FY2020 - FY2023

Water and Science Administration Strategic Plan

Maryland Department of the Environment

FY2020 - FY2023

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MDE Strategic Plan – Mission, Vision and Values

The following provides detail on the Department's Strategic Plan, including the mission, vision and values.

Mission
To protect and restore the environment for the health and wellbeing of all Marylanders.

Vision
Healthy, vibrant and sustainable communities and ecosystems in Maryland.

Values

1. **Service**. Providing value to citizens, customers, colleagues, and communities by being responsive, inclusive, respectful, resourceful and transparent in how we operate programs and invest the public's money.

2. **Science and Technology**. Using science-driven regulation and policy to protect the environment more effectively and information technology to serve customers more efficiently.

3. **Innovation**. Embracing creativity to achieve better results, while encouraging the use of market-based and partnership-driven tools and strategies for improvements in environmental technologies, regulation, and finance.

4. **Integration**. Integration of air, water, land, and science programs for more effective and efficient results, and better use of ecosystem-based permitting to increase efficiency, offer better consistency and improve environmental protection.

5. **Partnership**. Increasing outreach and openness to broaden the range of public and private sector participants and strategies that foster better solutions through broader stakeholder involvement in environmental challenges.

6. **Performance**. Focusing on results and tracking outcomes to accelerate progress in how to manage for cleaner air, water, and land and to reduce risks from pollution, climate change, environmental emergencies, and other threats.

7. **Employees**. Cultivating and fostering a talented and diverse workforce and providing opportunities for development of professionalism, innovation, productivity, teamwork and leadership.

Water and Science Administration Overview

The Water and Science Administration (WSA) provides science-based safeguards for life's most essential resource. We do this through the Federal Clean Water Act, the Federal Safe Drinking Water Act, several other federal programs, and State law and regulation. Our mission is to protect and restore Maryland's precious water resources for the health and benefit of all Marylanders. Maryland's water resources are vast, including approximately 19,000 miles of streams and rivers, and 2,500 square miles of estuaries covering 20% of the State. The Chesapeake Bay is the largest estuary in the United States and the most productive estuary in the world. Over three quarters of a million acres of wetlands within our State provide water quality benefits, flood protection, erosion control and vital habitats. There are 474 community water systems in Maryland serving about 5.7 million people with safe drinking water.

Water is a finite resource flowing through both the natural hydrologic cycle and patterns of human consumption and use. The same drop of water that comes out of the ground or from our surface waters, which is then treated and conveyed to our taps for drinking, is then treated again as sewage and discharged where it reenters the natural hydrologic cycle. How we manage that drop of water on the landscape impacts: recharge of our drinking water aquifers; stormwater runoff patterns and flooding; surface water availability; and overall water quality for a spectrum of uses. Understanding these OneWater connections, and that water quantity and quality management are interdependent, is critical for effective management of our water resources.

WSA is responsible for managing Maryland's water resources. WSA has approximately 300 engineers, scientists, and natural resource professionals responsible for implementing and enforcing federal Clean and Safe Drinking Water Acts, as well as regulatory water programs established under State law. These programs ensure sustainable water quantity and quality to support human health and well-being, aquatic resources, and agricultural and industrial uses. WSA accomplishes this by: setting science-based standards; issuing legally enforceable permits and approvals; monitoring water bodies and water and wastewater systems; performing inspection and compliance activities; and responding to water pollution events and emergencies.

Figure 1 on the following page illustrates key WSA functions across programs as well as where they fall along the water quality and quantity spectrum. Some WSA activities are more on the water quality or quantity management side of the spectrum, but several key programs such as our drinking water supply program must simultaneously manage both quantity and quality in order to protect public health, aquatic resources, and ensure sustainability across a range of water uses. Other core activities, such as setting standards, monitoring, compliance assistance and enforcement cross all programs, and are critical for effective water resources management.

OneWater

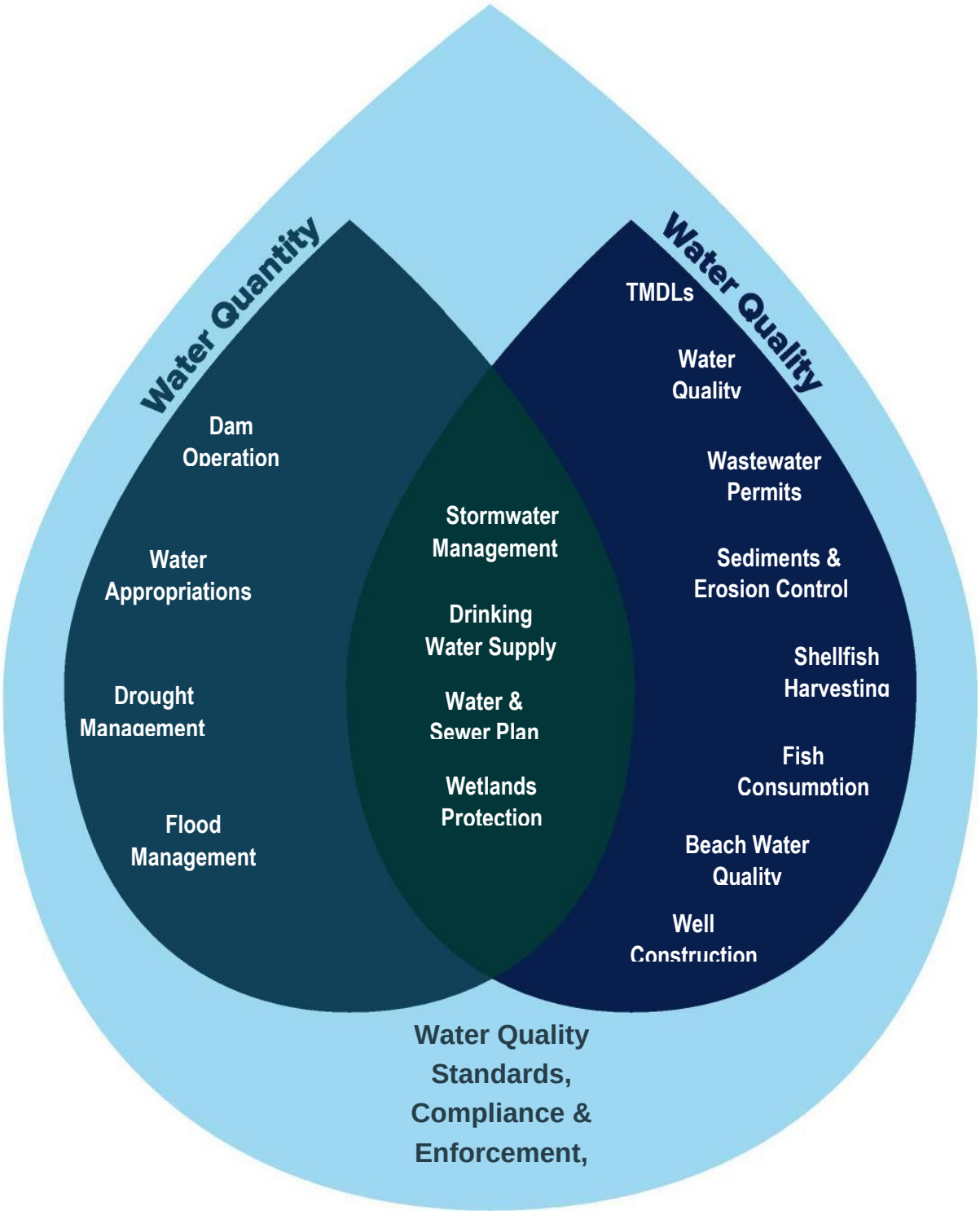

Figure 1: Water and Science OneWater Approach

Integration and Strategic Plan Development

In July 2017 the Department integrated the Science Services Administration, which housed many of the Clean Water Act planning programs, and the Water Management Administration that oversaw Clean Water Act permitting and compliance Programs as well as the Safe Drinking Water Act Program, water appropriations, dam safety and floodplain management. This integration into the Water and Science Administration resulted in the creation of one new program - the Integrated Water Planning Program. The merger consolidated Chesapeake Bay restoration activities and refocused the programs on an integrated planning, policy and permit approach. The combination of the water-focused scientific and regulatory programs has deepened synergies and increased efficiencies for better science, common-sense regulation and innovative approaches to a variety of water quality and quantity management challenges.

Water and Science developed this strategic plan to: focus WSA on its core goals; recognize the strengths, weaknesses, opportunities and threats toward achieving these core goals; and as a tool that managers will use to guide WSA's path forward. The plan was developed using feedback from programs, external stakeholders and the Office of the Secretary. The Plan identifies five major goals supported by strategic objectives that highlight the key priorities over the next four years and the areas that will need the most attention or experience the most significant change. Each WSA program has annual work plans to implement the Strategic Plan and its goals.

Strategic Goals

The strategic goals in which WSA will work toward over the next four years are:

- OneWater – Manage water in a science based, holistic and sustainable approach to maximize public health and ecosystem benefits.
- Customer Service – Advance a culture of customer service and continuously improve service to our stakeholders
- Climate Resiliency – Adapt programs and decision making to factor in changing conditions and preparedness
- Employee retention and succession – Foster an environment of employee development and actively prepare for succession.
- Partnerships - The establishment and maintenance of partnerships is critical to expanding the influence of the WSA, leveraging resources and developing innovative solutions to environmental challenges

I. OneWater

Manage water in a science based, holistic and sustainable approach.

One Water is WSA's approach for the effective and coordinated management of water across various environmental programs, recognizing the synergies and opportunities of collaboration while providing real and measurable environmental results. WSA's overarching goals are to protect public health, protect and restore water quality while recognizing the importance of sustainable clean water for people, food and energy.

Chesapeake Bay Restoration

The restoration of the nation's largest estuary, the Chesapeake Bay, is a prime example of a coordinated and comprehensive approach in which many public, private and non-governmental entities play a role. Restoration of the Bay began in the 1980s. In 2010, the federal Environmental Protection Agency established a TMDL for the Bay. The Bay TMDL was designed to ensure that all pollution control measures needed to fully restore the Bay and its tidal tributaries are in place by 2025.

Efforts to restore the water quality and living resources of the Chesapeake Bay, and the important rivers and streams that drain to the Bay, have adapted, changed and matured over time. Current efforts take place under the authority of a Federal Clean Water Act 2010 Chesapeake Bay TMDL and a comprehensive 2014 Chesapeake Bay Watershed Agreement signed by six governors, one mayor, the US EPA and the Chesapeake Bay Commission. Today, WSA's programs, policies, permitting and monitoring functions show an increasingly integrated approach to the restoration of the Bay ecosystem. This entails programs, policies and permit functions that address point source and non-point source pollution control, wetlands and waterway restoration, erosion and sediment control at construction sites, protection of Bay grasses and coldwater streams, and nutrient trading, to mention a few areas.

Highlights of key activities over the next four years include:

- Complete a draft Phase III Watershed Implementation Plan by April 2019 and finalize the plan by August 2019 that includes source sector strategies to meet and maintain the 2025 targets, protects beneficial lands, maximize co-benefits and factors in climate adaptation.

- Align wastewater and stormwater permits that regulate discharges to the State's surface waters with the Chesapeake Bay TMDL and water quality standards protection and restoration requirements, including modification of certain permits to allow nutrient trading.

- Annually analyze, evaluate and report progress in the restoration of the Chesapeake Bay ecosystem including Bay pollution reduction, 2-year milestone progress, water quality standards attainment and identify strategic revisions needed to reach and maintain the 2025 goal.

- Advance environmental market based approaches such as nutrient trading and mitigation banking. This includes: advancing water quality trading in Maryland by certifying and registering credits and trades in accordance with Maryland water quality trading regulations and increasing private sector investment opportunities for innovative practices such as aquaculture while implementing a competitive and fair market for mitigation banking.

- Implement a Conowingo strategy that includes 1) Engaging the Bay Partnership in the development and completion of a Conowingo Watershed Implementation Plan, 2) reaching resolution on the Conowingo Dam Clean Water Act Section 401 Water Quality Certification and 3) completing a sediment characterization and beneficial reuse project.

- Continue to make improvements in restoration permitting through adaptive management approaches combined with science based decision making that considers net ecological uplift.

- Revise water quality standards to better identify and protect coldwater streams, reflect recent changes from the Chesapeake Bay Midpoint Assessment and to provide protection from toxicity to aquatic life.

- Find opportunities to include innovative technologies and approaches, which may lower the costs of pollution control and maximize co-benefits to the environment, into state and federal permits.

- Work with local governments, homeowners, wastewater treatment designers and vendors to optimize the efficiency and costs to install on-site sewage disposal systems that reduce the discharge of nitrogen to the groundwater within the Chesapeake Bay Critical Area and other environmentally sensitive areas.

- Actively engage federal legislation and regulation changes such as ensuring State 401 Water Quality Certification Authority, 404 Assumption and Waters of the United States definition.

- Institute cross program and multi discipline teams to enhance problem solving in areas such as climate resiliency, nutrient trading, NPDES permitting, compliance and water reuse.

<u>Protecting Public Health</u>

WSA has responsibility for the safety and health of our drinking water; the fish and shellfish we harvest, market and consume; and the lakes, rivers, streams and estuaries in and on which we work and play. Some examples of WSA's responsibilities and planned activities include:

- Work closely with the Maryland State Department of Education, and public and private schools in the State to determine the presence and extent of lead in drinking water in schools. Where lead is determined to be present, WSA will work with the schools and the Department of Education to implement plans to eliminate potential points of potential exposure.

- Assist local governments and school systems in acquiring funds to support capital costs to remediate lead pipes and fixtures (e.g. America's Water Infrastructure Act).

- Conduct a study, in coordination with Land and Materials Administration, to characterize the presence and extent of perfluorinated ("PFAS, PFOA, GEN X" and similar) chemicals in groundwater and surface waters, now considered to be of concern regarding human health. These compounds may be found where the chemicals are/were manufactured, around airports, and other facilities where the compounds were used to fight fires or perform training for such activities.

- Work closely with the Maryland Department of Health, EPA, local health departments, health care facilities, water system manufacturers, other States and national experts to ensure the safety and efficacy of water treatment systems designed to control the incidence of illness and death from legionella and other disease-causing organisms.

- Assist and regulate all community water supply systems to prevent waterborne disease outbreaks and ensure that drinking water meets federal safety standards, such as for lead and copper, bacteria and other contaminants of concern.

- Work across water programs to find opportunities to link source water protection and Clean Water Act activities.

- Monitor and manage shellfish harvest areas, including an expanding aquaculture industry, to ensure that these products are safe to eat and to sell for consumption both within and outside of Maryland.

- Ensure the safety of public bathing beaches by providing technical support, communication materials and resources to local governments

- Expand resources and training for responding to Harmful Algal Blooms and contaminants of emerging concern that affect drinking water, shellfish consumption and water contact recreation.

II. Customer Service

Advance a culture of customer service and continuously improve service to our stakeholders

WSA recognizes its important role in providing permits and approvals that allow businesses, government agencies and property owners to engage in commerce. Other stakeholders, including non-governmental organizations, citizens and media are also our customers and are entitled to open and transparent government. Providing training and guidance to the regulated community is a core function of WSA. Providing access to public information is also critical to having an informed public. In keeping with Governor Hogan's Executive Order 01.01.2015.26 – Governor's Office of Performance Improvement, WSA is engaged in efforts to increase efficiencies, reduce backlogs, optimize workflow and improve employee morale and productivity through the following:

- Continue “lean” efforts, especially in the area of compliance assistance and enforcement to identify ways to eliminate delays, streamline processes, and render decisions that are consistent, fair and defensible.

- Initiate “lean” efforts across programs that issue restoration permits, such as wetlands and waterways and dam safety, to improve internal coordination, time to issuance, as well as external communication.

- Continue to develop online permit application and payment processes, with a near term focus on the wetlands and waterway permit process.

- Provide technical assistance and training to permit applicants and holders to prevent potential violations of federal and State requirements.

- Simplify approval processes through the expanded use of general permits for minimal or temporary wetlands and waterways impacts, and commercial activities where the implementation of best practices and self-reporting can ensure environmental protection.

- Work with EPA to fulfill the requirements of e-reporting for facilities governed by the Clean Water Act.

- With the Water Quality Financing Administration within MDE, engage in outreach and education on MDE funding available for the uses of the Bay Restoration Fund and other financial assistance programs for safe drinking water, reduction of groundwater and surface water pollution at wastewater treatment plants, sewer lines, pumping stations, on-site sewage disposal systems and municipal stormwater systems.

- Pursue new technologies for use in inspection and compliance, such as data systems, remote monitors and artificial intelligence.

- Continue and improve technical assistance delivery, through training and outreach, to all local implementers to support Chesapeake Bay and local water quality restoration activities.

III. Climate Resiliency

Adapt programs and decision making to factor in changing conditions and preparedness

WSA’s Climate Adaptation Strategy includes proactive steps to decrease climate change impacts on water related systems. Predictions indicate wetter wet periods, with more intense rainfall events, as well as longer and dryer dry period and increasing temperatures and sea level. These changes can increase in water pollution to rivers and estuaries, flooding and risk to life and property, stresses on drinking water availability and supply systems, the likelihood of harmful algal blooms, coastal flooding, and saltwater intrusion, to name a few.

As with the WSA's other focus areas, addressing climate resiliency and recognize the states vulnerabilities is a cross-cutting effort that protects Maryland's citizens and water infrastructure. Over the period of this plan, efforts will focus on the following areas.

- Serve on the Maryland Climate Change Commission's Adaptation and Resiliency Workgroup to help develop and implement their annual work plans, and ensure interagency coordination on climate resiliency efforts as well as serve on the Coast Smart Council.

- Identify vulnerabilities and minimize risks to life and property through dam safety inspections, emergency action plans and dam safety permit conditions as well as Floodplain Management coordination.

- Advance Adaptation in Chesapeake Bay Watershed Restoration by establishing and setting design and restoration standards that factor in climate change

- Ensure Sustainable Drinking Water Supplies through permitting safeguards, water conservation opportunities, water reuse and resource monitoring.

- Increase coastal and riverine resilience by protecting and restoring tidal and nontidal Wetlands, issuing restoration permits that consider climate resiliency and increasing the miles of living shorelines

- Integrate priority climate resiliency considerations into emergency preparedness, program planning, operations, permits, approvals and funding

IV. Employee Retention and Succession

Foster an environment of employee development and actively prepare for succession

WSA will perform the following:

- Evaluate the demographics of our workforce to better plan for the coming changes as seasoned employees retire and newer employees with changing personal and professional needs and goals enter the workforce.

- Seek the input of employees regarding priorities and opportunities for greater job satisfaction, given the context of limited financial resources.

- Provide more opportunities for collaborative and cross-program projects to foster collegiality, creativity and integrated resources management.

- Establish sustainable internship programs with multiple Maryland colleges and universities to provide a "pipeline" of potential future employees.

- Find fun and affordable ways to boost employee morale.

V. Partnerships

The establishment and maintenance of partnerships is critical to expanding the influence of WSA, leveraging resources and developing innovative solutions to environmental challenges

Some examples of activity in this area are:

- Maintain relationships with and involvement in watershed partnerships, such as the Chesapeake Bay, Patuxent River Commission, Coastal Bays, Deep Creek Lake, Anacostia River and Riverkeepers.

- Establish partnerships with Maryland colleges and universities to increase the agency's ability to tackle emerging issues with access to engineers, scientists and policy analysts within these centers of higher learning.

- Explore opportunities for public-private partnerships in the area of environmental markets such as nutrient trading and wetland mitigation banking.

- Maintain active participation in the Susquehanna River Basin Commission and the Interstate Commission on the Potomac River Basin, to ensure the Department's voice is heard on matters relating to protecting these sources of potable water for the most populous areas of the State, and protecting the water quality in the State's streams, rivers and the Chesapeake Bay.

- Continue active participation on the Chesapeake Bay Trust Board, a non-profit grant making organization created by the Maryland State Legislature, which also plays a significant role as a thought leader and convener on emerging water quality topics.

- Maintain memberships in national organizations, as resources permit, that foster the goals of WSA; examples are the Association of Safe Drinking water Administrators, Association of Clean Water Administrators, Environmental Council of Governments, the Association of State Dam Safety Officials, and Association of State Wetland Managers.

- Foster workforce development for water and wastewater systems operators and green infrastructure maintenance with educational institutions, local government and the private sector.