sediment control program, DEQ conducts reviews of these programs once per five years. DEQ is developing a similar program to conduct reviews of the VSMP implemented by localities. Additionally, any land-disturbing activities equal to or greater than 2,500 square feet and less than one acre located in areas designated as subject to the Chesapeake Bay Preservation Act must also comply with the minimum standards of the Virginia Erosion and Sediment Control regulations and the technical criteria and program requirements of the Virginia Stormwater Management Program regulations. However, construction general permit coverage is not required for those activities less than one acre, unless they are part of a common plan of development or sale.

Water Quality Management Planning

DEQ uses Water Quality Management Plans (WQMPs), required by section 303(e) of the Clean Water Act, as the link between the water quality assessment required for this report and water quality-based controls. WQMPs recommend control measures for the water quality problems identified and characterized in the 305(b) report. Control measures recommended in the plans are implemented through the VPDES permit system for point sources and regulated nonpoint sources such as some stormwater as described above, and through the voluntary incentive-based application of Best Management Practices (BMPs) for nonpoint sources as described in Chapter 5. WQMPs establish the strategy for returning impaired waters to meet water quality standards and for preventing the degradation of high-quality waters.

6.2 303(d) Program Vision

6.2.1 Introduction

The Virginia Department of Environmental Quality (DEQ) is implementing the national 2022-2032 Vision for the Clean Water Act Section 303(d) Program (hereafter, 2022 Vision) which is the culmination of EPA's collaboration with the states, territories, and tribes (hereafter, "states") to renew and update EPA's 2013 long-term Vision. EPA's intent for the 2022 Vision is to identify opportunities for states to effectively manage their own 303(d) programs and achieve their unique water quality objectives. A key component of the 2022 Vision calls for each state to develop a Prioritization Framework that describes its long-term planning priorities through a discussion of goals and focus areas. DEQ has developed VA's Prioritization Framework as a planning document that highlights priorities for the development of restoration plans and the employment of special studies for water quality impairments in need of greater study. The Framework also communicates the importance of planning and collaboration not only among 303(d) programs but also programs that fall outside 303(d) including other government and non-government entities and stakeholders. While the Framework describes planning priorities through 2032, it also allows for flexibility and adaptability to allow for changing circumstances. As such, it may become necessary to make future adjustments to the Framework to meet current and unforeseen challenges. If a modification to the Framework is required, the public will be engaged in conjunction with the Integrated Report public process. Virginia's long-term planning for restoration of water quality is comprised of goals and focus areas which are discussed below.

6.2.2 Framework Goals

The purpose of the Framework is to describe VA's long-term restoration plans to improve water quality most effectively and efficiently. Virginia's Framework is grounded in five goals: Planning, Prioritization, Restoration, Data and Analysis, and Partnerships. The first three goals will be discussed in concert because together, they define Virginia's long-term (2032) planning priorities designed to achieve improved water quality through restoration projects. The Data and Analysis and Partnerships goals are integral to the success of the planning, prioritization, and restoration goals and therefore warrant separate discussion.

Planning, Prioritization, and Restoration

These three goals encompass the factors and considerations, described herein, provide the basis for long-term (through 2032) prioritization and planning for the development of restoration projects and special studies to improve water quality. Total Maximum Daily Loads (TMDL) and Advance Restoration Plans (ARP) are the most common types of restoration projects, but other types of projects may also be considered. The decision about the type of restoration project to be developed will be made in conjunction with project stakeholders and based on specific watershed characteristics and the most suitable option for improving water quality. Some impairments require special study designed to ascertain impairment causes, pollutant sources, and/or most feasible options for restoring water quality. Such studies will support TMDL or ARP development, the implementation of best management practices, and delisting of impaired waters.

VA will also identify shorter-term priorities every two years by identifying specific waterbodies that will be addressed through restoration plans which will be presented in each Integrated Report through 2032. Those shorter-term priorities will be selected in line with Virginia's long-term planning priorities discussed within this Framework. The identification of shorter-term priorities provides the public with a reasonable expectation for TMDL or ARP development efforts while also allowing the program the flexibility it needs to undertake additional or emerging water quality issues or projects that are more complex as resources allow or to take on new priorities such as those stemming from the Virginia Legislature or Executive Office. Planning, prioritization, and restoration will focus on the following types of water quality impairments through 2032:

- **Aquatic Life and Fish Consumption Impairments:** VA will leverage progress made in the previous Vision cycle by continuing to focus on aquatic life designated use impairments by developing TMDLs, ARPs, and Implementation Plans designed to improve the health of VA's benthic macroinvertebrate communities. VA will also continue to focus efforts on fish consumption designated use impairments through the development of Polychlorinated Biphenyls (PCBs) TMDLs for the tidal and non-tidal portions of the James River and the Bluestone River. Additionally, VA will include long-term planning for the development of PCB TMDLs for the York and Rappahannock River watersheds.
- **Harmful Algal Blooms:** In 2022, Virginia's General Assembly appropriated $3.5 million to DEQ to study harmful algal blooms (HABs) in Lake Anna and the Shenandoah River

basin. The Virginia Department of Health (VDH) is a study participant, as they are the agency responsible for issuing no-swimming advisories for Lake Anna and algal mat alerts for sections of the Shenandoah River basin. The studies funded by the General Assembly will focus on the environmental factors that cause these HABs and, where water quality impairments exist as a result of a no-swim advisory(ies), management approaches that could be employed to prevent and mitigate their impacts. Other waters that may be impacted by HABs will be considered for additional study as appropriate.

- **Temperature impairments:** Continuous monitoring studies will be utilized to collect additional data in many of VA's temperature impaired waters to support TMDL or ARP development, the implementation of Best Management Practices, or delisting.
- **Impairments in watersheds draining national forests:** Virginia has a number of pH and temperature impairments in streams that drain national forests in watersheds that do not contain permitted or other significant anthropogenic nonpoint sources. Virginia will collect additional in-stream and watershed data to determine if a natural condition or other approach is appropriate for these waters.
- **Dissolved oxygen and pH conditions in swamp waters:** DEQ will utilize monitoring studies to improve baseline characterization of pH and dissolved oxygen conditions in Virginia's swamp waters, improve water quality management of these waters, and improve standards and assessment policies associated with these waters.
- **Mercury:** Virginia's mercury impaired waters include over 2,500 river miles, close to 56,300 lake acres, and 20 square estuarine miles. These impairments are likely due to atmospheric deposition. The Virginia Mercury Study (DEQ, 2008) drew the relationship between the deposition of mercury from the atmosphere and the effects of that contamination found in fish tissue. A significant portion (67%) of mercury atmospheric deposition originates from outside our state.

  A TMDL allocates load reductions necessary to attain of WQS. Since we do not have control over out-of-state sources, an alternative to developing a TMDL may be the better tactic. EPA provides an approach for listing waters impaired by mercury for which the predominant source is atmospheric deposition. EPA's intent is to provide this approach to states which have a mercury reduction program in place that will improve mercury impairments over time. Virginia has several programs, initiatives, and legislative actions, which will reduce the production and introduction of mercury to the environment. For example, the Virginia Green Program assists tourism-related organizations in promoting environmental responsibility through a number of initiatives including energy conservation and efficiency. The Virginia Clean Economy Act of 2020 establishes renewable portfolio standards and advances offshore wind and solar generation, among other initiatives. In addition, Virginia is collecting fish tissue samples to test for mercury to compare against similar data collected in 2008.

  Because Virginia is taking action to reduce the production and introduction of mercury, the alternative approach provided by EPA for listing waters impaired by mercury is the

recommended course of action. This action requires the development of a report outlining Virginia's mercury reduction programs and providing justification for using this approach to recategorize these waters from 5A to 5M. Subsequent requirements under this approach include an update of Virginia's efforts to be included in each Integrated Report. While this approach does not preclude Virginia from needing to develop a mercury TMDL with allocations at some point in the future, this approach will allow Virginia to work towards mercury reduction using alternative approaches.

- **Legacy toxic impairments (fish consumption impairments)**: There are approximately 40 fish consumption impairments across Virginia due to elevated chlorinated pesticides. Long-term planning includes the development of a monitoring strategy and study to determine sources and consider best cleanup strategies.
- **Bacteria reduction strategies:** Bacteria reduction efforts will continue through implementation plan development and implementation projects for existing bacteria TMDLs; and through the nesting of new bacteria impairments into existing TMDLs. Additionally, many best management practices implemented for the Chesapeake Bay or local TMDLs will also aid in the reduction of bacteria.

In addition to the above water quality impairment categories, the concept of implementability will continue to be a significant factor when prioritizing waters for the development of restoration projects. Implementability is the concept of prioritizing restoration projects that allow for and promote successful watershed plan implementation via installation of "on the ground" projects or practices. Implementability necessarily includes collaboration with DEQ's Nonpoint Source program, other state agencies, and with stakeholders to identify local interests and funding opportunities as a key component in prioritizing impaired waters for TMDL or other restoration plan development followed by implementation planning and installation. VA's aim is to prioritize impaired waters for TMDL or ARP development where a non-PCB TMDL and Implementation Plan can be developed consecutively and with stakeholder support for implementation. This is a current guiding principle which will continue to be incorporated in the identification of the iterative shorter-term (two-year) priorities that will be presented in Integrated Reports through 2032.

Additionally, TMDL revisions may be considered for prioritization under this Prioritization Framework. Occasionally due to continued water quality issues, large scale changes to land uses, significant point source changes, or additional monitoring data, it becomes necessary to revise a TMDL. Such revisions cannot always be foreseen and planned for in advance therefore, inherent to the TMDL program's planning process is the inclusion of time and resources to manage those as necessary. When necessary, it is Virginia's intention to include TMDL revisions as a part of the two-year priorities presented in Integrated Reports through 2032.

Data and Analysis

Since 1999, DEQ has encouraged citizen water quality monitoring organizations by providing technical and, whenever possible, financial support for monitoring activities. Virginia state law (§ 62.1-44.19:11.) established the Citizen Water Quality Monitoring Program in 2002 and DEQ

has incorporated ‘non-agency’ data into its assessment determinations since the 2004 305(b)/303(d) reporting cycle. Over the last 20 years the program has grown exponentially. DEQ currently has contacts with over 200 citizen and other monitoring organizations. During the 2022 IR cycle, 80 organizations submitted data from 1,655 monitoring locations to be used for assessment determinations.

Virginia’s process for accepting and evaluating citizen or non-agency data is also based on state law (§ 62.1-44.19:11.) The DEQ Citizen Monitoring Methods Manual is updated periodically to ensure all information is accurate and current and describes the process for ‘tiering’ citizen and non-agency data for use in water quality assessments. Depending on the level of documented QA/QC, each data point submitted to DEQ is assigned a tier. The tiers range from Level III: use for 303(d) listing/delisting of impaired waters to Level I: informational or educational purposes only. The DEQ Water Quality Assessment Guidance Manual also includes information on how citizen and non-agency data are used in assessment determinations and is released for public comment before finalized.

Ensuring all readily and available data are used for making assessment determinations is a focus for the DEQ Water Quality Assessment Program. Establishing a data solicitation deadline for all non-agency data producers and providing the Virginia Data Explorer for uploading these data has resulted in data that are uniformly submitted on a timeline used to meet overall reporting deadlines. Developed in partnership with the Chesapeake Bay Monitoring Cooperative and Virginia Institute of Marine Science, the database associated with the Virginia Data Explorer serves as a repository for citizen monitoring data collected throughout Virginia. It not only provides data to DEQ in a consistent manner, but it also allows for the public to view the data in a simplified format.

DEQ continues to reach out to recognized tribes (and other Tribes to the extent possible) to announce public comment opportunities through the monitoring and assessment programs, including Citizen Monitoring Nominations to the Annual Monitoring Plan and the Draft Integrated Report.

As a part of planning for restoration projects, DEQ will continue to collect biological, physical, and chemical data from monitoring stations within the restoration project area watersheds. The analysis of this data is important in the determination of causes and/or sources of pollutants causing the impairments of the project waters and in the development of TMDLs and ARPs. Monitoring will continue in the watersheds after implementation of the restoration project to track water quality improvement progress.

Virginia prioritizes the development of tools designed to increase the efficiency and effectiveness of our 303(d) programs. For example, since the 2016 IR cycle, Virginia has been developing tools to make internal assessment processes more efficient by assisting DEQ staff with organizing and analyzing data in a consistent manner. The suite of tools includes a way to attribute water quality standards information to monitoring locations to ensure accurate assessments, automated assessment scripts that align with state assessment methodologies,

and data visualization tools for rivers and lakes to make wholistic assessment determinations faster. Additionally, Virginia is currently working with EPA to develop a tool that will automate some of the labor-intensive aspects of developing watershed characterizations for restoration project areas. Further tool development will be pursued using internal resources premised on improved efficiency in 303(d) programs.

Partnerships

Communication and coordination with other programs, government agencies, and stakeholders creates greater opportunities for efficiency and effectiveness in the development of restoration plans and the implementation of practices to improve water quality. Each of VA's 303(d) programs is committed to continuing to dedicate resources to stakeholder engagement including the agricultural, permitted, and residential sectors as well as permitted sources and other government and non-government agencies. DEQ also intends to partner with other agencies for alignment of priorities, resources, and expertise. For example, DEQ is conducting a study of harmful algal blooms in Lake Anna and the Shenandoah Basin to understand the physical and water quality drivers of HABs and, where water quality impairments exist, identify management approaches to prevent or mitigate HABs where appropriate and as resources allow. Those efforts include collaborations with the USGS, VDH, ODU, George Mason University, The Virginia Commonwealth University, and the Interstate Commission for the Potomac River Basin and will include extensive stakeholder engagement.

DEQ's 303(d) programs will also continue to coordinate with non-303(d) programs. For example, the TMDL program engages the Virginia Pollution Discharge Elimination System (VPDES) program in the development of wasteload allocations during TMDL development or TMDL revision processes. It also engages with DEQ's Nonpoint Source program during the prioritization of watersheds for restoration and the development of TMDLs and ARPs to ensure they are implementable and that stakeholders are engaged in the process. To the extent practicable, TMDLs will be developed in alignment with Nonpoint Source Program resources to promote consecutive or near-term TMDL Implementation Plan development and implementation and eligibility for 319(h) funds. ARPs will be developed using the Nonpoint Source 9-element approach to ensure eligibility for 319(h) funds.

6.2.3 Framework Focus Areas

EPA's Vision calls for the inclusion of cross-cutting focus areas important to the successful implementation of CWA Section 303(d) programs. DEQ's intentions for adapting these focus areas to support water quality improvement is described below.

Environmental Justice Communities: Virginia enacted the Virginia Environmental Justice Act in 2020 which directs Virginia "… to promote environmental justice and ensure that it is carried out throughout the Commonwealth, with a focus on environmental justice and fenceline communities." In this law, environmental justice communities are defined as low-income communities, communities of color (defined as "a population of individuals who identify as belonging to one or more of the following groups: Black, African American, Asian, Pacific

Islander, Native American, other non-white race, mixed race, Hispanic, Latino, or linguistically isolated"), and individual populations of color.

DEQ's 303(d) programs are collaborating with DEQ's Office of Environmental Justice to develop a strategy to grow 303(d) program engagement with Environmental Justice (EJ) communities in an effective and meaningful manner to improve water quality most effectively and proportionately in Virginia. For example, DEQ plans to build upon and expand its use of spatial analytical tools designed to improve outreach to EJ communities and to increase agency understanding of local environmental issues or concerns within EJ communities. In addition to the tool developed by DEQ (Virginia EJScreen+), DEQ will review the incorporation of additional EJ screening tools developed by EPA, other federal and state agencies, and universities that have expertise in EJ communities. DEQ will proactively engage with other governmental and non-governmental entities to help characterize environmental issues and concerns within EJ communities and understand how to best respond to meet the needs and interests of these communities.

Resources will be allocated to find opportunities through enhanced relationships to pass on federal grant funds to EJ communities for water quality improvement programs and to utilize federal 604(b) funds to improve DEQ's EJ GIS layers.

The development of PCB TMDLs on the James River, Bluestone River, Rappahannock River, and York River may affect residents that subsistence fish or otherwise supplement fish in their diet.

In conjunction with EPA's tribal coordinator, DEQ provides technical assistance as requested for Federally-recognized tribes (and other Tribes to the extent possible) developing water quality monitoring and assessment programs in Virginia. DEQ continues to reach out to Tribal leaders to announce public comment opportunities through the monitoring and assessment programs, including Citizen Monitoring Nominations to the Annual Monitoring Plan, the Draft Integrated Report, and public meetings for TMDL and ARP development and will develop a strategy to strengthen and expand such outreach efforts with tribal leaders as well as other environmental justice communities.

Climate Change/Resilience: DEQ is developing a consistent agency approach in the form of guidance, as many programs are interconnected. The approach will consider strategies to account for the impacts of climate change and addressing climate resiliency in the development of TMDLs and other restoration plans to attain and maintain water quality standards.

Program Capacity Building: Staff development and retention is vital to 303(d) program effectiveness, so DEQ prioritizes the dedication of resources to education and training of staff to continually improve staff technical skills and to foster a greater understanding across programs to enable greater collaboration. DEQ's TMDL and Nonpoint Source programs also intend to create greater in-house capacity for tasks that may otherwise need to be contracted. A decreased reliance on contractual support may provide flexibility for additional funding for other water quality improvement needs.