

FEATURE ARTICLE

EPA PRESCRIBES A 'POLLUTION DIET'
FOR THE IMPAIRED CHESAPEAKE BAY

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The Chesapeake Bay is the largest estuary in the United States and third largest in the world. Its watershed covers about 64,000 square miles and receives water from New York, Pennsylvania, West Virginia, Delaware, Maryland, Virginia, and the District of Columbia (bay states). Given its prominence, the bay has been heralded as a "national treasure," but unfortunately, it has long suffered from the effects of heavy nutrient pollution and sedimentation. The bay states and the U.S. Environmental Protection Agency (EPA) have attempted to control pollution in the bay and restore its ecological health over the years, but their efforts have not yet been successful.

That may be changing. With promises to take the bay restoration more seriously, the federal government recently released a new strategy for restoring the Chesapeake Bay Watershed. Concurrently, EPA entered into a settlement agreement imposing legally enforceable obligations on EPA to implement elements of that strategy. The centerpiece of both the federal strategy and the settlement agreement that mirrors it is the development of a more comprehensive total maximum daily load (TMDL) for nitrogen, phosphorus, and sediments in the Chesapeake Bay (Bay TMDL). This article explores how EPA proposes to make creative, aggressive use of existing authority to revamp previously unsuccessful Chesapeake Bay initiatives, and how EPA is compelling bay states to develop the additional authority that will be necessary to meet their obligations under the Bay TMDL.

Background

The Clean Water Act (CWA) requires states to establish water quality standards designed to protect

designated uses. If waters within a state's boundaries fail to meet applicable quality standards, the state must place those waters on a § 303(d) list, thereby designating them as impaired. States must establish priority rankings of their impaired waters and develop TMDLs to restore water quality. The TMDL represents the maximum amount of a pollutant that a water body can accept from point and non-point sources in a watershed and still meet water quality standards. TMDLs, however, create no independently enforceable standards. Rather, they must be implemented through other means, such as the National Pollutant Discharge Elimination System (NPDES) program. Under the NPDES program, however, permits are issued only to point sources, not non-point sources. Because non-point source pollution is the dominant cause of the impairment of bay waters, EPA has been left to seek reductions of the critical pollutant source through other, less certain means.

The federal government and bay states have long sought to remedy the bay's impairment. In 1983, Maryland, Pennsylvania, Virginia, the District of Columbia, the Chesapeake Bay Commission, and EPA established the Chesapeake Bay Program. The signatories to the program committed to a number of voluntary initiatives to protect and restore the bay's ecosystem. Their initial efforts, however, did not yield the expected results. In 1996, 1998, and 2000, portions of the bay in Maryland, Virginia, and the District of Columbia were placed on § 303(d) lists for dissolved oxygen, water clarity, and chlorophyll-a resulting primarily from excess nitrogen, phosphorus, and sediment. The main sources of these pollutants are agriculture, urban and suburban runoff, wastewater, and airborne contaminants.

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In 2000, Pennsylvania, Maryland, Virginia, and the District of Columbia committed to remove impaired waters from their § 303(d) lists by 2010. Chesapeake 2000 (June 28, 2000). Among other actions, the Chesapeake 2000 signatories re-affirmed their pollution reduction and resource protections goals and committed to implementing strategies to achieve and maintain water quality conditions necessary to support the bay's living resources and to protect human health by reducing nutrients, sediments, and pollutants.

Unfortunately, like earlier initiatives, the Chesapeake 2000 initiative fell short. The bay continues to have poor water quality, degraded habitats, and reduced fish and shellfish populations. Federal and state regulators and the public share frustration with the lack of improved water quality in the bay and continue to search for an effective solution. Building on this frustration, environmental groups have brought suit against EPA. For example, in *American Canoe Association, Inc. v. U.S. EPA*, Case No. 98-979-A (E.D. Va. 1999), EPA entered into a consent decree that required it to establish nutrient and sediment TMDLs for Virginia's impaired bay tributaries by no later than May 1, 2011. Under a consent decree in *Kingman Park Civic Association v. U.S. EPA*, Case No. 1:98-CV-00758 (D. D.C. 2000), EPA must establish a pH TMDL for the Potomac River by May 1, 2011.

On the federal side, President Obama issued Executive Order 13508—"Chesapeake Bay Protection and Restoration"—in 2009 "to protect and restore the health, heritage, natural resources, and social and economic value of" the bay. To oversee federal efforts, Executive Order 13508 established the Federal Leadership Committee for the Chesapeake Bay (FLC), charged with addressing several key challenges facing the bay.

In September 2009, in accordance with the foregoing consent decrees and executive order 13508, EPA introduced the Chesapeake Bay TMDL, describing it to be the "largest, most complex TMDL in the country." 74 Fed. Reg. 47792, 47793 (Sept. 17, 2009). The Bay TMDL will actually be a combination of 92 smaller TMDLs, one for each impaired segment of the bay and its tidal tributaries. It will address point and non-point source pollution for all bay states, including the non-signatories to Chesapeake 2000. The Bay TMDL will require reductions in nitrogen, phosphorus, and sediment sufficient to achieve established

water quality standards for dissolved oxygen, water clarity, and chlorophyll-a. This "pollution diet" will be divided among bay states, which in turn will divide loading reductions among sources in their impaired tidal segments.

On May 10, 2010, EPA settled a third case, *Fowler v. U.S. EPA*, Case No. 1:09-cv-00005-CKK (D. D.C. 2009) (*Fowler Settlement*). This settlement resolved plaintiffs' allegations that EPA failed to fulfill non-discretionary duties under the CWA and Chesapeake 2000, and required EPA to implement bay-wide programs to reduce loads of nitrogen, phosphorus, and sediments. Under the *Fowler Settlement*, EPA must establish the Bay TMDL by December 31, 2010. EPA's progress is subject to judicial oversight.

Just one day after EPA entered into the *Fowler Settlement*, the FLC issued its Strategy for Protecting and Restoring the Chesapeake Bay Watershed (FLC Strategy), as required by Executive Order 13508. The FLC Strategy outlines the actions that will be taken by federal agencies on an ambitious list of goals that include clean water restoration; animal and habitat recovery and sustainability; land conservation; the development of environmental markets; and increased public awareness and accountability. According to the FLC, its strategy reflects "a significant deepening of the federal commitment to the Chesapeake." Among the federal actions identified in the FLC Strategy is development and implementation of the TMDL to which EPA had committed itself in settlement just the day before.

EPA's Proposed Implementation of the Chesapeake Bay TMDL

The FLC Strategy draws upon several well-established legal tools and principles, including the establishment of a nutrient and sediment TMDL for the bay. But because TMDLs create no independently enforceable standards, EPA has committed to initiating a series of actions set forth in the *Fowler Settlement* and the FLC Strategy that build upon earlier activities. For instance, EPA intends to maximize its control over point sources by tightening existing NPDES rules to reduce pollution from concentrated animal feeding operations (CAFOs) and stormwater runoff. In addition, EPA will utilize existing CWA authority to push bay states to maximize their NPDES-based control of point sources via more intensive EPA scru-

tiny of bay states' programs and a new tracking and accounting system. Also, EPA has looked for creative ways to limit pollution over which it has limited authority, such as non-point source discharges. To that end, EPA will push for the creation of environmental markets for nutrient and sediment trading among the bay states. This trading program could apply to point *and* non-point sources. Lastly, recognizing its limited authority, EPA will seek to hold the bay states accountable for developing their own approaches to satisfy the Bay TMDL.

Proposed Revision of Federal Rules Governing CAFOs

To support the Bay TMDL's implementation, EPA committed to a series of actions that build upon earlier activities, such as the increased regulation of CAFOs. Discharges of manure and process wastewater from CAFOs are considered point source discharges subject to the NPDES program. In 2008, EPA issued new CAFO rules modifying requirements for NPDES permits and requiring greater scrutiny of site-specific nutrient management plans in response to the Second Circuit's decision in *Waterkeeper Alliance et al. v. U.S. EPA*, 399 F.3d 486 (2nd Cir. 2005).

The bay states have approximately 1,784 CAFOs. Manure and wastewater from CAFOs contribute nutrients, sediments, and other pollutants to the bay watershed. Nevertheless, Maryland is the only bay state at present that has revised its NPDES program to implement the 2008 CAFO rules. According to the FLC Strategy, EPA will attempt to compel the other bay states to implement the 2008 CAFO rules by conducting formal reviews of their delegated NPDES programs between now and December 30, 2010. States with programs that are found wanting, stand to lose federal funding support for their permitting operations.

In addition, EPA has committed to develop new CAFO regulations to more effectively address pollutant reductions necessary for the Bay TMDL. *See*, FLC Strategy, at 27; *Fowler Settlement*, at ¶ 13. Under the timeframe identified in both the FLC Strategy and the *Fowler Settlement*, EPA must propose the new CAFO rule by June 30, 2012, and take final action by June 30, 2014. Among other issues, EPA will address environmental groups' complaint that the current definition of CAFOs does not encompass a sufficient number of polluters. Accordingly, EPA has indicated

that it will consider expanding the universe of regulated CAFOs by increasing the number of operations that qualify as a CAFO. Thus, it appears that existing loopholes will be eliminated and the standards for all CAFOs made more rigorous.

Proposed Revision of Federal Rules Governing Stormwater Runoff

Another new initiative that builds upon earlier activities concerns the increased regulation of stormwater runoff. To support the implementation of the Bay TMDL, EPA will initiate rulemaking to address pollutant discharges from new development and redevelopment sites. *See*, FLC Strategy, at 27; *Fowler Settlement*, at ¶ 12. The current NPDES stormwater program regulates stormwater discharges from four sources: municipal separate storm sewer systems (MS4s), construction activities, "stormwater from industrial activities," and stormwater from a limited number of industries subject to effluent limitation guidelines. But EPA has the authority to require stormwater permits from additional sources. EPA also can address both point and non-point stormwater sources that contribute to flows through MS4s by modifying the obligations contained in NPDES permits issued to those MS4s; an indirect means of imposing non-point source control through point source permitting.

While still very much in the developmental stage, this new rulemaking has the following five ambitious objectives: (1) To expand the coverage of federal stormwater regulations; (2) to establish specific requirements to control stormwater discharges from new development and redevelopment sites; (3) to devise a single set of consistent stormwater requirements for all MS4s; (4) to require MS4s to address stormwater discharges in areas of existing development through retrofitting sewer systems or drainage areas with improved stormwater control measures; and (5) to consider direct NPDES permitting of previously unpermitted point sources of stormwater. To this end, EPA already is gathering information about current stormwater management and control practices from owners and developers of residential, commercial, industrial, and non-commercial sites; owners and operators of MS4s; and NPDES permitting authorities. Under the timeframe identified in both the FLC Strategy and the *Fowler Settlement*, EPA must

propose new stormwater rules by September 30, 2011, and take final action by November 19, 2012.

In the interim, the FLC Strategy calls for EPA to encourage bay states to incorporate more objective and enforceable permit provisions for stormwater discharges. By July 31, 2010, EPA also expects to issue (or enhance) guidance on stormwater permitting for MS4s in the Chesapeake Bay Watershed. The new guidance will identify key regulatory and water quality performance expectations that EPA will consider when reviewing all new or reissued MS4 permits in the bay states.

Increased Oversight of the Bay States' NPDES Permit Programs

To further support the implementation of the Bay TMDL, EPA is using existing authority under CWA § 402(d) to push bay states to maximize their NPDES-based control of point sources via program reviews. Pursuant to the *Fowler* Settlement, between May 10, 2010 and December 31, 2017, EPA will review all new or reissued NPDES permits submitted by bay states for significant point source discharges of nitrogen, phosphorus, and sediment. EPA's objective will be to ensure that proposed NPDES permit limitations are consistent with the respective water quality standards for dissolved oxygen, water clarity, and chlorophyll-a and the Bay TMDL wasteload allocations. EPA may object to the issuance of a draft NPDES permit if it does not include the necessary effluent limitations.

In addition, EPA intends to review all new or reissued construction general permits submitted by the bay states pursuant to the CWA's NPDES program. In conducting this review, EPA would evaluate whether the proposed permits ensure compliance with applicable water quality standards and are consistent with applicable federal and state requirements, including new federal effluent limitations guidelines, new source performance standards, existing local TMDLs, and any requirements developed in the CAFO and stormwater rulemakings.

EPA intends to supplement its review of the NPDES permits by implementing a new tracking and accounting system by January 31, 2011. In addition to providing a tool for EPA and states, the tracking system will address long-standing complaints by environmental groups that NPDES permits are not readily accessible to the public. Although the groups can

generally obtain copies of the permits through the Freedom of Information Act process, that process can take several months. The tracking system is expected to provide expedited access to those NPDES permits.

Moreover, EPA expects to use the tracking system in the long term to track permit discharges, offsets for new or increased discharges, and progress on attainment of Bay TMDL allocations at the local level. This increased transparency could lead to greater citizen participation in the development of the permits as well as increased enforcement by the bay states and EPA, either on their own or as a result of being compelled to act pursuant to citizen suits. Indeed, EPA is in the process of implementing the Chesapeake Bay Compliance and Enforcement Strategy specifically to address environmental violations associated with nutrients, sediment, and other pollution.

Creation of Environmental Markets for Nutrients and Sediment

To reduce costs associated with implementing the Bay TMDL and to provide flexibility for those affected by the Bay TMDL, EPA is working with the bay states, the U.S. Department of Agriculture (USDA), and other federal agencies to create "environmental markets" for various types of resources, including nutrients, sediment, habitat, and wetlands. This initiative will build upon the Food, Conservation, and Energy Act of 2008, Pub. L. No. 110-234, 122 Stat. 923 (2008), which directs USDA to facilitate the participation of farmers, ranchers, and forest landowners in emerging environmental markets and to establish guidelines for measuring and verifying benefits acquired from these markets. This initiative will also build upon programs already established or in the process of being established by some bay states.

Environmental markets will allow an entity that needs to reduce environmental impacts to buy credits representing an equivalent or greater amount of environmental improvement from another entity that provides some or all of the required improvement. Such programs move beyond the traditional framework of the CWA and may incentivize reductions in both point *and* non-point source pollution, affecting activities that the CWA's command and control approach cannot reach directly. The FLC believes that environmental markets in the bay watershed may provide an important new mechanism to complement the FLC Strategy's water pollution programs, and, if

successful, could be used as a template for environmental markets nationwide.

To get the ball rolling on this initiative, EPA will issue guidelines for nutrient and sediment reduction credits by December 31, 2010. On a parallel track, USDA intends to lead an interdepartmental “environmental marketing team” to coordinate efforts in establishing the environmental market infrastructure for the bay. While the FLC Strategy offers little guidance other than briefly noting that agencies should explore opportunities in habitat, wetlands, and conservation banking, EPA and USDA may be able to draw upon recent state efforts. For example, in 2008, Maryland introduced a policy for nutrient trading among point sources in its bay waters and a trading program for agricultural non-point sources. *See*, Md. Code Ann., Agric. §§ 8-901 through 8-904.

Implementation of Accountability Framework to Insure Bay State Performance

To further support implementation of the Bay TMDL, EPA will implement a framework for accountability that promotes transparency in the planning, tracking, reporting, evaluating, and adaptation of restoration activities. Through this framework EPA intends to push bay states to control both point and non-point sources of water pollution to meet and maintain their respective Bay TMDL allocations. Because EPA has limited authority to regulate non-point source discharges, EPA will increase oversight of the bay states’ programs and require bay states to find additional, non-NPDES means to meet their pollution reduction targets.

EPA’s framework includes three layers of accountability. The first layer is individual “watershed implementation plans” (WIPs) that will detail how each bay state allocates its portion of the pollution diet. In three phases, the bay states must: (1) divide nutrient and sediment target loads among point and non-point sources within their boundaries and identify control measures to achieve target loads; (2) further divide non-point source and aggregate point source allocations among smaller geographic areas or facilities; and (3) refine their actions and controls. Information from the draft Phase I WIPs will be incorporated into the draft bay-wide TMDL. The bay states must develop and submit their Phase I, Phase II, and Phase III WIPs in final form by November 1, 2010, November 1, 2011, and January 1, 2017, respectively.

The second layer of accountability is a series of commitments, or “milestones,” from each bay state to reduce nutrients and sediment during a two-year period. According to EPA, by meeting the December 31, 2011 milestones, the amount of nitrogen entering the bay will decrease by 15.8 million pounds and the amount of phosphorus by 1.05 million pounds. Further, by meeting these and future milestones, the bay states should be able to restore the bay’s water quality by 2025. Federal agencies have committed to join the bay states in establishing two-year milestones.

The third and final layer of accountability is the “consequences” resulting from a bay state’s failure to “meet EPA’s expectations for developing [WIPs]” or “demonstrate satisfactory progress toward achieving nutrient and sediment allocations established by EPA in the Chesapeake Bay TMDL.” These consequences may include: (1) expanding NPDES permit coverage to currently unregulated sources; (2) objecting to NPDES permits and increasing program oversight; (3) requiring net improvement offsets; (4) establishing finer scale wasteload and load allocations in the Bay TMDL; (5) requiring additional reductions of loading from point sources; (6) increasing and targeting federal enforcement and compliance assurance in the watershed; (7) conditioning or redirecting EPA grants; and (8) promulgating federal standards for local nutrient water quality.

In addition, EPA maintains that it can impose more stringent requirements on point source dischargers if a bay state does not adequately demonstrate that the necessary non-point source reductions will occur. This none-too-veiled threat speaks to limiting growth through permits that are impossibly stringent as a means of incentivizing states and their political subdivisions to find or enact new ways to control non-point sources. According to EPA:

...requiring further point source upgrades to the limits of technology [is] an option of last resort and is avoidable if the bay partners use [their] creative energies to deliver sufficient non-point pollutant reduction commitments.

Conclusion and Implications

The FLC Strategy is both geographically and substantively ambitious. Although the FLC Strategy has no new legal authority upon which to rely, it makes

more aggressive use of existing authority than EPA has in the past. This includes a tighter reign on bay states' implementation of NPDES authority, expansion of the universe of point sources subject to that authority, creation of new substantive obligations for nutrient and sediment point sources, and the facilitation of trading mechanisms to encourage non-point sources to contribute reductions where they can do so more cost-effectively than can directly regulated point sources. Implicit in the program, however, is the threat of constricting EPA oversight and even shutdowns of local growth where NPDES permitting alone is unable to achieve the pollutant reductions required by the TMDL. In this endgame situation, bay states will be left to decide whether it is preferable to enact controls over non-point sources that Congress has never been successful in passing or, on the other hand, to accept what could be significant constraints on their capacity to grow.

If the Bay TMDL is successful, EPA will likely expand the tools used to develop and implement the Bay TMDL to other watersheds that face complex nutrient and sediment pollution issues such as San Francisco Bay, Puget Sound, the Great Lakes, and the granddaddy of all watersheds, the Mississippi River Basin. Indeed, the Chesapeake Bay Program's Principals' Staff Committee assert that the Bay TMDL will be a template for other TMDLs nationwide, and Executive Order 13508 specifically directs EPA to identify pollution control strategies that "can be replicated in efforts to protect other bodies of water, where appropriate." Moreover, development of other state and federal pollutant management strategies will be influenced by the new nationwide regulations that EPA has committed to promulgate in connection with the Bay TMDL; by legislation enacted by the bay states to bolster EPA's efforts; and by the outcomes of the inevitable legal challenges to EPA's implementation of the Chesapeake Bay TMDL's accountability framework.

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