

## Chapter 2 Virginia's Collaborative Water Management Framework

The Commonwealth of Virginia executes a variety of laws and regulations pertaining to water quality and supply. Meeting Virginia's environmental challenges is a cooperative effort that involves communities, businesses, educators, government agencies, and many more. This Chapter contains descriptions of programs implemented by state and federal agencies that impact some facet of water resources management and water supply planning. The DEQ programs do not address riparian rights, but seek to balance reasonable use by defined beneficial uses.

### Natural Resources Policy

Article XI, Section 1<sup>15</sup>: Natural Resources and Historical Sites of the Commonwealth of the Virginia Constitution states the following:

“To the end that the people have clean air, pure water, and the use and enjoyment for recreation of adequate public lands, waters, and other natural resources, it shall be the policy of the Commonwealth to conserve, develop, and utilize its natural resources, its public lands, and its historical sites and buildings.

Further, it shall be the Commonwealth's policy to protect its atmosphere, lands, and waters from pollution, impairment, or destruction, for the benefit, enjoyment, and general welfare of the people of the Commonwealth.”

### State Water Resources Policy

On May 7, 1974 the State Water Control Board (SWCB) adopted a Water Resources Policy.<sup>16</sup> The creation of this policy supports the SWCB in fulfilling its statutory responsibilities under § 62.1-44.36 of the Code of Virginia. The policy begins with precepts or agreed upon statements which acknowledge the need to balance natural resource protection and economic growth. The document includes a number of policies that the SWCB observes when preparing Water Resource Management Plans, when advising on the adequacy and desirability of water resource projects, and in authorizing specific water resource projects or in commenting on projects which affect water resources. The policies are, generally, to:

- acknowledge and protect natural water sources,

---

<sup>15</sup> <http://constitution.legis.virginia.gov/constitution.htm#11S1>

<sup>16</sup> § 9VAC25-390 et seq

- understand and protect all beneficial uses and to ensure the public benefits from water resources projects,
- uphold long-term protection of the environment as a guiding criterion in decisions relating to water and related land resources,
- minimize pollution and the wasteful use of water,
- support water supply planning and encourage storage,
- promote awareness of flood plains and flood control,
- understand the financial factors associated with water resource projects, and
- preserve wetland ecosystems.

## State Regulatory Controls Regarding Water Use

Water quantity and quality management occurs in a number of programs within DEQ. These programs are designed to improve and protect Virginia's streams, rivers, bays, wetlands, and groundwater for aquatic life, human health and other beneficial water uses. A brief description of each program follows.

### Local and Regional Water Supply Planning

The WSP Regulation is discussed in Chapter 1 Virginia's Water Resources Planning Process. As mentioned, the WSP Regulation requires the DEQ to review the programs for compliance with the regulation. Local and regional water supply programs are also reviewed by the Virginia Department of Health (VDH), the Department of Conservation and Recreation (DCR), the Department of Historic Resources (DHR), the Virginia Marine Resources Commission (VMRC), and the Department of Game and Inland Fisheries (DGIF). The state agency review of the first water supply plans submittal was an integral part of the determination of compliance as noted in 9VAC25-780-140 and 150.

### Virginia Water Withdrawal Reporting Regulation

The Virginia Water Withdrawal Reporting (VWWR) Regulation<sup>17</sup> requires reporting for any withdrawal whose daily average withdrawal exceeds 10,000 gallons per day, with the exception of crop irrigation. Reporting of crop irrigation applies to withdrawals exceeding one million gallons in any single month. Withdrawal reports for the previous calendar year are due on January 31. If a withdrawal meets the reporting threshold, reporting under the VWWR Regulation is required regardless of whether or not a withdrawal permit is held and regardless of whether or not the withdrawal is within a groundwater management area. Reporting is a statewide requirement.

---

<sup>17</sup> §9VAC25-200-10 et seq

The analysis of withdrawal information reported under this regulation contributes to a better understanding of pressure on the resource. Knowledge of how much water is withdrawn, for what purpose, and from what source (surface water, groundwater, or water transferred among users) allows the DEQ to consider these withdrawals in permitting decisions. Additionally, it provides the Commonwealth with a more accurate understanding of the full water budget in watersheds. Water withdrawal data is stored in the Virginia Water Use Database System (VWUDS). Data collected pursuant to the VVWR Regulation is summarized in the Annual Report on the Status of Virginia's Water Resources.<sup>18</sup>

In the VWUDS, withdrawal points are established by facility and by category of use. The categories of withdrawal are agriculture (including but not limited to livestock watering), commercial (includes golf course irrigation), power production (including nuclear, fossil, and hydro), irrigation (including but not limited to agricultural crop, sod, and nursery production), manufacturing, mining, public water supply, and other. Total monthly values and the maximum daily withdrawal for the year are reported. Monthly withdrawals are self-reported in hardcopy format or online. Approximately 80% of reporting is performed online.

### Virginia Water Protection Permit Program

The DEQ's VWP Permit Program<sup>19</sup> regulates permanent and temporary impacts to surface waters to protect water quality and manages instream flows to balance on-stream and off-stream beneficial uses. Activities in surface waters that are regulated under the VWP Program include surface water withdrawals, non-agricultural impoundments, impacts to surface waters such as land clearing, dredging, filling, excavating, draining, flooding, or ditching in open water, streams, and wetlands. The VWP Program also serves as Virginia's Section 401 certification program for federal Section 404 permits issued under the authority of the Federal Clean Water Act<sup>20</sup> (CWA).

Surface waters are defined as all surface waters which are not groundwaters, which wholly or partially are within the Commonwealth or bordering the Commonwealth. Wetlands, stream channels, lakes, springs, and ponds are all surface waters and fall under the VWP Program's jurisdiction. A surface water withdrawal means a removal or diversion of surface water from a stream, spring, lake, or pond in Virginia or from the Potomac River. All surface water withdrawals, unless excluded,<sup>21</sup> require a VWP.

According to the 2014 Report on Virginia's Water Resources Management Activities, 82% of the total surface water withdrawn in 2013 was excluded from permitting, or 'grandfathered.' These grandfathered

---

<sup>18</sup> <http://www.deq.virginia.gov/Portals/0/DEQ/Water/WaterSupplyPlanning/WRreportfinal2013.pdf>

<sup>19</sup> Code of Virginia §62.1-44.15:20

<sup>20</sup> 33 U.S.C. §1251 et seq. (1972)

<sup>21</sup> §9 VAC 25-210-60.B

withdrawals are able to withdraw at an unspecified volume regardless of the flow in the stream, which could negatively affect other beneficial uses and cumulatively result in an unsustainable condition in the long term. DEQ has limited operational information on unpermitted withdrawals, information that would otherwise be obtained through the permitting process and used to assist in the management of the water resource and avoid impacts during low flow periods. Also, unpermitted withdrawals are not subject to periodic review as is the case for permitted withdrawals, which are associated with the 15-year permit term. The ability to regulate a larger percentage of unpermitted withdrawals could enable the Commonwealth to improve management of its water resources, especially in times of drought, to protect the beneficial uses of those resources, including downstream use. Unlike permitted withdrawals, excluded withdrawals are not subject to permit conditions that require conservation during times of low flow to reduce water use or place limits on the withdrawal that require a certain volume of water to flow by the intake or to be released from a reservoir. These conditions help to ensure the existing beneficial uses of the water resource, including those of the withdrawal, are sustained at all times and, particularly, during dry periods, as well as conserving the resource for the long term. This is further discussed in Chapter 5, Assessing the Long Term Sustainability of Water Resources, and Chapter 6, Water Supply Challenges and Recommendations.

Wetlands are transitional areas on the landscape between dry land and open water or streams, and often exhibit characteristics of both terrestrial and aquatic habitats. State Water Control Law<sup>22</sup> and VWP Program regulations<sup>23</sup> define “wetlands” as “those areas that are inundated or saturated by surface [water] or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” The definition of “wetlands” in State law mirrors the definition in the CWA.

The VWP Regulation requires the evaluation of cumulative impacts of the withdrawal on beneficial uses during the review of permit applications for surface water withdrawals. DEQ developed and maintains an operational hydrologic model covering all streams and impoundments in the Commonwealth for the purpose of performing cumulative impact analyses. Each new or renewing VWP for a surface water withdrawal is analyzed with the modeling system for its potential to impact downstream beneficial uses and for its susceptibility to impacts from other water users located upstream. DEQ uses the output of these models to arrive at a set of operational rules that minimize impacts on all beneficial uses. The review of applications is closely coordinated with the U.S. Army Corps of Engineers (USACE), VMRC, VDH, DGIF, and DCR.

---

<sup>22</sup>Code of Virginia §62.1-44.3

<sup>23</sup> §9VAC25-210-10

## Surface Water Management Area Act

In 1989, the General Assembly enacted the Surface Water Management Area (SWMA) Act<sup>24</sup> for the purpose of protecting in-stream uses from excessive surface water withdrawals and to enable water users to develop plans for allocation of available surface water resources during low flow conditions. The legislation authorizes the SWCB to establish surface water management areas when there is evidence that 1) A stream has substantial instream values as indicated by evidence of fishery, recreation, habitat, cultural or aesthetic properties; 2) Historic records or current conditions indicate that a low flow condition could occur which would threaten important instream uses; and 3) Current or potential offstream uses contribute to or are likely to exacerbate natural low flow conditions to the detriment of instream values. The legislation also encourages the SWCB to promote voluntary agreements among surface water users within the same designated SWMA. The SWCB would, after sufficient public notice, approve and be a party to any such voluntary agreement, and the agreement would act in lieu of a permit issued by the SWCB to withdraw surface water. To date, no surface water management areas have been designated by the SWCB within the Commonwealth.

## Ground Water Management Act

The Virginia General Assembly determined that the continued and unrestricted usage of groundwater is contributing and will continue to contribute to the degradation of groundwater quality and shortage of groundwater, thereby jeopardizing the public's welfare, safety and health. The Ground Water Management Act<sup>25</sup> of 1992 was adopted in order to conserve, protect, and beneficially utilize the groundwater of the Commonwealth and to ensure the public's welfare, safety, and health.

Groundwater is regulated under the Ground Water Management Act of 1992<sup>26</sup>. The Groundwater Withdrawal Regulations (GW Regulations)<sup>27</sup> regulates groundwater withdrawals in areas designated as Groundwater Management Areas (GWMA), which is defined by the regulation as "a geographically defined groundwater area in which the [State Water Control Board] has deemed the levels, supply or quality of groundwater to be adverse to public welfare, health and safety." Currently, there are two GWMA's in the Commonwealth (see Figure 2.1 below). On January 1, 2014 the Eastern Virginia Groundwater Management Area was expanded to include all areas east of Interstate 95. The Eastern Shore Groundwater Management Area covers Accomack and Northampton Counties. Permitting activities are processed in accordance with the GW Regulations. Any person or entity located within a declared GWMA must obtain a permit to withdraw 300,000 gallons or more in any one month for an

---

<sup>24</sup>Code of Virginia, Title 62.1, Chapter 24

<sup>25</sup>Code of Virginia, Title 62.1, Chapter 25

<sup>26</sup>Code of Virginia, Title 62.1, Chapter 25

<sup>27</sup> § 9VAC25-610-10 et seq.

individual well or well system. Localities that are part of the newly expanded GWMA will need to reference this change in their ten year water supply plan re-submittals.

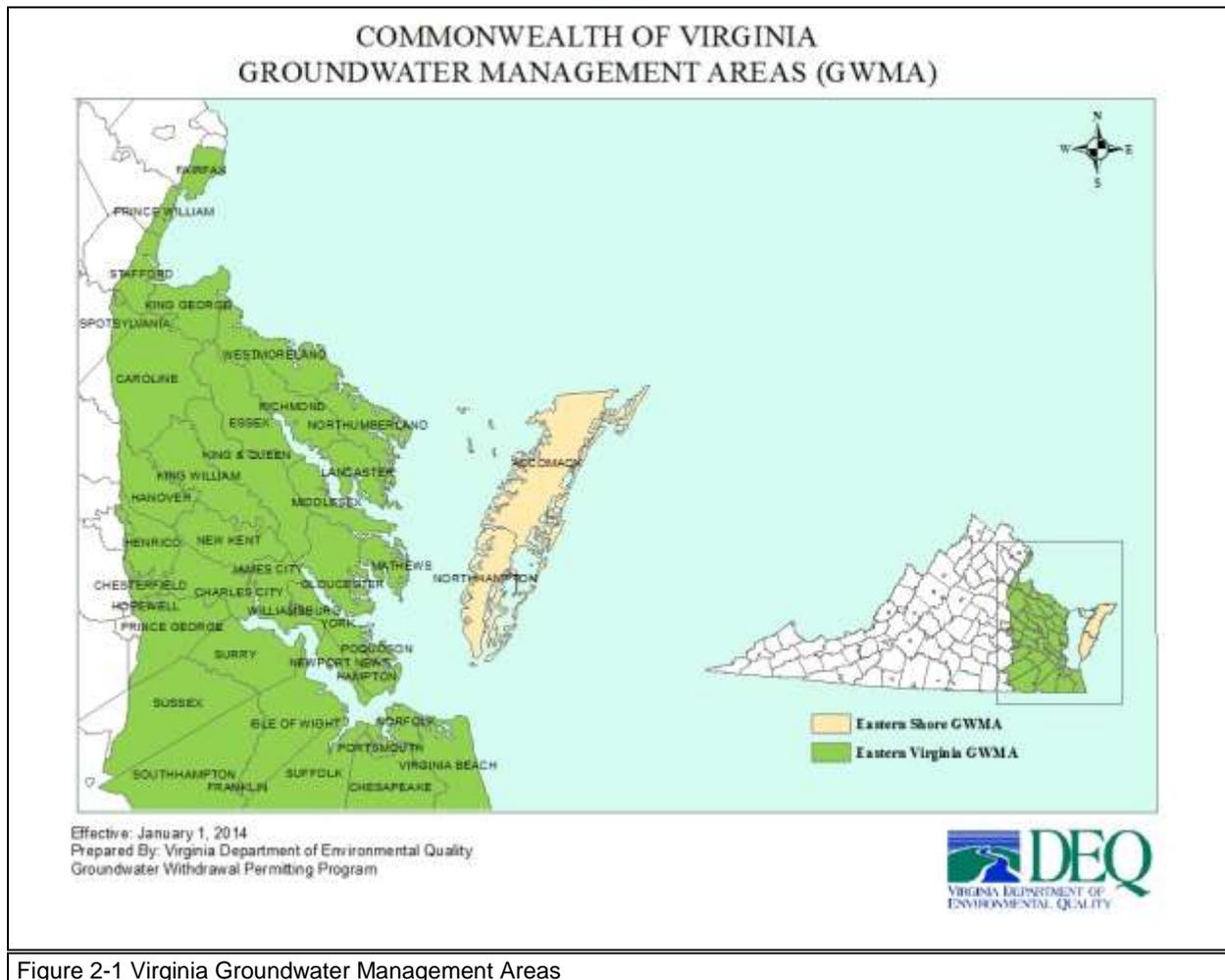


Figure 2-1 Virginia Groundwater Management Areas

## Water Reclamation and Reuse Regulation

The reclamation of either municipal or industrial wastewater and reuse of the reclaimed water is regulated in accordance with the Water Reclamation and Reuse Regulation.<sup>28</sup> Facilities that typically require a permit for water reclamation and reuse include reclamation systems, satellite reclamation systems, and reclaimed water distributions systems. End users of the reclaimed water are rarely required to obtain a permit.

A reclamation system associated with wastewater treatment works that has or will have a surface water discharge is covered under the Virginia Pollutant Discharge Elimination System<sup>29</sup> (VPDES) individual

<sup>28</sup> § 9VAC25-740

<sup>29</sup> <http://www.deq.virginia.gov/Programs/Water/PermittingCompliance/PollutionDischargeElimination.aspx>

permit issued to the wastewater treatment works. A reclamation system associated with wastewater treatment works that does not or will not have a surface water discharge is covered under the Virginia Pollution Abatement<sup>30</sup> (VPA) individual permit of the wastewater treatment works. Water reclamation systems independent of treatment works and reclaimed water distribution systems require a VPA individual permit.

Water reclamation and reuse can have a positive effect on water supply by reducing the amount of water needed to meet demand, as the reclaimed water is used to supplant other sources. On the other hand, water reuse can impact downstream users who previously benefited from the discharge of treated wastewater, as such discharges supplement surface water flow. When wastewater is reused, it is taken out of the water system and may affect beneficial uses downstream.

### Virginia Drought Monitoring Task Force

The Virginia Drought Monitoring Task Force (DMTF) is an interagency group of technical representatives from state and federal agencies responsible for monitoring natural resource conditions and the effects of drought on various segments of society. The DMTF, which is coordinated by the DEQ, meets on a regular basis to assess hydrologic conditions and make recommendations to the Virginia Drought Coordinator regarding drought status as directed by the Virginia Drought Assessment and Response Plan.<sup>31</sup> State agencies with active representation on the DMTF include the DGIF, the Virginia Department of Agriculture and Consumer Services (VDACS), the Virginia Department of Emergency Management (VDEM), the Virginia Department of Forestry (VDOP), and VDH. Federal agencies include the National Weather Service (NWS), the USACE, the U. S. Department of Agriculture (USDA) and the U. S. Geological Survey (USGS). The DMTF periodically releases Drought Status Reports summarizing drought conditions in the Commonwealth. These Reports are posted to the DEQ's website.<sup>32</sup>

Drought monitoring is an important component of water resources management. Careful observation and analysis of groundwater levels and surface water flow is paramount to thoughtful and fair resource decisions. Planning for conservation during water shortages allows all users to share the responsibility.

### Virginia River Commissions

Virginia River Commissions are established in federal and state codes to provide guidance and make recommendations to local, state, and federal legislative and administrative bodies regarding the use, stewardship, and enhancement of a river basin's water and other natural resources. The commissions promote communication, coordination, and education and may undertake studies and prepare, publish,

---

<sup>30</sup> <http://www.deq.virginia.gov/Programs/Water/LandApplicationBeneficialReuse.aspx>

<sup>31</sup> <http://www.deq.virginia.gov/Portals/0/DEQ/Water/WaterResources/vadroughtresponseplan.pdf>

<sup>32</sup> <http://www.deq.virginia.gov/Programs/WaterSupply/WaterQuantity/Drought.aspx>

and disseminate reports related to water quantity, quality, and other natural resources of their basins. Virginia has five river basin commissions with legislative representation. They are the Interstate Commission on the Potomac River Basin (ICPRB), the Ohio River Valley Water Sanitation Commission (ORSANCO), the Rappahannock River Basin Commission (Rappahannock RBC), The Rivanna River Basin Commission (Rivanna RBC), and the Roanoke River Basin Bi-State Commission (RRBBC). These are further discussed below.

- ICPRB: The ICPRB<sup>33</sup> was created by an interstate compact to enhance, protect, and conserve the water and associated land resources of the Potomac River Basin through regional and interstate cooperation. The ICPRB is represented by appointed Commissioners from the States of Maryland, Pennsylvania, Virginia, West Virginia, the District of Columbia, and the federal government.
- ORSANCO: The Ohio River Valley Water Sanitation Commission (ORSANCO<sup>34</sup>) was established on June 30, 1948 to control and abate pollution in the Ohio River Basin. ORSANCO is an interstate commission representing eight states and the federal government. Member states include: Illinois, Indiana, Kentucky, New York, Ohio, Pennsylvania, Virginia, and West Virginia. ORSANCO operates programs to improve water quality in the Ohio River and its tributaries, including: setting waste water discharge standards; performing biological assessments; monitoring for the chemical and physical properties of the waterways; and conducting special surveys and studies. ORSANCO also coordinates emergency response activities for spills or accidental discharges to the river, and promotes public participation in programs, such as the Ohio River Sweep and the RiverWatchers Volunteer Monitoring Program.<sup>35</sup>
- Rappahannock RBC: The Rappahannock RBC<sup>36</sup> was established to provide guidance for the stewardship and enhancement of water quality and natural resources in the Rappahannock River Basin. The RRBC is a forum for governments and citizens to discuss issues affecting the Basin's water quality and quantity, as well as other natural resources.
- Rivanna RBC: The Rapidan RBC was established to provide guidance for the stewardship and enhancement of the water and natural resources of the Rivanna River Basin. The Commission is a forum in which local governments and citizens can discuss issues affecting the Basin's water quality and quantity and other natural resources.<sup>37</sup>

---

<sup>33</sup> Code of Virginia §62.1-65

<sup>34</sup> Code of Virginia § 62.1-79.1

<sup>35</sup> <http://www.orsanco.org/>

<sup>36</sup> Code of Virginia §62.1-69.27

<sup>37</sup> Code of Virginia § 62.1-69.46

- RRBBC: The RRBBC<sup>38</sup> is composed of members from the Commonwealth of Virginia and the State of North Carolina. The purpose of the RRBBC is to, among other things, provide guidance and make recommendations to local, state, and federal legislative and administrative bodies, and to others as it deems necessary and appropriate, regarding the use, stewardship, and enhancement of the Basin's water and other natural resources. The Virginia Roanoke River Basin Advisory Committee (VRRBAC) was established in the executive branch of state government as an advisory committee to Virginia's RRBBC delegation.

## Water Protection Source

The VDH authority and role in water supply is to ensure that all people in Virginia have access to an adequate supply of affordable, safe drinking water that meets federal and state drinking water standards. The VDH enforces drinking water regulations and standards of the Virginia Public Water Supply Law<sup>39</sup> and the federal Safe Drinking Water Act<sup>40</sup> (SDWA). The VDH also monitors drinking water quality, supports voluntary source water protection efforts, provides technical assistance and training with respect to all drinking water issues, and provides financial assistance to improve drinking water systems.

The 1986 Amendments to the SDWA established a federal Wellhead Protection Program to protect groundwater that supplies wells and wellfields contributing to public water supply systems. The legislation called on states to develop programs that would protect groundwater-based public water supplies from contaminants that may adversely affect human health. Ten years later, the SDWA Amendments of 1996<sup>41</sup> established a Drinking Water State Revolving Fund (DWSRF) Program and expanded the protection concept to include surface waters.

As a part of the DWSRF Program, funds have been set aside to enhance the ability of waterworks owners to ensure long-term capacity to produce safe drinking water and to protect source waters, including groundwater that supplies wells, wellfields, and surface-based systems. Protecting source water can benefit the environment, waterworks owners, and the public. The environment benefits from a reduced risk of contamination and impacts to ecosystems, the owner benefits from lower and/or sustainable operational costs in treating the water, and the public benefits from safer drinking water and a cleaner environment.

The 1996 Amendments to the SDWA also require states to develop a source water assessment program (SWAP) and complete assessments and susceptibility evaluations on all public water supply systems in

---

<sup>38</sup> Code of Virginia §62.1-69.37

<sup>39</sup> Title 32.1-167 through Title 32.1-176

<sup>40</sup> Title XIV of the Public Health Service Act, Safety of Public Water Systems (Safe Drinking Water Act)

<sup>41</sup> P.L.104-182

the Commonwealth. This effort was undertaken and completed in 2003. The VDH continues to perform new wellhead site approvals and routine sanitary surveys of existing wellheads.

The goal of the SWAP is to establish procedures and provide a foundation of support for protecting the Commonwealth's drinking water resources from degradation. This degradation can be the result of residential, industrial, commercial, agricultural, waste management, or transportation: accidental introduction of contaminants; improper land use practices; illegal material handling practices; and other conditions. The SWAP methodology includes delineating assessment boundaries of a drinking water source, performing an inventory of land use activities, and determining a relative susceptibility of the drinking water source to these activities. Many source waters in Virginia that were designated as highly susceptible have had source water protection plans (SWPP) developed. SWPPs are voluntary in the Commonwealth of Virginia. The VDH and the DEQ encourage and provide support, both financial and technical, to SWPP development efforts.

### Chesapeake Bay Preservation Act

The Chesapeake Bay Preservation Act<sup>42</sup> (Bay Act) was enacted by the Virginia General Assembly in 1988 as a critical element of Virginia's non-point source management program. The Bay Act is designed to improve water quality in the Chesapeake Bay and other waters of the State by requiring the use of effective land management and land use planning, key elements to sustainable water resources. At the heart of the Bay Act is the concept that land can be used and developed to minimize negative impacts on water quality.

Virginia designed the Bay Act and the Chesapeake Bay Preservation Area Designation and Management Regulations (Bay Regulations) to enhance water quality and still allow reasonable development to continue. The Bay Act and Bay Regulations recognize local government responsibility for land use decisions and are designed to establish a framework for compliance without dictating local program development. Local governments have flexibility to develop water quality preservation programs that reflect unique local characteristics and embody other community goals. Such flexibility also facilitates innovative and creative approaches in achieving program objectives. The regulations address nonpoint source pollution by identifying and protecting certain lands called Chesapeake Bay Preservation Areas.

Each Tidewater locality must adopt a program based on the Bay Act and Bay Regulations. The Bay Regulations use a resource-based approach that recognizes differences between various land forms and treats them differently. The DEQ staff provides technical and financial assistance to the Tidewater local governments to ensure comprehensive plans, zoning ordinances, and subdivision ordinances are in

---

<sup>42</sup> Code of Virginia §62.1-44.15:74

compliance with the Bay Regulations. This ensures consistent land use decisions are implemented, thereby protecting water quality. The program is implemented by the DEQ's Office of Stormwater Management.

## Impaired Streams

Virginia's goal is that all streams attain and maintain the quality necessary to support applicable designated uses to be made of the water. The DEQ's water quality assessment program staff and partners monitor Virginia's rivers, lakes, and tidal waters annually for over 130 pollutants to determine whether the Commonwealth's waters can support their applicable designated uses – basically swimming, fishing, and drinking – that have been identified for a particular water body. There are six designated uses applicable to water quality in surface water bodies:

- aquatic life – supports the propagation, growth, and protection of a balanced indigenous population of aquatic life which may be expected to inhabit a waterbody
- fish consumption – supports game and marketable fish species that are safe for human health
- shellfishing – supports the propagation and marketability of shellfish (clams, oysters, mussels)
- recreation – supports swimming, boating, and other recreational activities
- public water supply – supports safe drinking water
- wildlife – supports the propagation, growth, and protection of associated wildlife

Based upon the quality of water needed to support each of these uses, Virginia's water quality standards establish numeric criteria against which physical and chemical data are assessed. Virginia's surface waters are monitored annually to determine if they meet water quality standards. If a waterbody contains more contamination than allowed by water quality standards, it will not support one or more of the designated beneficial uses. Such waters are considered to have "impaired" quality or having an individual parameter or characteristic that violates a water quality standard. A surface water body fails to support a designated use when it has one or more impairments. In most cases, a cleanup plan based upon the "total maximum daily load" (TMDL), a term that represents the total pollutant a water body can assimilate and still meet water quality standards, must be developed and implemented to restore impaired waters.

Since 1992 and every even year since, DEQ has developed a list of waters that do not meet water quality standards. This list of impaired waters is reported to the citizens of Virginia and the U.S. Environmental Protection Agency (USEPA) as the [Virginia Water Quality Assessment 305\(b\)/303\(d\) Integrated Report](#) (Integrated Report). The Integrated Report, developed by DEQ's Office of Water Quality Monitoring and Assessment, describes segments of streams, lakes, and estuaries that violate water quality standards, details the pollutant responsible for the violations, and identifies the suspected cause and source of the pollutant. DEQ has developed TMDL implementation plans, with public input, since 1998 to restore and

maintain the water quality for the impaired waters. The location of impaired waters and the types of impairment were provided as required in local and regional water supply plans. Improved water quality is critical to water supply management. Water quality often decreases as water quantity decreases, adversely affecting in-stream beneficial uses.

## Virginia Pollution Discharge Elimination System Program

Section 402 of the Clean Water Act established the National Pollutant Discharge Elimination System (NPDES) program to limit pollutant discharges into streams, rivers, and bays. The program is administered in Virginia as the VPDES Program. DEQ issues VPDES permits for all point source discharges to surface waters and to dischargers of stormwater from industrial activities, construction activities, and municipal separate storm sewer systems (MS4s). Requirements for VPDES permits authorizing discharges of stormwater from construction activities and MS4s are established in the Virginia Storm Water Management Program<sup>43</sup> (VSMP). DEQ issues individual permits to both municipal and industrial facilities. Permit requirements, special conditions, effluent limitations, and monitoring requirements are determined for each facility on a site-specific basis to meet applicable water quality standards.

DEQ issues general permits for a general class of dischargers. In Virginia, general permits must be written as permits and adopted as regulations. Classes of dischargers covered under general permits include but are not limited to:

- Domestic Sewage Discharges of Less Than or Equal to 1,000 Gallons Per Day (9VAC25-110)
- Seafood Processing Facilities (9VAC25-115)
- Petroleum Contaminated Sites and Hydrostatic Tests (9VAC25-120)
- Discharges of Storm Water Associated with Industrial Activity (9VAC25-151)
- Non-Metallic Mineral Mining (9VAC25-190)
- Concentrated Animal Feeding Operations (9VAC25-191)
- Concrete Products Facilities (9VAC25-193)
- Vehicle Wash and Laundry Facilities (9VAC25-194)
- Non-Contact Cooling Water Discharges (9VAC25-196)
- Pesticides Discharges (9VAC25-800)
- Potable Water Treatment Plants (9VAC25-860)
- Watershed Permit for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed (9VAC25-820)
- Stormwater Discharges from Construction Activities (9VAC25-80)

---

<sup>43</sup> Code of Virginia §62.1-44.15:24

- Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (9VAC25-890).

The Storm Water Management Act and VSMP permit regulations provide DEQ the ability to manage the quantity and quality of stormwater runoff on construction sites as well as on a regional or watershed basis when the stormwater runoff is not confined to a single source, such as a wastewater treatment plant or industrial discharge pipe. During construction, a permit may also be required for erosion and sediment control. These permits are issued by localities as part of their erosion and sediment control programs. DEQ also conducts reviews of local erosion and sediment control programs.

There are 975 active VPDES Individual Permits.

### Virginia Pollution Abatement Program

The treatment of sewage sludge, storage and land application of biosolids, industrial wastes (sludge and wastewater), municipal wastewater, and animal wastes (manure/litter from livestock and poultry) are regulated activities under the Virginia Pollution Abatement (VPA) Program<sup>44</sup>. Oversight of these potential contaminant sources protects water quality for all beneficial uses. DEQ may issue a VPA permit whenever waste or wastewater are managed in a manner that does not involve discharging to a sewage treatment work or to state waters pursuant to a valid VPDES permit. In general, land application of biosolids, industrial sludge, or spray irrigation of industrial and municipal wastewater is covered by a VPA individual permit. Animal Feeding Operations (AFO) are covered by a VPA individual or general permit. Livestock operations that confine more than 300 animal units and utilize liquid waste storage are typically covered by a general VPA permit<sup>45</sup>. Confined poultry feeding operations are typically covered by the VPA general permit for poultry waste management<sup>46</sup>. VPDES individual permits may be required for some Concentrated Animal Feeding Operations (CAFOs) in accordance with the VPDES Permit Regulation<sup>47</sup>. DEQ does not utilize a general permit for CAFOs that require a VPDES permit.

There are 147 active VPA Individual Permits. There are 140 active CAFO General Permits and 876 Poultry General Permits issued under the VPA.

---

<sup>44</sup>§9VAC25-32

<sup>45</sup>§9VAC25-192

<sup>46</sup>§9VAC25-630

<sup>47</sup>§9VAC25-31

## Federal Regulatory Controls Regarding Water Use

### U.S. Environmental Protection Agency

The DEQ has been granted primacy for authority of a number of water protection programs administered by the USEPA under the CWA and the Resource Conservation and Recovery Act<sup>48</sup>. Funding allocated to the states through these Acts enables states to implement programs that ensure safe and reliable sources of water for all beneficial uses.

In addition, the USEPA provides an oversight role as a commenting agency on applications requesting authorization to impact "waters of the United States, including wetlands," (WOUS). Section 404 of the CWA, which establishes a permitting program to regulate the discharge of dredge and fill material into waters of the United States, is delegated by USEPA to the USACE. USACE administers the day-to-day program, including individual permit decisions and jurisdictional determinations; develops policy and guidance; and enforces Section 404 provisions. EPA develops and interprets environmental criteria used in evaluating permit applications, identifies activities that are exempt from permitting, reviews/comments on individual permit applications, enforces Section 404 provisions, and has authority to veto USACE permit decisions.<sup>49</sup>

### U.S. Army Corps of Engineers

Section 404 of the CWA is administered by the USACE with oversight from the USEPA. Section 404 requires that anyone interested in depositing dredged or fill material into WOUS must receive authorization for such activities. Areas that are regulated by the USACE include, but are not limited to, tidal marshes, seasonally saturated forested and non-forested wetlands, swamps, rivers, bays, and streams. Activities in WOUS for which permits may be required include, but are not limited to, fill, ditching activities when excavated material is sidecast, mechanized clearing, and land leveling. The USACE has authority to regulate and issue permits under Section 404 of the CWA and also under Section 10 of the Rivers and Harbors Act of 1899<sup>50</sup> for activities proposed in navigable waters.

The USACE also manages three multi-purpose reservoir projects located within the Commonwealth that serve the following uses: flood risk management, hydropower generation, water supply, water quality management, and recreation. These projects are the Gathright Dam/Lake Moomaw Reservoir in the Upper James River Basin and two projects within the Roanoke River Basin: the J. H. Kerr Dam and Reservoir on the lower Roanoke River and the Philpott Dam and Reservoir on the Smith River. The USACE also manages two dam and reservoir projects within the Upper Potomac River Basin (Jennings-

---

<sup>48</sup> Subtitle C of RCRA (40 CFR Parts 260-299)

<sup>49</sup> <http://water.epa.gov/type/oceb/habitat/cwa404.cfm>

<sup>50</sup> 33 U.S.C. 403; Chapter 425, March 3, 1899; 30 Stat. 1151

Randolph and Savage River), which act as water-supply storage reservoirs for the Washington DC metropolitan region. USACE operated hydropower projects do not require Federal Energy Regulatory Commission (FERC) licensing. The DEQ involvement in USACE projects includes participation in regular and periodic water management stakeholder meetings, participation in studies authorized by Section 216 of the River and Harbor and Flood Control Act of 1970<sup>51</sup>, and representation on the Potomac River Basin Drinking Water Source Protection Partnership.

## U.S. Geological Survey

In general, the USGS supports the nation in its management of water resources by providing scientific studies, publications, data, maps, and application software. In Virginia, DEQ enjoys an active collaborative relationship with the USGS Virginia Water Science Center. Staff members from both agencies work in tandem to investigate, collect samples, and analyze the waters of the Commonwealth. These efforts include monitoring of precipitation, stream discharge, groundwater levels, and quality of surface water and groundwater under contract to DEQ. Currently, the DEQ and USGS cooperatively operate a stream gage monitoring network for Virginia that consists of 195 stations at which streamflow and/or water quality are monitored on a real-time basis. The DEQ and USGS also cooperatively operate a groundwater monitoring network for Virginia that includes 131 real-time sites. Both networks also include dozens of additional stations at which discharge, water level, and/or water quality data are collected periodically. These stations also provide important ancillary data, including stream channel surveys, geologic logs, and hydrogeologic tests.

The data from these networks have formed the foundation for a large number of studies focused on estimating the availability of water for beneficial uses within the Commonwealth and gauging the impacts of water withdrawals upon streams, reservoirs, and aquifers. A number of these projects involved the development of statistical and numerical models that are used to better understand the relationships between local and regional hydrology, geology, and water use. Examples of these projects include a state-wide statistical analysis of the low-flow characteristics of Virginia streams, development of an updated hydrogeologic framework, and regional-scale numerical groundwater models of the Virginia Coastal Plain aquifer system and the Eastern Shore aquifer system to assist in evaluating groundwater availability, and the development of a groundwater flow model of the fractured rock aquifer system in the northern Shenandoah Valley that provided valuable information regarding the connection between the aquifer system and the Potomac River. The latter project, which was the first attempt to model a complex, fractured rock aquifer system in Virginia, was a cooperative effort initiated by local governments in the region. Other examples of applied collaborative research studies supported by the Commonwealth and local stakeholders include an evaluation of nutrient loading to the Chesapeake Bay and mercury

---

<sup>51</sup> Pub. L. 91-611, 84 Stat. 1818

loading to the South River and South Fork of the Shenandoah River. Data from ongoing monitoring are maintained by the USGS and available from the USGS website at <http://waterdata.usgs.gov/va/nwis/nwis>.

## Federal Energy Regulatory Commission

The FERC is an independent agency that regulates the interstate transmission of electricity, natural gas, and oil. FERC also reviews proposals to build liquefied natural gas terminals and interstate natural gas pipelines, as well as licensing hydropower projects. FERC's hydropower licensing process includes provisions for stakeholder comments from state agencies, including DEQ as the agency providing Section 401 certification for federal Section 404 permits issued under the authority of the CWA. The VWPP Program serves as Virginia's Section 401 Certification program for federal Section 404 permits. Since the commencement of the VWPP Program, the DEQ and FERC have collaborated during the licensing process so that the conditions assigned to certifications have been incorporated into the corresponding FERC license articles whenever a hydropower license has been issued or reissued. Currently, there are 22 active FERC licenses for hydropower projects in Virginia. Ten of these projects have Section 401 certifications; the remaining projects predated Virginia's permitting requirements.

## U.S. Fish and Wildlife Service

The USFWS is engaged in water-resource planning, management, and research that conserves, protects, and enhances the nation's fish, wildlife, and plants. The USFWS participates in the Section 404 of the CWA permitting process administered by the USACE by commenting on applications requesting authorization to impact WOUS.

## National Oceanic and Atmospheric Administration

The National Oceanic and Atmospheric Administration (NOAA) includes the National Weather Service (NWS), which collects, analyzes, and provides weather and climatological data, evaluations, and forecasts for use by state agencies and citizens of the Commonwealth. Using a combination of automated observation stations, a cooperative observer network and Doppler Weather Radar stations, the NWS collects and provides nearly continuous meteorological data. Weather data are made available via numerous services, including two Weather Forecast Offices (WFO) located within Virginia (Blacksburg and Wakefield), the Advanced Hydrologic Prediction Service, and the Middle Atlantic River Forecast Center. These sources provide critical information about current and recent weather conditions and provide flood forecasting. Longer-term climatic data and forecasts are made available by the NWS Climate Prediction Center and NOAA's National Climatic Data Center. In addition, the WFOs collect and disseminate precipitation, river, and rainfall data, and prepare local climatological data. This information

is critical to understanding local and regional water supply issues and particularly important for anticipating and responding to drought declarations.