

Office of Regulatory Management  
Economic Review Form

<b>Agency name</b>	Virginia Department of Health
<b>Virginia Administrative Code (VAC) Chapter citation(s)</b>	12 VAC 5 - 460 12 VAC 5 - 462
<b>VAC Chapter title(s)</b>	Chapter 460. Regulations Governing Tourist Establishment Swimming Pools and Other Public Pools Chapter 462. Swimming Pool Regulations Governing the Posting of Water Quality Test Results
<b>Action title</b>	Pool and Hot Tub Enforcement Manual
<b>Date this document prepared</b>	July 10, 2023
<b>Regulatory Stage (including Issuance of Guidance Documents)</b>	Issuance of new guidance document

**Cost Benefit Analysis**

Complete Tables 1a and 1b for all regulatory actions. You do not need to complete Table 1c if the regulatory action is required by state statute or federal statute or regulation and leaves no discretion in its implementation.

Table 1a should provide analysis for the regulatory approach you are taking. Table 1b should provide analysis for the approach of leaving the current regulations intact (i.e., no further change is implemented). Table 1c should provide analysis for at least one alternative approach. You should not limit yourself to one alternative, however, and can add additional charts as needed.

Report both direct and indirect costs and benefits that can be monetized in Boxes 1 and 2. Report direct and indirect costs and benefits that cannot be monetized in Box 4. See the ORM Regulatory Economic Analysis Manual for additional guidance.

**Table 1a: Costs and Benefits of the Proposed Changes (Primary Option)**

<p>(1) Direct &amp; Indirect Costs &amp; Benefits (Monetized)</p>	<p><b>The guidance document (Swimming Pool &amp; Hot Tub Enforcement Manual) will assist local health districts (LHDs) in determining the risk of pool and hot tub violations (12VAC5-460 and 12VAC5-462) and the applicable enforcement processes for violations that already exist within the agency (§§ 32.1 and 35.1 of the Code of Virginia).</b></p> <ul style="list-style-type: none"> <li> <p><b>Part I – Section 1: Regulatory Authority for Enforcement Actions will provide an overview of regulatory authority and general understanding of the LHDs’ ability to respond to observed pool and hot tub violations as regulated under 12VAC5-460 and 12VAC5-462.</b></p> <p>Direct Costs: There are no direct costs associated with this section.</p> <p>Indirect Costs: There are no indirect costs associated with this section.</p> <p>Direct Benefits: LHDs, environmental health staff, VDH-permitted facilities, pool owners and operators, and individuals will benefit inasmuch as the understanding of existing regulatory processes for compliance and enforcement of public pools and hot tubs will be clearer and easier to understand.</p> <p>Indirect Benefits: There are no indirect benefits associated with this section.</p> </li> <li> <p><b>Part II – Section 1: Risk Assessment and Public Health Threats will assist environmental health staff to understand and determine the risk associated with the operation, maintenance, and use of an aquatic venue.</b></p> <p>Direct Costs: There are no direct costs associated with this section.</p> <p>Indirect Costs: There are no indirect costs associated with this section.</p> <p>Direct Benefits: LHDs, environmental health staff, VDH-permitted facilities, pool owners and operators, and individuals will benefit inasmuch as the understanding of risk associated with public pools and hot tubs will be clearer and easier to understand.</p> <p>Indirect Benefits: Improved protection of public health during pool operation and during inspections.</p> </li> <li> <p><b>Part II – Section 2: Plan Review, Administrative Enforcement, and Corrective Action will assist environmental health staff with understanding the plan review process and aid in the understanding of when to consult with the building official if pool plans were not</b></p> </li> </ul>
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**submitted as required or do not meet minimal requirements, as well as how to process approvals, denials, or other notices.**

Direct Costs: There are no direct costs associated with this section.

Indirect Costs: There are no indirect costs associated with this section.

Direct Benefits: Improved communication between LHDs, building officials, and pool owners due to an increased understanding of the existing plan review process; improved and consistent plan review process that should reduce the burden and time to review the plans by environmental health staff.

Indirect Benefits: Improved protection of public health during plan reviews.

- **Part II – Section 3: Risk-based Enforcement and Corrective Action will assist environmental health staff in understanding and determining the risks and enforcement options associated with the operation, maintenance, and use of an aquatic venue identified per applicable regulation.**

Direct Costs: There are no direct costs associated with this section.

Indirect Costs: Indirect costs could include facilities being held equally accountable for non-compliance, resulting in a temporary increase in maintenance or repairs. This is expected to quickly equalize as compliance requirements would be equally enforced throughout the Commonwealth. Any additional cost associated with compliance would be a result of a facility willingly in violation with the existing regulations and the cost to bring the facility into compliance. The specific source of a violation and the cost associated with maintenance, repair, or replacement cannot be determined as it is completely variable by venue.

Direct Benefits: Improved understanding by environmental health staff and LHDs on how to enforce pool violations. This understanding will result in better protection of public health and safety through understanding and assessing risk associated with observed regulatory violations.

Indirect Benefits: Consistent enforcement of pool regulations throughout the Commonwealth.

- **Part III – Section 1: General Enforcement and Corrective Actions will assist environmental health staff with understanding the process of each possible enforcement scenario and various levels of**

**enforcement dependent upon the type of facility and public health risk.**

Direct Costs: There are no direct costs associated with this section.

Indirect Costs: Indirect costs could include facilities being held equally accountable for non-compliance, resulting in a temporary increase in maintenance or repairs. This is expected to quickly equalize or no longer be affected as compliance requirements would be equally enforced throughout the Commonwealth. Any additional cost associated with compliance would be a result of a facility willingly in violation with the existing regulations and the cost to bring the facility into compliance. The specific source of a violation and the cost associated with maintenance, repair, or replacement cannot be determined as it is completely variable by venue.

Direct Benefits: Improved understanding by LHDs on how to address imminent public health threats through timely response that will provide better protection of public health and safety. The process of enacting enforcement will be streamlined, increasing and improving the efficiency of LHDs' inspections and enforcement, while offering immediate protection of public health and safety. Such improvements will be incurred through enhanced understanding, improved communication, reduction of doubt, and other issues that would restrict or otherwise delay or hamper enforcement actions by the LHD.

Indirect Benefits: Consistent enforcement of pool regulations throughout the Commonwealth. The guidance document could make the industry market more competitive as it will hold all venues and facilities equally accountable through compliance requirements and enforcement action. Equal enforcement of the existing regulations could provide business opportunities for those promoting and offering services related to better pool management or services that assist facilities to meet and maintain existing regulatory standards.

- **Part IV – Section 1: Citations and References will assist environmental health staff with understanding the origin of risk-related guidance materials and have access to the resources.**

Direct Costs: There are no direct costs associated with this section.

Indirect Costs: There are no indirect costs associated with this section.

Direct Benefits: Improved understanding by all involved in pool inspection or operation on levels of risk and the rationale behind the determination of risk.

	<p>Indirect Benefits: Improved protection of public health.</p> <ul style="list-style-type: none"> <li><b>Part IV – Section 2: Glossary will assist environmental health staff and pool operators with understanding terminology used in discussions related to pool operations and management.</b></li> </ul> <p>Direct Costs: There are no direct costs associated with this section.</p> <p>Indirect Costs: There are no indirect costs associated with this section.</p> <p>Direct Benefits: Improved understanding of pool related terminology.</p> <p>Indirect Benefits: Consistent use of pool terminology resulting in improved communication between environmental health staff and pool operators.</p> <ul style="list-style-type: none"> <li><b>Part IV – Section 3: Appendices will assist environmental health staff with field references and application during inspections.</b></li> </ul> <p>Direct Costs: There are no direct costs associated with this section.</p> <p>Indirect Costs: There are no indirect costs associated with this section.</p> <p>Direct Benefits: Improve environmental health staff communication with pool operators; provide resources to pool operators for best practices and other understanding of risk associated with the management of pools and other aquatic venues.</p> <p>Indirect Benefits: Improved protection of public health.</p>	
(2) Present Monetized Values	Direct & Indirect Costs	Direct & Indirect Benefits
	(a) \$0	(b) Undetermined
(3) Net Monetized Benefit	\$0	
(4) Other Costs & Benefits (Non-Monetized)	<p><b>Other costs:</b> N/A</p> <p><b>Other benefits:</b> The enforcement manual will assist LHDs in determining enforcement processes that already exist within the agency. In light of understaffed local health departments with high turnover, it is often difficult for LHDs to retain seasoned environmental health staff who are familiar with the pool industry and who can maintain a consistent enforcement process for public</p>	

	<p>pool facilities. Often, enforcement options are unknown or not considered for regulatory programs that do not prescribe in the regulations the enforcement requirements for non-compliance. This guidance document will provide consistent inspection and enforcement processes throughout the state where localities rely on state pool regulations.</p> <p>The guidance document creates a direct benefit for public health and safety. It recognizes the risk associated with public pools and provides a reference for requiring compliance while promoting consistent enforcement throughout the Commonwealth. The guidance document discusses risk assessment and uses national industry standards (Center for Disease Control and Prevention’s [CDC] Model Aquatic Health Code) to identify pool-related risks. Pool management can be complex as water chemistry and the equipment used to operate a pool can require intimate knowledge of the system, especially when rapid adjustments are required to maintain patron safety. Improper chemical use can, and does, result in chemical hazards and injuries to pool operators and the public. Improper water quality can result in the presence and spread of recreational water illness, cloudy water that can increase drowning risk, and water chemistry that can damage and erode pool materials and equipment. Pool operator knowledge and skills vary greatly among facilities and localities. The guidance document provides regulatory specific discussions about risk and provides a variety of public resources for LHD staff, public pool operators, and owners to refer to when discussing and contending with pool compliance.</p>
(5) Information Sources	<p>CDC’s Model Aquatic Health Code (MAHC):  <a href="https://www.cdc.gov/mahc/editions/current.html">https://www.cdc.gov/mahc/editions/current.html</a></p>

**Table 1b: Costs and Benefits under the Status Quo (No change to the regulation)**

(1) Direct & Indirect Costs & Benefits (Monetized)	<p><b>Maintaining the status quo (no guidance document) would result in an inconsistently enforced regulatory program that has a high-risk value to public health. This inconsistent approach to a regulatory program can negatively affect the public and business as implementation and enforcement of the pool regulations can vary across county lines. Inconsistency is not supportive to business models and can result in burdensome cost and action, or inaction, that could result in illness, injury, or death at or because of public pools.</b></p> <p><b>Direct Costs:</b> There is no monetary direct cost of maintaining the “status quo” (no guidance document).</p> <p><b>Indirect Costs:</b> Indirect costs associated with the status quo, or not implementing the Pool and Hot Tub Enforcement Manual may include ongoing pool management violations that may contribute to drowning, illness, and injury. The cost of pool-related injuries was established in an</p>
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	<p>agency study published in January 2023, “An Agency Review and Recommendation to Address Illness, Injury, and Death Prevention at Public Aquatic Facilities.” The data applicable to this analysis was extrapolated from the study. Aside from the immeasurable cost of fatal drownings, hospital and treatment costs and time for non-fatal drownings can be devastating to families. Between 2016 to 2020, 2,758 visits were made to Virginia emergency room and urgent care facilities for pool-related drownings, submersion, and other injuries (not including visits associated with bathtubs or natural waters). Most visits (71%) occurred among children aged 0-17, with the highest incidence being among children 0-4 years old (Office of Epidemiology, 2022). There was a total of 139 inpatient hospitalizations for non-fatal drownings, 14% of which could be identified definitively as pool-related. The total drowning-related treatment cost for Virginians was over \$1.1 million, with the average hospital/medical treatment charge being \$59,548.20 and the average length of hospital stay being 4.7 days (Office of the Chief Medical Examiner). Note that this doesn’t include medical cost burden associated with illness or non-drowning injury.</p> <p>The provided Virginia drowning and injury data includes information related to all pools (public and private) in Virginia. The data is intended to illustrate that there is a risk associated with swimming pools and aquatic venues, and there is therefore a public health risk associated with these recreational venues. Due to the general nature of the indirect cost assessment, the values presented in this section are not reflected in the indirect costs (Table 1b[2]).</p> <p><b>Direct Benefits:</b> There are no direct benefits associated with maintaining the “status quo.”</p> <p><b>Indirect Benefits:</b> There are no indirect benefits associated with maintaining the “status quo.”</p>	
(2) Present Monetized Values	Direct & Indirect Costs	Direct & Indirect Benefits
	(a) \$0	(b) \$0
(3) Net Monetized Benefit	\$0	
(4) Other Costs & Benefits (Non-Monetized)	<p>Other costs for maintaining the “status quo” could include a decreased value of the tourism industry in Virginia, as public pools continue to be regulated by outdated and inconsistently enforced regulation.</p> <p>There are no other or additional benefits for maintaining the “status quo.”</p>	

(5) Information Sources	Virginia Department of Health. 2023. Agency Review and Recommendation to Address Illness, Injury, and Death Prevention at Public Aquatic Facilities. Richmond, VA.
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**Table 1c: Costs and Benefits under Alternative Approach(es)**

(1) Direct & Indirect Costs & Benefits (Monetized)	<b>There are no alternative approaches to the guidance document. The guidance document is the most appropriate method to provide guidance and resources to Department staff and facility operators related to understanding and identifying risk, as well as the implementation of various enforcement methods provided by the regulations and the Code of Virginia.</b>	
(2) Present Monetized Values	Direct & Indirect Costs	Direct & Indirect Benefits
	(a)	(b)
(3) Net Monetized Benefit		
(4) Other Costs & Benefits (Non-Monetized)		
(5) Information Sources		

**Impact on Local Partners**

Use this chart to describe impacts on local partners. See Part 8 of the ORM Cost Impact Analysis Guidance for additional guidance.

**Table 2: Impact on Local Partners**

(1) Direct & Indirect Costs & Benefits (Monetized)	<p><b>Direct Costs:</b> There are no direct costs to local partners associated with the guidance document.</p> <p><b>Indirect Costs:</b> Indirect costs associated with the guidance document may include an increase in referrals to the local building department in response to compliance requirements including questions, inspection, and/or permitting.</p> <p><b>Direct Benefits:</b> There are no direct benefits to local partners associated with the guidance document.</p> <p><b>Indirect Benefits:</b> Indirect benefits to local partners may include a temporary increase in local revenue through building permits associated</p>
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	with compliance requirements. The monetary value of this indirect benefit cannot be estimated as it is entirely subjective.	
(2) Present Monetized Values	Direct & Indirect Costs	Direct & Indirect Benefits
	(a) \$0	(b) \$0
(3) Other Costs & Benefits (Non-Monetized)	Other benefits to local partners related to the guidance document may include a long-term increase in tourism as public pools throughout the state are equally enforced, thereby improving the overall quality of tourism venues and increasing public trust in local venues that have public pools.	
(4) Assistance	The agency could provide local partners a copy of the publicly available guidance document for reference and understanding of the agency’s expectations and enforcement processes.	
(5) Information Sources	N/A	

**Impacts on Families**

Use this chart to describe impacts on families. See Part 8 of the ORM Cost Impact Analysis Guidance for additional guidance.

**Table 3: Impact on Families**

(1) Direct & Indirect Costs & Benefits (Monetized)	<p><b>Direct Costs:</b> There are no direct costs to families associated with the guidance document.</p> <p><b>Indirect Costs:</b> Indirect costs to associated with the guidance document may include an increase in pool use fees established by a facility in response to compliance requirements including increased maintenance or repairs. The monetary value of this indirect cost cannot be estimated as it is entirely subjective.</p> <p><b>Direct Benefits:</b> There are no direct benefits to families associated with the guidance document.</p> <p><b>Indirect Benefits:</b> Indirect benefits to families associated with the guidance document may include improved conditions and water quality at public pools which, in turn, may reduce occurrences and medical costs of recreational water illness, injury, and drowning.</p> <p>The cost of pool-related injuries was established in an agency study published in January 2023, “An Agency Review and Recommendation to</p>
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	<p>Address Illness, Injury, and Death Prevention at Public Aquatic Facilities.” The data applicable to this analysis was extrapolated from the study. Aside from the immeasurable cost of fatal drownings, hospital and treatment costs and time for non-fatal drowning can be devastating to families. Between 2016 to 2020, drowning-related treatment cost for Virginians was over \$1.1 million, with the average hospital/medical treatment charge being \$59,548.20 and the average length of hospital stay being 4.7 days (Office of the Chief Medical Examiner). The guidance document would ideally improve public pool inspections and compliance that should reduce the potential occurrence and cost of pool-related illness and injury.</p> <p>The provided Virginia drowning and injury data includes information related to all pools (public and private) in Virginia. The data is intended to illustrate that there is a risk associated with swimming pools and aquatic venues, and there is therefore a public health risk associated with these recreational venues. Due to the general nature of the indirect cost and benefit assessment, the values presented in this section are not reflected in the indirect benefit monetized values (Table 3[2]).</p>	
(2) Present Monetized Values	Direct & Indirect Costs	Direct & Indirect Benefits
	(a) \$0	(b) \$0
(3) Other Costs & Benefits (Non-Monetized)	Other benefits of the guidance document for families may include equitable compliance requirements and enforcement across the state. The guidance document is an importance step towards ensuring preventative measures are in place to reduce the risk for all Virginians at all public swimming pools and aquatic venues.	
(4) Information Sources	Virginia Department of Health. 2023. Agency Review and Recommendation to Address Illness, Injury, and Death Prevention at Public Aquatic Facilities. Richmond, VA.	

**Impacts on Small Businesses**

Use this chart to describe impacts on small businesses. See Part 8 of the ORM Cost Impact Analysis Guidance for additional guidance.

**Table 4: Impact on Small Businesses**

(1) Direct & Indirect Costs & Benefits (Monetized)	<p><b>Direct Costs:</b> There are no direct costs to small businesses associated with this guidance document.</p> <p><b>Indirect Costs:</b> Indirect costs could result from existing regulatory compliance requirements, such as maintenance or repairs to the pool and related equipment. Some businesses may hire an outside pool</p>
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	<p>management company to meet these needs. While such costs will be dependent upon the venue, location, and the local economy, an estimated annual cost for contracted pool maintenance can be estimated at \$5,230. Pool repair costs will vary by venue and need but could range from \$10 to \$20,000 with an average estimated cost of \$900 per repair.</p> <p>Indirect cost estimates related to maintenance and repair are variable per facility and could be incurred as a response to regulatory requirements regardless of the existence of a guidance document. The indirect cost discussion is included in this section in anticipation of a potential increase in consistently applied enforcement throughout the Commonwealth.</p> <p><b>Direct Benefits:</b> There are no direct benefits to small businesses associated with this guidance document.</p> <p><b>Indirect Benefits:</b> Indirect benefits could include increased use of the public pool at the facility due to better pool conditions and, in turn, could contribute to increased revenue. The monetary value of this indirect benefit cannot be estimated as it is entirely subjective.</p>	
(2) Present Monetized Values	Direct & Indirect Costs	Direct & Indirect Benefits
	(a) \$0 to 20,000 (cost estimated and associated with compliance with existing applicable regulations)	(b) Undetermined
(3) Other Costs & Benefits (Non-Monetized)	<p>Other costs associated with the guidance document could result in a small business owners determining that adequate management of the pool will require additional resources, in the form of additional staff or an external pool service company, thus increasing their overhead cost and burden to manage the facility. This determination would be made by the business and not the agency.</p> <p>Other benefits associated with the guidance document may include increased knowledge and awareness regarding pool management and public health. The guidance document provides public informational resources regarding the science and public health rational behind the compliance requirements. This increase in awareness and knowledge may lead to improved business management, revenue, and public health.</p>	
(4) Alternatives	<p>The risk associated with public pools is not dependent upon the size of a business (small or large) but rather on the venue itself (size, complexity in design or operation) and the management of the venue. The management of a public pool is dependent upon the size and capacity of a business and can be successfully developed and deployed by the business and be reflective of the individual business plan or model.</p>	

	<p>Alternatives to a guidance document include regulatory amendments that address the risk associated with public pools and prescribe enforcement for non-compliance. Any consideration for the reduction of responsibility or the need to comply with existing pool regulations for small businesses would be irresponsible and dangerous to public health and safety.</p> <p>The guidance document was developed with consideration that each venue, facility, and management style may be unique, and that compliance situations may vary on a case-by-case basis and that compliance schedules and plans should not target, negatively impact, or marginalize small business.</p>
(5) Information Sources	<p><a href="https://www.forbes.com/home-improvement/pool/pool-maintenance-cost/">https://www.forbes.com/home-improvement/pool/pool-maintenance-cost/</a></p> <p><a href="https://homeguide.com/costs/pool-maintenance-cost">https://homeguide.com/costs/pool-maintenance-cost</a></p> <p>Verbal telephone communication between OEHS and pool management companies serving the Richmond area.</p>

**Changes to Number of Regulatory Requirements**

**Table 5: Regulatory Reduction**

For each individual action, please fill out the appropriate chart to reflect any change in regulatory requirements, costs, regulatory stringency, or the overall length of any guidance documents.

*Length of Guidance Documents (only applicable if guidance document is being revised)*

<b>Title of Guidance Document</b>	<b>Original Length</b>	<b>New Length</b>	<b>Net Change in Length</b>
Swimming Pool and Hot Tub Enforcement Manual	0 - NEW	67 pages	+67