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Federal Water Quality Coalition

COMMENTS OF FEDERAL WATER QUALITY COALITION ON THE DRAFT CHESAPEAKE BAY TOTAL MAXIMUM DAILY LOAD

The Federal Water Quality Coalition ("the Coalition") is submitting these comments on the Draft Chesapeake Bay Total Maximum Daily Load (TMDL) released for public comment by the U.S. Environmental Protection Agency (EPA) on September 24, 2010. 75 Fed. Reg. 57776 (Sept. 22, 2010) (Docket Number EPA-R03-OW-2010-0736) (hereinafter Draft TMDL)

The Coalition is a group of industrial companies, municipal entities, property owners, and trade associations that are directly affected, or which have members that are directly affected, by regulatory and policy decisions made pursuant to the Federal Water Pollution Control Act (the Clean Water Act). Coalition members for purposes of these comments are as follows: Alcoa, Inc., American Chemistry Council, American Coke and Coal Chemicals Institute, American Forest & Paper Association, American Iron and Steel Institute, American Petroleum Institute, Association of Idaho Cities, City of Superior (WI), Coeur D'Alene Mines Corporation, Edison Electric Institute, Ford Motor Company, Freeport-McMoRan Copper & Gold, Inc., General Electric Company, Hecla Mining Company, Indiana Coal Council, International Council of Shopping Centers, Mid America CropLife Association, NAIOP, the Commercial Real Estate Development Association, National Association of Home Builders, National Association of REALTORS, Olin Corporation, Orange County Sanitation District, Pharmaceutical EHS Sustainability Council, Rubber Manufacturers Association, The Real Estate Roundtable, Utility Water Act Group, Western Coalition of Arid States, and Weyerhaeuser Company.

Coalition member entities – or their members – own and operate facilities located on or near waters of the United States. Many hold individual and/or general permits for the discharge of pollutants into such waters. Some of these permitted facilities are located in the Chesapeake Bay watershed, so these facilities would be directly affected by federal and state actions that are provided in the Draft TMDL. In addition, as regulated entities, members of the Coalition have a direct interest in actions taken by EPA that may establish regulatory precedent and have regional or national implications outside of the Chesapeake Bay.

We appreciate the opportunity to review and offer comment on the Draft TMDL. It is clear from the Draft TMDL that a tremendous amount of time and effort has been expended to develop a plan to improve water

quality in the Chesapeake Bay. The Coalition supports the goal to improve water quality not only in the Chesapeake Bay Watershed, but wherever water bodies are impaired. We welcome the opportunity to work with EPA and other agencies in furtherance of this goal in ways that are cost-effective and within EPA's authorities.

Unfortunately, as discussed below, the Draft TMDL exceeds EPA's authorities. To address this issue, we recommend that EPA withdraw the Draft TMDL and support the efforts of the watershed jurisdictions to improve water quality. Toward that end, we urge EPA to provide additional funding, modeling and technical assistance to ensure that the implementation measures selected by states are well-designed, equitable, achievable and will result in measureable water quality improvements. If EPA chooses not to withdraw the Draft TMDL, at a minimum, it must revise the TMDL in a manner that conforms with EPA's statutory limitations and better reflects and encourages the on-the-ground efforts of the watershed jurisdictions to improve water quality.

I. The Scope and Substance of EPA's Draft TMDL Exceeds EPA's Statutory Authority.

A. EPA's Statutory Authority To Establish TMDLs is Limited.

Section 303(d) of the CWA requires states to establish the level of a pollutant – the total maximum daily load (TMDL) -- that an impaired water can receive and meet applicable water quality standards. 33 U.S.C. § 1313(d). Under EPA regulations, a TMDL is defined as the sum of the individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background. 40 C.F.R. § 130.2(i). If a state fails to establish a TMDL, EPA has no direct enforcement authority against the state.[1] Instead, in the absence of state action, EPA may backstop the state by acting directly under section 303(d) of the CWA to establish TMDLs.[2]

In the context of the Draft TMDL, it appears that EPA is acting in a backstop capacity for 23 waterbodies in Virginia for TMDLs for dissolved oxygen or nutrients and 2 waterbodies in the District of Columbia for TMDLs for pH. Draft TMDL, at 1-14 to 1-16. The Coalition questions EPA's authority to establish TMDLs for the remaining water quality segments and pollutants. EPA cites to a

[1] Congress may not establish a federal law that compels a state to take regulatory action. *See New York v. United States,* 505 U.S. 144, 162 (1992). ("While Congress has substantial power to govern the Nation directly,…the Constitution has never been understood to confer upon Congress the ability to require the States to govern according to Congress' instruction.").

[2] *Scott v. City of Hammond***,** 741 F.2d 992, 996 (7th Cir. 1984), *cert. denied,* 469 U.S. 1196 (1985) ("[S]tate inaction amounting to a refusal to act" would be interpreted as a constructive submission of no TMDL, thus triggering EPA's duty to approve or disapprove such submission and to establish the TMDL itself (in the event of a disapproval)).

memorandum of understanding (MOU) with Maryland as authority to establish TMDLs in that state. However, EPA cannot expand its CWA authority by entering into a MOU. Draft TMDL, at 1-16. Finally, EPA cites its settlement agreement with the Chesapeake Bay Foundation (CBF) as authority. Draft TMDL, at 1-17. However, EPA cannot enter into judicial settlements with third parties to expand its CWA authority. Thus, except for the 25 TMDLs where EPA has backstop authority based on a judicial determination that a state had failed to act, EPA does not have authority to establish TMDLs for the Chesapeake Bay Watershed, because the CWA places initial responsibility for TMDL development with states.

EPA puts forward the argument that it is authorized to establish a Chesapeake Bay TMDL because section 117(g) directs it to "ensure that management plans are developed and implementation is begun" by signatories to the Chesapeake Bay Agreement. Draft TMDL, at 1-13 (citing 33 U.S.C. § 1267(g)). EPA argues that "the Chesapeake Bay TMDL is such an implementation plan." *Id*. This argument ignores principles of statutory interpretation. The statutory phrases "TMDL" and "management plan" are not interchangeable, and the CWA's text evinces Congress's intent to treat them differently. TMDLs are defined separately by Congress in section 303(d) of the CWA. On the other hand, when Congress refers to non-regulatory nonpoint source plans developed by states, it refers to management plans. *See* 33 U.S.C. § 1329 (discussing state nonpoint source management programs) and 33 U.S.C. § 1288 (discussing state area-wide waste treatment management plans). Congress also uses the term management plan when discussing the comprehensive conservation and management plans established for estuaries of national significance under section 320 of the CWA. If Congress intended for Chesapeake Bay management plans to be considered TMDLs, it would have used the term "TMDL" and not the term "management plan" when describing Bay programs under section 117(g).

Thus, EPA has no authority to establish TMDLs for the entire Chesapeake Bay Watershed.

B. The Clean Water Act Does Not Give EPA TMDL Implementation Authority.

Even where EPA does have backstop authority to establish TMDLs where states fail to do so, it is important to note that establishing a TMDL is legally distinct from establishing measures to implement a TMDL.

Implementation plans associated with a TMDL are not part of the TMDL itself and, thus, are not subject to EPA approval. Pursuant to EPA's own regulations, a TMDL is the sum of the wasteload and load allocations necessary to meet water quality standards. 40 C.F.R. § 130.2(i). Section 303(d)(2) of the

CWA requires states to incorporate approved TMDLs into the water quality management plans that the states maintain under section 303(e). This framework is carried through in EPA's existing TMDL regulations as well as its 1997 guidance document on TMDL implementation. *See* 40 C.F.R. § 130.7(a) and "New Policies for Establishing and Implementing Total Maximum Daily Loads" (1997 Guidance) (noting that "Section 303(d) does not establish any new implementation authorities beyond those that exist elsewhere in State, local, Tribal, or Federal law.").

The 1997 Guidance does recommend that states that rely on nonpoint source reductions to achieve water quality standards in a TMDL provide "reasonable assurance" that the nonpoint source reductions will be achieved. However, the 1997 Guidance does not suggest that implementation plans are subject to EPA approval or that EPA has authority to require reasonable assurance. *See also* EPA's Overview of Impaired Waters and Total Maximum Daily Loads Program ("***Section 303(d) of the CWA does not specifically require implementation plans for TMDLs.")***, accessible at http://www.epa.gov/OWOW/TMDL/intro.html . As EPA has stated: "***Neither the Clean Water Act nor the EPA implementing regulations, guidance or policy requires a TMDL to include an implementation plan. EPA therefore does not approve or disapprove implementation plans as part of the TMDL process."*** *See* EPA's decision rationale for approving the Tidal Potomac PCB TMDL established by the Interstate Commission on the Potomac River Basin, dated October 31, 2007, at p. 12 (emphasis added).

In 2000, EPA issued regulations that, among other things, would have required each TMDL to include an implementation plan. 65 *Fed. Reg.* 43586 (July 13, 2000). Congress blocked implementation of those regulations, and eventually EPA withdrew them. *See* P.L. 106-246 and 68 *Fed. Reg*. 13607 (Mar. 19, 2003).

In 2002, the U.S. Court of Appeals for the Eleventh Circuit reversed an order by the U.S. District Court that had required EPA to establish implementation plans in Georgia in connection with TMDLs already required by a consent decree in that state. The Court held that neither the Clean Water Act nor EPA's regulations require an implementation plan as an element of TMDLs. *Sierra Club v. Meiburg,* 296 F.3d 1021, 1031 (11th Cir. 2002) (noting that the 2000 regulations that would have required implementation plans were never implemented and subsequently withdrawn and holding that "[o]f course, the national policy and objectives relating to clean water are most reliably embodied in the Act itself which puts the responsibility for implementation of TMDLs on the states."); *see also Amigos Bravos v. Green,* 306 F.Supp.2d 48 (D.D.C. 2004) (no implementation plan is required under section 303(d)). Further, as the Ninth Circuit recognized in *Pronsolino v. Nastri:* "States must implement TMDLs only to the extent that they seek to avoid losing federal grant money;

there is no pertinent statutory provision otherwise requiring implementation of § 303 plans or providing for their enforcement." 291 F.3d 1123, 1140 (9th Cir. 2002).

The distinction between the TMDL and the plan for implementing it is particularly important in those watersheds, such as the Chesapeake Bay, where both point and nonpoint sources are contributing pollutants. For example, in 2002 the Ninth Circuit found that TMDLs for nonpoint sources do not upset the federalism balance of the CWA only because the *implementation* of TMDLs remains within the states' exclusive authority. *Pronsolino v. Nastri*, 291 F.3d 1123, 1140 (9th Cir. 2002).

EPA admits that the watershed implementation plans (WIPs) are not part of the TMDL itself. "The WIPs are part of the accountability framework meant to implement the Chesapeake Bay TMDL, but they are not part of the TMDL itself." Draft TMDL, at 1-2. Further, EPA admits that: "While the accountability framework informs the TMDL, section 303(d) does not require that EPA 'approve' the framework *per se*, or the jurisdiction's WIPs that constitute part of that framework." Draft TMDL, at 1-12.

Instead, EPA appears to rely on CWA Section 117(g) to set forth authority over implementation plans. *See* Draft TMDL, at 1-12 ("The accountability framework is also being established pursuant to CWA section 117(g)(1)"). Specifically, EPA relies on the following language in section 117(g): "the Administrator, in coordination with other members of the Chesapeake Executive Council, shall ensure that management plans are developed and implementation is begun by signatories to the Chesapeake Bay Agreement…." 33 U.S.C. § 1267(g)(1)

However, in enacting 117(g) in the "Chesapeake Bay Restoration Act of 2000" (enacted as Title II of the Estuaries and Clean Waters Act of 2000 (P.L. 106-457)), Congress did ***not*** provide the federal government with regulatory authority to achieve the goals listed in section 117(g). The Estuaries and Clean Waters Act of 2000 merges ten water quality bills that had each passed the House of Representatives as stand-alone measures with one bill that passed the Senate. The stand-alone version of Title II was H.R. 3039.[3] The following language from the committee report for H.R. 3039 provides legislative history for section 117(g):

> "(g) Chesapeake Bay Program.—
> (1) Management Strategies.—Directs EPA, in coordination with other members of the Council, to ensure that management plans are developed and implementation is begun by signatories to the

[3] *See* Cong. Rec. H7490 (daily ed. Sept. 12, 2000).

> Chesapeake Bay Agreement to achieve the goals of that Agreement. The Committee expects EPA to meet the requirements of this paragraph through the award of implementation grants under subsection (e). ***Nothing in the Chesapeake Bay Restoration Act provides EPA with any additional regulatory authorities."***

H.R. Rept. No. 550, 106th Cong., 2d Sess., at 3 (2000) (emphasis added).

Therefore, Congress did not grant EPA authority pursuant to CWA Section 117(g) to approve, disapprove, or change the state WIPs.

EPA also cites Executive Order 13508 as authority to dictate the terms of state WIPs. "In addition, Executive Order 13508 directs EPA and other federal agencies to build a new accountability framework that guides local, state, and federal water quality restoration efforts." Draft TMDL, at 1-12. It would violate the separation of powers doctrine for the President to grant the Executive Branch any authority through an Executive Order or otherwise. Other than a few powers granted directly by the Constitution (and not at issue here) the Executive Branch can only implement the laws that Congress has passed. It cannot create any new authority. Therefore, Executive Order 13508 does not give EPA authority to approve, disapprove, or change the state WIPs.

In section 7 of the Draft TMDL, EPA also claims the authority to judge state WIPs under the rubric of "reasonable assurance." "Reasonable assurance" is a concept that does not originate in either the CWA or EPA regulations. Rather, EPA created this concept in its 1997 Guidance. Under that guidance, EPA wants "reasonable assurances" that load allocations will be met if relied upon to establish point source wasteload allocations, and encourages submission of implementation plans to EPA. But, the 1997 Guidance does not purport to make implementation plans subject to EPA approval or give EPA authority to require reasonable assurance.[4] Nonetheless, in the Draft TMDL, EPA goes even further than its 1997 Guidance and asserts that "reasonable assurance that the TMDL's LAs will be achieved depends on whether practices capable of reducing the specified pollutant load (1) exist; (2) are technically feasible at a level required to meet allocations; and (3) have a high likelihood of implementation within a given period." Draft TMDL, at 7-1.

EPA claims it has the authority to demand reasonable assurance under the CWA. Draft TMDL, at vii. However, the only statutory provision that EPA cites for this alleged authority is the requirement in section 303(d) that a TMDL be "established at a level necessary to implement the applicable water quality

[4] "New Policies for Establishing and Implementing Total Maximum Daily Loads" (1997) (noting that "Section 303(d) does not establish any new implementation authorities beyond those that exist elsewhere in State, local, Tribal, or Federal law").

standard." *Id*. EPA claims that "[d]ocumenting adequate reasonable assurance increases the probability that regulatory and voluntary mechanisms will be applied such that it achieves the pollution reduction levels specified in the TMDL and therefore attains WQS." *Id.* This statement does not support any assertion of authority to require reasonable assurance. The TMDL is merely the sum of the load allocations and the wasteload allocations for a pollutant. The statute requires that the TMDL be set at a "***level***" necessary to meet water quality standards. A level is a number. Nothing in the statute gives EPA the authority to judge how that number is assigned or divided. Whether a TMDL is achieved is part of the development process. How a TMDL is achieved is an implementation issue left to the exclusive authority of the states, given their primary authority and expertise over on-the-ground permitting and management decisions.

EPA acknowledges that its entire "accountability framework" is "not itself an *approvable* part of the TMDL." Draft TMDL, at 7-4 (emphasis in original). We commend EPA for acknowledging this fundamental limitation in its TMDL authority.

C. EPA Cannot Require States To Take Specific Implementation Measures.

We do not think it is appropriate for EPA to threaten consequences against the states as a means of coercing or compelling them to take EPA's preferred implementation approach. In other words, having conceded that it lacks authority to approve state implementation plans, EPA cannot dictate what states put into their plans. In the Draft TMDL, EPA cautions that unless states "[d]evelop and submit Phase I, II, and III WIPs consistent with the expectations and schedule described in EPA's letter of November 4, 2009, and the amended schedule described in EPA's letter of June 11, 2010," EPA will take one or more punitive actions as outlined in a December 29, 2009, letter to watershed jurisdictions. Draft TMDL, at 7-11 to 7-12. We are concerned that this type of threat will undermine the concept of cooperative federalism that is the hallmark of the CWA.

Under the CWA, authorized states carry out CWA programs in that state. EPA does not dictate the terms of how water quality standards are to be met. With respect to point sources, if EPA believes that a state is not administering the CWA permitting program properly, EPA may withdraw approval of the state program. 33 U.S.C. § 1342(c)(3). With respect to nonpoint sources, as noted by the Ninth Circuit in *Pronsolino*, the only leverage EPA has over states is the threat to withhold federal funding. *Pronsolino,* 291 F.3d at 1140.

Notwithstanding the limits of its authority under the nature and structure of the CWA, EPA is threatening a wide variety of actions to seek to coerce states to

adopt EPA's TMDL implementation approach. Each of these proposed actions is discussed below.

1. EPA threatens to withhold federal grant funding from states. EPA gives grants to states pursuant to an authorization by Congress. Congress generally spells out the purpose and terms of the grant. EPA has no authority to redirect or withhold certain grants, particularly those that are allocated based on a statutory or regulatory formula such as title VI state revolving loan fund grants and section 106 program implementation grants. Even for other grant monies, EPA cannot arbitrarily choose to withhold state funding because it does not like a state's WIP. Congress appropriates money for specific purposes. For example, funding for nonpoint source management programs under section 319 of the CWA is conditioned on a state's development of a nonpoint source management program, not a WIP to implement a federal TMDL.[5] EPA must implement Congressional appropriations as Congress intends and lacks the authority to redirect appropriated monies to carry out its own agenda.

2. EPA threatens to regulate unregulated stormwater sources under its residual designation authority (33 U.S.C. § 1342(p)(2)(E)) if it disagrees with a state's WIP. This interpretation turns the CWA's stormwater regulatory structure on its head. Congress established a general rule that EPA could not require permits for stormwater discharges. 33 U.S.C. § 1342(p)(1). Congress then created exceptions to the general rule for certain types of stormwater discharges. 33 U.S.C. § 1342(p)(2). In contrast to the statutory framework, EPA's approach in the TMDL flips the statutory presumption against regulation and assumes all stormwater is regulated.

EPA has some authority to designate additional stormwater point sources and require them to obtain permits, but that authority is limited by the statute. Specifically, that authority is predicated upon a finding that controls are needed for a specific discharge based on the wasteload allocations of a TMDL, or based on a determination that a specific discharge or category of discharges in a specific geographic area contributes to the violation of a water quality standard or is a significant discharge that is contributing pollutants to waters of the United States. 40 C.F.R. 122.26(a)(9)(i)(C)-(D). In short, using residual designation authority requires a site-specific determination. EPA will not be able to rely on its Watershed Model to make these determinations, because (as discussed below) the model cannot predict water quality impacts at the individual facility or local level. Thus, EPA will have to develop site-specific data before it can designate additional stormwater sources for regulation, beyond those identified by Congress as appropriate for regulation in CWA § 402(p)(2)(A)-(D). EPA has no

[5] Congress gave EPA authority to withhold section 319 funding under specific conditions identified under section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990. Those conditions relate to coastal zone management programs which are distinct from the state WIPs at issue here.

authority to designate stormwater runoff for regulation because EPA does not agree with a state's WIP.

3. EPA claims that it will object to point source permits in a state if it disagrees with a state's WIP. For sources that are already subject to the CWA permitting program, and that require a new permit or a permit renewal, EPA does have the authority to object to a permit "as being outside the guidelines and requirements of this Act." 33 U.S.C. 1342(d)(2). Grounds for objecting to a state permit are found in 40 C.F.R. 123.44. Disagreeing with a state WIP is not one of the specified grounds. While a permit must be consistent with the wasteload allocations of a TMDL, states have exclusive authority to make permitting decisions based on those allocations. EPA may review these decisions but may not object without evidence that they fail to assure compliance with the TMDL and water quality standards.

4. EPA claims the authority to require net improvement offsets for new or increasing discharges if it disagrees with a state WIP. We agree with EPA that offsets are a tool that is available to demonstrate compliance with the WLAs and LAs of a TMDL. However, states have primary authority to determine offset requirements and that once offsets are applied through permits, EPA has no authority to disapprove of the offset absent a showing that the permit is inconsistent with the CWA. The CWA requires effluent limitations to ensure that discharges do not cause or contribute to the violation of water quality standards. A net improvement requires a source to over-control, beyond what is needed to avoid causing or contributing to a violation. We agree that a source may voluntarily over-control, to create an offset. However, nothing in the CWA allows EPA to object to a permit in order to compel a source to control discharges beyond what is necessary to ensure that the specific discharge does not cause or contribute to a violation of a water quality standard.

5. EPA threatens to impose "finer-scale" allocations in the final TMDL. "EPA is … replacing some allocations proposed by jurisdictions; EPA is also providing finer level of detail for allocations in headwater jurisdictions….." Draft TMDL, at 8-2. In fact, EPA has proposed allocations for 1006 individual residences. Draft TMDL, Appendix Q. As discussed above, a TMDL is merely the sum of the load allocations and the wasteload allocations. In 2002, the Ninth Circuit upheld EPA's authority to issue a TMDL for a water body impaired only by nonpoint sources because the Court considered the TMDL to be merely "an informational tool." *Pronsolino*, 291 F.3d at 1140. The Court also recognized that specifying pollutant allocations at a fine scale is tantamount to TMDL implementation. According to the Ninth Circuit, the TMDL at issue in *Pronsolino* was within EPA's authority because:

> [It] does ***not*** specify the load of pollutants that may be received from particular parcels of land or describe what measures the

> state should take to implement the TMDL. Instead, the TMDL expressly recognizes that 'implementation and monitoring' 'are state responsibilities' and notes that, for this reason, the EPA did not include implementation or monitoring plans within the TMDL. *Id*. (emphasis added).

To the extent that the Draft TMDL goes beyond an "informational tool" by including implementation measures and specifying pollutant loadings at a fine scale (such as at individual sites), it goes beyond EPA's authority under the CWA.

6. EPA threatens to require additional reductions from point sources if it does not agree with a state's WIP. The CWA requires that a TMDL be set at a level necessary to achieve applicable water quality standards. 33 U.S.C. 1313(d); *see also* 33 U.S.C. § 1313(b)(1)(C) (requiring effluent limitations "necessary to meet water quality standards"). The statute does not limit a state's discretion to calculate and assign wasteload and load allocations within the TMDL. However, it does not follow that EPA has the same discretion as states. If a water body is impaired by both point sources and nonpoint sources and water quality standards cannot be met through reductions from point sources alone, then EPA cannot claim that more stringent wasteload allocations are "necessary" to achieve water quality standards. As noted in EPA's 1997 Guidance, in a watershed like the Chesapeake Bay, where a significant amount of the impairment may be from nonpoint sources:

> TMDL implementation may involve individual landowners and public or private enterprises engaged in agriculture, forestry, or urban development. The primary implementation mechanism will generally be the State section 319 nonpoint source management program coupled with State, local, and Federal land management programs and authorities. 1997 Guidance.

Further reductions from point sources are not required under the CWA when they will not achieve attainment of water quality standards. It is inappropriate for EPA to threaten such reductions rather than following its own guidance and working with states to achieve nonpoint source reductions through section 319 nonpoint source management plans and "State, local, and Federal land management programs and authorities."

7. EPA threatens to establish numeric nutrient criteria in a state if EPA disagrees with a state WIP. However, EPA's authority to issue federal numeric nutrient standards is limited. CWA section 303(c)(4) authorizes EPA to issue a new or revised water quality standard in a state only if EPA determines that a new or revised state standard is not consistent with the applicable requirements of the Act, or if EPA determines that a new or revised standard is

necessary to meet the requirements of the Act. 33 U.S.C. 1313(c)(4). EPA has approved the water quality standards in the Chesapeake Bay states (some modifications are pending). In fact, the currently applicable water quality criteria for the Chesapeake Bay are based in substantial part on EPA's own recommended criteria. "Ambient Water Quality Criteria for Dissolved Oxygen, Water Clarity and Chlorophyll a for the Chesapeake Bay and Its Tidal Tributaries" (EPA, Apr. 2003). EPA has no basis to determine that federal standards are necessary because it does not agree with a jurisdiction's WIP. Thus, it cannot use this threat to coerce a state into changing its WIP.

8. Finally, EPA is threatening to increase enforcement activity in states that do not submit a WIP that garners EPA's support. While we appreciate that the federal government enjoys and exercises broad enforcement discretion, we do not believe that it is appropriate for EPA to threaten states (or regulated communities and entities) with increased enforcement for reasons not directly connected to compliance with applicable laws.

D. EPA Cannot Force States To Undertake Specific Implementation Measures By Making Assumptions in the TMDL.

Through its backstop allocations in section 8 of the Draft TMDL, EPA is already threatening to impose "consequences" and undertake the implementation measures discussed in subparagraph C, above. To support these proposed actions, EPA cites the regulatory provision requiring water quality based effluent limitations in permits to be "consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to 40 C.F.R. 130.7."[6] In section 8 of the Draft TMDL, EPA states that: "This section summarizes the assumptions that are incorporated into the Chesapeake Bay TMDL allocations in a TMDL." EPA then proceeds to use the word "assume" or "assumption" 59 times in an attempt to bootstrap its permitting regulations into a mechanism to compel a watershed jurisdiction to undertake specific implementation measures. These assumptions include the use of residual designation authority (discussed above) and the expansion of the CWA permitting program through new regulations.[7]

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[6] 40 CFR 122.44(d)(1)(vii)(B). Of course, the Chesapeake Bay TMDL will not be approved by EPA pursuant to 40 C.F.R. 130.7 because this TMDL is not being developed by states. Thus, it is uncertain what legal effect this regulation will have with respect to permits for point sources in the Chesapeake Bay watershed. Arguably, it has no effect.

[7] For example, EPA cites its intent to develop new stormwater regulations to support the assumptions underlying its backstop allocations. Draft TMDL, at 8-10 to 8-11. Of course, EPA cannot prejudge the outcome of a rulemaking in the Draft TMDL so it cannot rely on its intent to do rulemaking as support for its backstop allocations.

We assume that, in section 8, EPA is attempting to give itself authority to object to state permits that do not incorporate EPA's proposed regulatory requirements. However, nothing in the CWA or EPA regulations gives EPA the authority to use its permitting regulations to compel state regulatory action. In fact, such authority would violate the 10th Amendment to the U.S. Constitution. In *New York v. United States,* 505 U.S. 144 (1992), the Supreme Court struck down a provision of federal law that required States to provide for the disposal of radioactive wastes. The Court held that Congress may not "commandeer the legislative processes of the States by directly compelling them to enact and enforce a federal regulatory program. *Id*. at 161. In other words: "While Congress has substantial power to govern the Nation directly,…the Constitution has never been understood to confer upon Congress the ability to require the States to govern according to Congress' instruction." *Id*. at 162. Accordingly, the Clean Water Act and 40 C.F.R. 122.44(d)(1)(vii)(B) cannot be read to give EPA authority to make "assumptions" that a state will enact and enforce a regulatory program, and then try to enforce that "assumption" through the CWA permitting program.

For example, in section 8 of the Draft TMDL, EPA assumes much greater reductions from wastewater treatment plants than those put forth in the state WIPs. For wastewater, EPA's backstop allocations assume controls achieving 4 mg/L TN and 0.3 mg/L TP based on design flows in Virginia, and the limit of technology or 3 mg/L TN and 0.1 mg/L TP in West Virginia, New York, Pennsylvania, and Delaware, Draft TMDL, at 8-14, 8-16. EPA also is asserting the authority to impose "full" backstop allocations that would require wastewater treatment plants to achieve 3 mg/L TN and 0.1 mg/L TP based on average current flow from 2007 to 2009, not design flow. Draft TMDL, at 8-17. As individual sources and communities have pointed out, achieving these reductions will cost billions of dollars and are not economically feasible. Further, if EPA establishes WLAs based on current flows rather than design flows, EPA will take away any opportunity for a community to grow, forcing population growth and economic development into open space, contrary to smart growth principles.

For stormwater in Virginia, West Virginia, New York, Pennsylvania, and Delaware, EPA's backstop allocations assume that states have incorporated conditions into MS4 permits that would result in significant reductions in sediment and nutrient runoff through a combination of retrofitting and redevelopment requirements covering 50 percent of developed lands. Draft TMDL, at 8-15. According to EPA, over 7 percent of the 64,000 square mile Chesapeake Bay watershed is developed and recent United States Geological Service data indicate that the amount of developed land may be twice what EPA has assumed in the Draft TMDL. *See* http://archive.chesapeakebay.net/pubs/calendar/47751_10-28-10_Handout_2_11032.pdf . Retrofitting 4480 square miles of area is not feasible. In fact, EPA has suggested that it would cost $7.9 billion a year. See The Next Generation of Tools and Actions to Restore Water Quality in the

Chesapeake Bay: A Revised Report Fulfilling Section 202a of Executive Order 13508, at 24. As noted below, Hampton Roads, Virginia, estimates that meeting the retrofitting requirements of the backstop allocation would cost its community $679 million a year.

EPA's backstop allocations in section 8 of the Draft TMDL are either technologically or economically infeasible and EPA cannot force watershed jurisdictions to adopt these allocations.

E. Before Issuing a Final TMDL EPA Should Complete the Use Attainability Analysis for The Chesapeake Bay to Demonstrate that Applicable Water Quality Standards are Achievable.

Under the CWA, states are directed to establish TMDLs for impaired waters at a level necessary to meet applicable water quality standards. 33 U.S.C. § 1313(d)(1)(C). Even if EPA had the authority to establish a TMDL for the entire Chesapeake Bay, EPA cannot establish a TMDL that cannot attain water quality standards. For some water body segments, standards cannot be met even if EPA assumes that the Chesapeake Bay Watershed returns to pre-development conditions. For other water body segments, meeting water quality standards would result in substantial and widespread economic and social impacts. For these reasons, EPA should complete a use attainability analysis (UAA) for the Chesapeake Bay before establishing a final Chesapeake Bay TMDL.

1. The Clean Water Act Does Not Require Meeting Water Quality Standards That Are Technically or Economically Infeasible

The Clean Water Act does not require control measures to achieve water quality standards that are not technically or economically feasible. For this reason, EPA's water quality standards regulations provide a relief valve: a use attainability analysis or UAA. 40 C.F.R. § 131.10(g). If the designated use of a water body cannot be attained due to reasons such as human caused conditions that cannot be remedied (40 C.F.R. § 131.10(g)(3)), hydrologic modifications such as dredging or dams (40 C.F.R. § 131.10(g)(4)), natural conditions such as depth (40 C.F.R. § 131.10(g)(5)), or the need for controls that would result in substantial and widespread economic and social impact (40 C.F.R. § 131.10(g)(6)), then a designated use may be changed.

In 2003, EPA provided technical support for a Maryland UAA based on natural conditions in certain deep channels in the Chesapeake Bay. Maryland also developed a UAA for a federal navigation channel based on hydrologic modifications. In 2009, EPA began a UAA for the Chesapeake Bay to determine what water quality standards were feasible based on human caused conditions, natural conditions, and economic and social impacts. EPA's original intent was to complete that UAA before issuing the Draft TMDL. The purpose of the planned UAA

was two-fold. One purpose was to determine if EPA could develop a TMDL for the Chesapeake Bay that would, in fact, meet water quality standards. The second purpose was to determine if those standards needed to be changed based on the factors set forth in EPA regulations, including economic factors. *See* Chesapeake Bay Program, Water Quality Steering Committee, January 12, 2009, Conference Call, Summary of Decisions, Actions, and Issues, at 4; Chesapeake Bay Program, Water Quality Steering Committee, Advance Briefing Materials for the January 12, 2009, Conference Call, Attachment C, Proposed Gameplan for Preparing for the Bay UAA, at 2. The decision to include an economic analysis of affordability as part of a UAA was reiterated at the February 9, 2009, conference call among Water Quality Steering Committee members. *See* Chesapeake Bay Program, Water Quality Steering Committee, February 9, 2009, Conference Call, Summary of Decisions, Actions, and Issues, at 5. As part of this effort, the Chesapeake Bay Program sought to develop a scenario called "Maximum Extent Feasible" or MEF. The MEF scenario was intended to aid a UAA and was defined as an effort to quantify the "do-ability" of achieving various nutrient controls in the Chesapeake Bay, taking into account technical achievability, operational achievability, and financial achievability. *See* Chesapeake Bay Program, Water Quality Steering Committee, March 9, 2009, Conference Call, Summary of Decisions, Actions, and Issues, at 1.

Inexplicably, at the April 15-16, 2009, meeting of the Chesapeake Bay Water Quality Standards Steering Committee, EPA announced that it had reversed its position and now believed that Chesapeake Bay water quality standards should remain unchanged and that no UAA was needed. EPA asserted that it would look at the need for a UAA at some point around ten years in the future, well ***after*** the TMDL is established. *See* Chesapeake Bay Program, Water Quality Steering Committee, April 15-16, 2009, Meeting, Summary of Decisions, Actions, and Issues, at 2-3. EPA's decision ignores the fact that one purpose of the UAA was to determine if water quality standards were achievable, because the statute requires that a TMDL achieve standards. In fact, as discussed below, it is clear that the TMDL cannot achieve Chesapeake Bay water quality standards.

2. **Meeting Water Quality Standards for the Chesapeake Bay is not Technically Feasible.**

EPA's model shows persistent 1% nonattainment of water quality standards, no matter what assumptions are made. In fact, EPA admits there are 11 segments that cannot meet water quality standards. Draft TMDL, at 6-36. EPA also admits that it cannot determine if the current criteria for dissolved oxygen are sufficiently protective of water quality.

> It is difficult to comprehensively evaluate the protectiveness of the assessed criteria strictly based on monitoring data, because the unassessed criteria cannot be directly evaluated due to insufficient data or lack of published assessment protocols. A multi-partner

effort is underway to develop criteria assessment protocols based on the available data, but those protocols will not be complete, peer reviewed and published until 2011 at the earliest. Draft TMDL, App. D, at 1.

It follows *a priori* that if EPA is unable to evaluate the adequacy of dissolved oxygen criteria "due to insufficient data or lack of published assessment protocols" then the Draft TMDL is flawed because it cannot meet water quality standards. Indeed, EPA admits that it cannot demonstrate attainment under any scenarios for some water bodies. Draft TMDL, at 6-53. Despite this admission, in section 9 EPA proposes a TMDL based on those unattainable standards. Such a TMDL does not meet the requirements of the CWA.

It is particularly important for EPA to determine whether the dissolved oxygen criteria for the Bay are appropriate and achievable because it appears that many of the reductions required by the Draft TMDL are being driven by dissolved oxygen levels in 4 deep channel segments. Draft TMDL, at 6-13. For dissolved oxygen, all of the other 88 segments would achieve water quality standards with higher loadings. A UAA could establish a basis for determining whether meeting these dissolved oxygen standards is appropriate, or if the standards should be changed.

3. EPA Should Determine If the Draft TMDL Would Result in Substantial and Widespread Economic and Social Impact.

One basis for changing water quality standards is a demonstration that meeting the standards would cause substantial and widespread economic and social impacts. 40 C.F.R. 131.1(g)(6). EPA should determine whether meeting water quality standards in the Chesapeake Bay would have this result.

In fact, we believe that EPA has already acknowledged that controls needed to implement the backstop allocations in section 8 would result in such impacts. These allocations rely in part on an "E3" level of effort. E3 is a theoretical scenario based on implementation of "everything, by everyone, everywhere." EPA itself has said E3 is not a realistic scenario. "There are no cost and few physical limitations to implementing BMPs for point and nonpoint sources in the E3 scenario." Draft TMDL, App. J, at J-4. "Generally, E3 implementation levels and their associated reductions in nutrients and sediment could ***not*** be achieved for many practices, programs and control technologies when considering physical limitations and required participation levels." *Id*. at J-4 to J-5 (emphasis added).

We believe that it is likely that a UAA would demonstrate that the economic and social impacts of meeting Chesapeake Bay water quality standards will be substantial and widespread. EPA itself has estimated the cost of retrofitting developed areas to capture stormwater runoff to be $7.9 billion a year. *See* The Next Generation of Tools and Actions to Restore

Water Quality in the Chesapeake Bay: A Revised Report Fulfilling Section 202a of Executive Order 13508, at 24. The Hampton Roads Planning District Commission estimates that meeting the retrofitting requirements in the Draft TMDL would cost the ratepayers of the Hampton Roads MS4 alone $679 million annually. *See* http://www.dailypress.com/news/military/dp-nws-chesapeake-bay-report-20101030,0,7533311.story. The New York State Department of Environmental Conservation estimates that meeting EPA's backstop allocations in the part of the Chesapeake Bay watershed that lies within New York State will cost between $3 billion and $6 billion. *See* http://www.newschannel34.com/news/local/story/DEC-on-Proposed-EPA-Regulations/Xl7f-E5ImUODw2tn3MhaYQ.cspx. Officials from the panhandle of West Virginia estimate the cost of wastewater treatment plant upgrades in their communities required under EPA's Draft TMDL to be between $180 million and $240 million. *See* http://www.journal-news.net (accessed Nov. 5, 2010).

EPA should consider all of the economic and social impacts of the Draft TMDL before establishing a final TMDL. Further, the Agency should be transparent about the incremental costs and benefits of meeting water quality standards in every reach of every water body all the time. An analysis of those costs may demonstrate that there is a point where the costs of achieving those last few days of attainment outweigh the benefits (typically referred to as the "knee of the curve"). In fact, it may be possible to meet most of the water quality goals for the Chesapeake Bay most of the time, without resulting in significant and widespread impacts. However, EPA has not provided policy makers or the public with information to support such an analysis or even evaluate the benefits and costs of the reductions proposed in the Draft TMDL. It should do so before establishing a final TMDL.

4. **EPA Should Take a More Iterative Approach to Establishing TMDLs for the Chesapeake Bay**.

We agree with EPA's support for adaptive management in the TMDL process and EPA's recognition that changes will have to be made to the TMDL. However, we remain concerned that the standards that the Draft TMDL is intended to meet are unattainable (or, at the very least, not demonstrated in the record to be attainable). Assuming those standards are unattainable from a socio-economic perspective, then no amount of adaptive management will be sufficient to overcome the core need for a UAA for the watershed. We recommend that EPA employ adaptive management in the Chesapeake Bay by focusing on attaining water quality in individual impaired segments, as contemplated by the CWA. Further course corrections can be made if meeting standards in those segments fails to achieve water quality standards in the Bay itself. This approach would allow EPA to first identify the immediate, near-term reductions that will improve water quality in individual segments, and then project improvements to the Bay's water quality based on additional data collection and modeling refinements, as those continue to be

developed. Such an approach would allow for reasonable forward progress in the face of uncertainty.

II. The Notice-and-Comment Process Associated with the Draft TMDL Has Been Incomplete (Due To Missing Information) and Inadequate (Due To Insufficient Time).

A. EPA Has Not Provided A Meaningful Opportunity to Comment on the Draft TMDL.

The APA requires agencies to provide the public with the opportunity to comment on their actions. 5 U.S.C. 553(c). In order to provide for meaningful public comment under the APA, agencies must disclose the data or other material that the agency relies on to make a final decision. Participation is not meaningful if an agency bases its action on information that is not available to the public. *United States v. Nova Scotia Food Prods. Corp*., 568 F.2d 240 (2d Cir. 1977). Courts will consider what steps the agency took to apprise interested persons of important data or information related to the rulemaking. *See, e.g., Portland Cement Ass'n v. Ruckelshaus*, 486 F.2d 375 (DC Cir. 1973), *cert. denied*, 417 U.S. 921 (1974) ("it is not consonant with the purposed of a rule-making proceeding to promulgate rules on the basis of inadequate data, or on data that, in critical degree, is known only to the agency."). An agency must be able to support a final action (such as establishing a TMDL) based on evidence in the administrative record that it compiles. *Motor Vehicle Mfrs. Ass'n v. State Farm Mutual Insurance Co.* 463 U.S. 29 (1983). In reviewing an agency decision, a court will only look at information that is in the record. *Florida Power & Light Co. v. Lorion*, 470 U.S. 729, 743-44 (1985).

Among the most significant pieces of information relied upon by EPA to develop the Draft TMDL are the inputs to and outputs from a model called "Scenario Builder." EPA relied on these inputs to determine the assumptions under which the model predicts that water quality standards will be met. EPA then incorporated those assumptions into the Draft TMDL. *See* Draft TMDL, section 8 & Appendix H.

> Scenarios representing different nutrient and sediment loading conditions were run using the Chesapeake Bay Phase 5.3 Watershed Model and the resultant model scenario output was fed as input into the Chesapeake Bay Water Quality Model to evaluate the response of critical water quality parameters, specifically dissolved oxygen, water clarity, underwater bay grasses and chlorophyll *a*. Draft TMDL, Appendix H, at 1.

For EPA's backstop allocations, EPA used the same process in reverse, first establishing the allocations, and then trying to find a combination of scenarios that could achieve the allocations:

> After applying all the backstop allocations that EPA determined were necessary, EPA ran the combination of specific practices and allocations through the Scenario Builder, Watershed Model and WQSTM to ensure that the allocations provided in the Chesapeake Bay TMDL would result in attainment of WQS. Draft TMDL, at 8-5.

To allow for meaningful public review of the Draft TMDL, EPA must make available to the public the data and scenario results that are the inputs and outputs of the "Scenario Builder" model that provides inputs to the Chesapeake Bay Watershed model. Unfortunately, EPA has not done so.

The Draft TMDL purports to provide information on Scenario Builder: "Additional information related to Scenario Builder and its application in Bay TMDL development (USEPA 2010d) is at http://www.chesapeakebay.net/modeling.aspx?menuitem=19303". Draft TMDL, at 4-33 and 5-26. No information on Scenario Builder is available at that link. By chance, we located a link to the Scenario Builder documentation in the caption to figure 5-12 on page 5-26 of the Draft TMDL. *See* C. Brosch, "Estimates of County-Level Nitrogen and Phosphorus Data For Use in Modeling Pollutant Reduction, Documentation for Scenario Builder Version 2.2 (September 2010) (hereinafter Brosch 2010). However, that documentation does not provide the specific inputs to and outputs from the model that were relied upon by EPA to develop the TMDL, as described above. Further, that document makes it clear the Scenario Builder model is not available for public review. In fact, it is still under development. Brosch 2010, at 8.

Watershed jurisdictions may have been provided with scenario inputs and outputs when they were developing their draft WIPs. However, that information is not available to the public on any of the websites that are referenced in the Draft TMDL. In fact, EPA's primary modeling website states that scenario data and Phase 5 scenario results are "coming soon." *See, e.g.,* http://ches.communitymodeling.org/models/CBPhase5/index.php (accessed November 8, 2010).

Further, while EPA has provided outside reviewers with the code for its Watershed Model, it has provided no opportunity to review the Scenario Builder model, even though that model provides all the inputs to the Watershed Model. Thus, no one outside of EPA has had the opportunity to evaluate the Scenario Builder model by running it themselves. Instead, it is a black box.

On November 2, 2010, six days before the end of the comment period for the Draft TMDL, James Curtin of EPA's Office of General Counsel made links to the scenario data and scenario results available to four persons, via an email. On the same date, Jim Edwards of EPA's Chesapeake Bay Program Office sent an email to representatives of states, federal agencies, universities, and others

who have been participating in the TMDL development process regarding the availability of the Scenario Builder information. However, the links to the Scenario Builder inputs and outputs and the code for the model have not made available in the administrative record for the Draft TMDL and are not on EPA's website for the Draft TMDL. The November 2, 2010, email from Mr. Curtin does not cure EPA's failure to provide the public with notice of and a meaningful opportunity to comment on the Draft TMDL.

EPA's failure to make adequate information about this important model available for public review is not only a violation of the APA, but it also violates the agency's own regulations at 40 C.F.R. 130.7(c)(1)(ii), which require that calculations used to establish TMDLs be subject to public review. To cure these deficiencies in providing the public with notice of and an opportunity to comment on the Draft TMDL, EPA must make the Scenario Builder model, as well as all the inputs and outputs used to develop the Draft TMDL, *publicly* available and reopen the comment period to allow for ***public*** review on this critical information.

Even if EPA had made appropriate information available to the public, 45-days is an insufficient public comment period. While the APA does not specify a minimum period for comment, Executive Order 12,866 provides that most rulemakings "should include a comment period of not less than 60 days." Exec. Order No. 12,866 § 6(a). In fact, agencies often provide greater than 60 days for complex or controversial rules, of which the Draft TMDL is both (the Draft TMDL that is out for public review consists not only of the 370 pages of the Draft TMDL document, but also the 1672 pages of the 22 appendices, as well as the technical analysis and modeling information that is referenced throughout the draft TMDL).

B. The Models Underlying the TMDL Need Further Refinement Before They Can Be Used For Regulatory Purposes.

1. Reliance on a flawed model is arbitrary and capricious under the APA.

When finalized, the Chesapeake Bay TMDLs will be reviewable in district court under the APA as final agency actions. *Longview Fibre Co. v. Rasmussen*, 980 F.2d 1307 (9th Cir. 1992). Under the APA, a court shall "set aside agency action, findings, and conclusions found to be arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). Agency action is considered arbitrary or capricious if the agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise. Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 43 (1983).

Reliance on a flawed model that produces inaccurate results is considered arbitrary and capricious under the APA. If EPA's model bears "no rational relationship to the reality it purports to represent," it is arbitrary and capricious. *Columbia Falls Aluminum Co. v. EPA*, 139 F.3d 914, 923 (D.C.Cir.1998) (citations omitted) (finding EPA's decision to set a treatment standard using the toxicity characteristic leaching procedure model to be arbitrary when EPA admitted that it is not a good model for disposal conditions to which the hazardous waste at issue would be subject). To avoid arbitrary decision-making when using a model, there must be a rational connection between the factual inputs, the modeling assumptions, the modeling results and the conclusions drawn from these results. *Sierra Club v. Costle,* 657 F.2d 298, 332-33 (D.C.Cir.1981). A reviewing court also will reverse an agency action that relies on a model, "if the model is so oversimplified that the agency's conclusions from it are unreasonable." *Appalachian Power Co. v. EPA,* 249 F.3d 1032, 1052 (D.C. Cir. 2001) (citations omitted).

When a model is challenged, EPA must provide a full analytic defense. *Eagle-Picher Indus., Inc. v. U.S. EPA*, 759 F.2d 905, 921 (D.C.Cir.1985). EPA must be able to explain the assumptions and methodology used in preparing the model. *Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 535 (D.C. Cir. 1983). EPA's TMDL model is flawed and indefensible.

Finally, a reviewing court will consider whether or not a model was subject to full public review when determining whether it is arbitrary and capricious. As found in *Sierra Club:* "The safety valves in the use of such sophisticated methodology are the requirement of public exposure of the assumptions and data incorporated into the analysis and the acceptance and consideration of public comment, the admission of uncertainties where they exist, and the insistence that ultimate responsibility for the policy decision remains with the agency rather than the computer. *Sierra Club v. Costle,* 657 F.2d 298, 332-33 (D.C.Cir.1981).

If EPA continues to insist on establishing TMDLs for the Chesapeake Bay watershed based on models that have inputs and assumptions that are not rationally connected to the results and conclusions; that have no rational relationship to the reality they are supposed to represent, and that have not been subject to full public review, while failing to admit the model's uncertainties, the final TMDLs will be arbitrary and capricious.

2. EPA is aware that it is relying on inaccurate information.

While EPA initially claims that its model is "accurate and reliable," Draft TMDL at 5-1, it later admits that its models are uncertain "best estimates." Draft TMDL, at 5-15. In addition, EPA does not plan to address inaccuracies in its models before finalizing the TMDL on December 31, 2010. *See* letter dated June 11, 2010, from Shawn Garvin, Regional Administrator, EPA Region III, to the Principal's Staff Committee (discussing EPA's plans to update the model to address known flaws in

2011, *after* the TMDL is established).

To justify its planned action, EPA states that: "In no case, does EPA anticipate any likelihood of a jurisdiction 'over-controlling' between now and 2017 in this first phase of planning and implementation." *Id*. This statement completely ignores the fact that the Draft TMDL includes 480 pages of individual allocations to thousands of sources and that, for point source dischargers, those allocations will have real regulatory consequences. Those consequences will occur immediately for any source that needs a new permit or needs to renew a permit. Hence, the final TMDL that EPA issues on December 31, 2010, will have an immediate and direct impact on dischargers in the Chesapeake Bay watershed, and invariably will "over-control" some sources.

Based on the limited information available for public review, we are very concerned that the inputs to EPA's Watershed Model do not accurately reflect pollutant loadings to the Chesapeake Bay.

For example, based on recent United States Geological Service (USGS) data, the amount of impervious surface in the watershed may be more than twice as much as what EPA has assumed in its model. *See* http://archive.chesapeakebay.net/pubs/calendar/47751_10-28-10_Handout_2_11032.pdf .

States, which have had access to EPA's Scenario Builder inputs, also have identified errors in EPA's assumptions. For example, West Virginia found that EPA's model scenario inappropriately categorized loadings from an incomplete list of industrial stormwater sources. Draft West Virginia WIP, at 21. West Virginia also points out that EPA's model underestimates the extent of urban lands:

> This is a Bay-wide issue recognized as a significant technical flaw and will be rectified in the model that will be available for Phase II WIPs. This land use reconfiguaration, along with other planned "fixes" will necessitate model recalibration that will change pollutant loadings of all land uses. The grouped allocation will be recalculated, and may be distributed between regulated entities. Draft West Virginia WIP, at 26.

Virginia notes that the Watershed Model includes incorrect acreage for Virginia's three CSO communities and has incorrect CSO loads for Lynchburg. Draft Virginia WIP, at 50.

New York notes that: "There are a number of areas where the model does not include and/or does not fully account for fundamental conditions, practices and programs in New York." Draft New York WIP, at 38. For example, the Watershed Model fails to reflect the comprehensive nature of New York's MS4 and construction stormwater programs. *Id.* at 44.

Pennsylvania notes that subdividing loads into a finer scale (by county) "cannot be initiated until EPA completes revisions to the phase 5.3 Chesapeake Bay watershed model." Pennsylvania Draft WIP, at 7. According to New York, "[d]ue to past and potential future revisions of the draft nutrient and sediment load allocations and the short time frame to prepare this Draft Phase I WIP" "it is not practical to establish specific nutrient reduction expectations, such as Waste Load Allocations for individual discharges in this Draft Phase I WIP." Draft New York WIP, at 8.

Notwithstanding the fact that its model does not support such decisions, EPA has proposed a Draft TMDL that allocates loadings at a very fine scale. Draft TMDL, section 8 and Appendix Q. These fine-scale load allocations are not supported by data or EPA's models and thus are arbitrary and capricious.

Empirical research has demonstrated that the assumptions that EPA is using in its modeling are false. Dr. Kathy Boomer of the Smithsonian Environmental Research Center has compared sediment losses predicted by the Revised Universal Soil Loss Equation (RUSLE) with actual losses measured at over 100 locations in the Chesapeake Bay. Dr. Boomer found that the predicted losses exceeded the actual losses by over 100 percent. Dr. Boomer concludes that all variations of this model are not reliable tools for predicting sediment loss. Boomer et al.: USLE-based Empirical Models Fail to Predict Sediment Discharges, J. Environ. Qual. 37:79–89 (2008). Notwithstanding this definitive study, the Scenario Builder Model uses RUSLE to predict sediment losses from a variety of land uses. *See* Brosch 2010 (repeatedly citing RUSLE as a source of data).

EPA also obfuscates the inaccuracies in its model by failing to acknowledge its inherent uncertainty. External reviewers have repeatedly recommended that EPA acknowledge the uncertainty in its models. Scientific and Technical Advisory Committee, Chesapeake Bay Watershed Model Phase V Review (Feb. 20, 2008), at 3, 8 (hereinafter 2008 STAC review). Instead of acknowledging uncertainty, however, EPA claims that: "Because of the amount of data and resources taken to develop, calibrate, and verify the accuracy of the Bay models, the uncertainty of the suite of models is minimized." Draft TMDL, at 5-1. This is not a true statement.

EPA also claims that the Watershed Model has been calibrated. Draft TMDL, at iv. However, that is not true. At a September 9, 2010, meeting of the National Research Council committee that is tasked with evaluating Chesapeake Bay TMDL implementation, committee members raised the lack of calibration of the TMDL model as an issue. Committee Chair Dr. Kenneth Reckhow asked EPA why they did not follow the recommendations regarding model calibration made in reviews by previous NAS committees as well as the Chesapeake Bay Program Science and Technical Advisory Committee. *See* 2008 STAC review, at 3 (noting that the panel did not believe adequate calibration of the model had been achieved).

It is clear from the Draft TMDL itself that little actual calibration has occurred. For example, the water quality data used is based on data inputs to the SPARROW model from 1980, the early 1990s, and the late 1990s. EPA used the SPARROW model to estimate edge of stream data that was then used to calibrate the Chesapeake Bay watershed model. Draft TMDL, at 5-25. Thus, EPA is using results from one model to calibrate another.

Lack of calibration is due to insufficient data. The Chesapeake Bay watershed monitoring network measures the discharge of nutrient and sediment loads from only 85 sites in watersheds larger than 1,000 square kilometers. Draft TMDL, at 5-11.

All of the information about Chesapeake Bay water quality is modeled. The model outcomes were compared to observed data from 1991-2000. Draft TMDL, at 6-7. The calibration for dissolved oxygen and chlorophyll *a* is based on 1985 to 1994 data. *Id.* Thus, even where calibration to actual data occurred, it was not based on current data. This dearth of calibration using actual monitoring data calls into question all the outputs of the Chesapeake Bay Watershed model.

Finally, it appears that the Watershed Model does not include any inputs associated with groundwater, the 4.5 million cubic yards of sediment that is stirred up during navigation dredging each year, or vessel discharges. The model also does not include the benefits associated with filter feeders. These inputs could have a significant effect on the outputs of the model.

Significantly, EPA also has identified flaws in the results of its modeling and has chosen to ignore its modeled results when the model does not show attainment of water quality standards. But in all other instances where it suits EPA's policy direction, the agency presumes the model to be valid. Draft TMDL, at 6-11. It is arbitrary and capricious for EPA to rely on the model in certain situations but disregard it when convenient – such as ignoring nonattainment of water quality standards. If the model cannot be relied on in some instances, then there is no reason to assume it is valid for others.

III. Conclusion

To address the issues identified in these comments, we recommend that EPA substantially revise or withdraw the Draft TMDL and support the efforts of the watershed jurisdictions to improve water quality. This support should include not only funding, but also improved modeling and technical assistance to ensure that the implementation measures selected by states are well-designed, equitable, achievable, and will result in measureable water quality improvements.