities would likely be negatively affected to the extent they incur additional compliance costs. The proposed amendments do not appear to have a direct effect on residential real estate development costs.

¹⁰ “Locality” can refer to either local governments or the locations in the Commonwealth where the activities relevant to the regulatory change are most likely to occur.

¹¹ § 2.2-4007.04 defines “particularly affected” as bearing disproportionate material impact.