UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
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Philadelphia, Pennsylvania 19103-2029

NOV 1 2017

Mr. D. Lee Currey, Director
Water and Science Administration
Maryland Department of the Environment
1800 Washington Blvd., Suite 540
Baltimore, Maryland 21230-1718

Dear Mr. Currey:

The U.S. Environmental Protection Agency (EPA), Region III, has conducted a complete review of Maryland's 2016 Section 303(d) List, and supporting documentation and information. Based on this review, EPA has determined that Maryland's list of water quality limited segments still requiring Total Maximum Daily Loads, meets the requirements of Section 303(d) of the Clean Water Act and EPA's implementing regulations. Therefore, with this letter, EPA hereby approves Maryland's 2016 Section 303(d) List. The statutory and regulatory requirements, and EPA's review of Maryland's compliance with each requirement, are described in the enclosure.

We commend you and your staff for the thorough work and exemplary effort in establishing the list and in responding to the comments received.

If you have any questions regarding this decision, please feel free to contact Ms. Evelyn S. MacKnight, Associate Director, at 215-814-5717, or Macknight.Evelyn@epa.gov.

Sincerely,

Catharine McManus, Acting Director
Water Protection Division

Enclosure

cc : Matthew Stover, MDE-WSA

EPA Region III Approval Rationale for Maryland's 2016 Section 303 (d) List

EPA has conducted a complete review of Maryland's 2016 Section 303(d) list and supporting documentation and information, which was submitted to EPA on March 13, 2017. Based on this review, EPA has determined that Maryland's list of water quality limited segments (WQLSs) still requiring Total Maximum Daily Loads (TMDLs) meets the requirements of Section 303(d) of the Clean Water Act ("CWA" or "the Act") and EPA's implementing regulations. Therefore, EPA hereby approves Maryland's Section 303(d) list. The statutory and regulatory requirements, and EPA's review of Maryland's compliance with each requirement, are described in detail below.

Statutory and Regulatory Background

Identification of WQLSs for Inclusion on Section 303(d) List

Section 303(d)(1) of the Act directs States to identify those waters within its jurisdiction for which effluent limitations required by Section 301(b)(1)(A) and (B) are not stringent enough to implement any applicable water quality standard, and to establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters. The Section 303(d) listing requirement applies to waters impaired by point and/or non-point sources, pursuant to EPA's long-standing interpretation of Section 303(d).

EPA regulations provide that States do not need to list waters where the following controls are adequate to implement applicable standards: (1) technology-based effluent limitations required by the Act; (2) more stringent effluent limitations required by State, local, or federal authority. See 40 CFR 130.7(b)(1). EPA's review and action on Maryland's 2016 list is generally consistent with EPA guidance, including *Guidance for 2006 Assessment, Listing, and Reporting Requirements Pursuant to Sections 303(d), 305(b), and 314 of the Clean Water Act* (July 29, 2005), and the memorandum titled "*Information Concerning 2016 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions*".

Consideration of Existing and Readily Available Water Quality-Related Data and Information

In developing Section 303(d) lists, States are required to assemble and evaluate all existing and readily available water quality-related data and information, including, at a minimum, consideration of existing and readily available data and information about the following categories of waters: (1) waters identified as partially meeting or not meeting designated uses, or as threatened, in the State's most recent Section 305(b) report; (2) waters for which dilution calculations or predictive modeling indicate non-attainment of applicable standards; (3) waters for which water quality problems have been reported by governmental agencies, members of the public, or academic institutions; and (4) waters identified as impaired or threatened in any Section 319 nonpoint assessment submitted to EPA. See 40 CFR 130.7(b)(5). In addition to these minimum categories, States are required to consider any other data and information that is existing and readily available.

While States are required to evaluate all existing and readily available water quality-related data and information, States may decide to rely or not rely on particular data or information in determining whether to list particular waters.

In addition to requiring States to assemble and evaluate all existing and readily available water quality-related data and information, EPA regulations at 40 CFR 130.7(b)(6) require States to include as part of their submissions to EPA, documentation to support decisions to rely or not rely on particular data, information, and decisions to list or not list waters. Such documentation needs to include, at a minimum, the following information: (1) a description of the methodology used to develop the list; (2) a description of the data and information used to identify waters; and (3) any other reasonable information requested by the Region.

Priority Ranking

EPA regulations also codify and interpret the requirement in Section 303(d)(1)(A) of the Act that States establish a priority ranking for listed waters. The regulations at 40 CFR 130.7(b)(4) require States to prioritize waters on their Section 303(d) lists for TMDL development, and also to identify those WQLSs targeted for TMDL development activities in the next two years. In prioritizing and targeting waters, States must, at a minimum, take into account the severity of the pollution and the uses to be made of such waters. See Section 303(d)(1)(A). As long as these factors are taken into account, the Act provides that States establish priorities. States may consider other factors relevant to prioritizing waters for TMDL development, including immediate programmatic needs, vulnerability of particular waters as aquatic habitats, recreational, economic, and aesthetic importance of particular waters, degree of public interest and support, and State or national policies and priorities. See 57 FR 33040, 33045 (July 24, 1992).

Analysis of Maryland's Submission

Identification of Waters and Consideration of Existing and Readily Available Water Quality-Related Data and Information

EPA has approved Section 303(d) lists submitted by Maryland including, but not limited to, Section 303(d) lists, for the years 1996, 1998, 2002, 2004, 2006, 2008, 2010, 2012 and 2014. To the extent that these prior lists have been incorporated into the 2016 Section 303(d) list, EPA's rationale for approving those lists remains operative. EPA's review of the 2016 Section 303(d) list focused on changes from the prior lists.

On December 23, 2016, Maryland Department of the Environment (MDE) public noticed the draft 2016 Section 303(d) list for a comment period of 32 days, from December 23, 2016 through January 23, 2017. The draft list was posted on several outlets including among others, MDE's internet world-wide-web, Maryland Register, and several of MDE's social media outlets (e.g. Facebook). MDE held an informational public meeting on January 9, 2017, at MDE Headquarters in Baltimore, Maryland. Comments were received in writing and all were responded to appropriately.

EPA received MDE's draft final 2016 Section 303(d) list package on March 13, 2017. The 2016 Section 303(d) package included: (1) an overview of the process for development of the 2016 Section 303(d) list; (2) surface water monitoring strategy, assessment units, the newly revised listing methodologies for the following kinds of data: toxics and bacteria, and links to the other listing methodologies used by MDE (all listing methodologies undergo public review, but further public comment was welcomed during the 303(d) list public comment period); (3) assessment results associated with biological impairments, toxics, bacteria, temperature, and solids from rivers/streams, lakes/ponds, estuarine and ocean waters; (4) the public process related to the 303(d) list; and (5) the integrated Section 305(b) report and Section 303(d) list, consisting of parts 2, 3, 4, and 5. MDE also provided a list of TMDLs approved (Table 37) and anticipated for completion for Fiscal Year 2017 and 2018 (Table 38 and 39, respectively). The package also included a responsiveness summary to comments received during the public review.

EPA has reviewed Maryland's description of the data and information it considered, its methodology for identifying waters, and additional information provided in response to comments raised by EPA and other parties. EPA concludes that the State properly assembled and evaluated all existing and readily available data and information, including data and information relating to the categories of waters specified in 40 CFR 130.7(b)(5).

In addition, the State provided its rationale for not relying on particular existing and readily available water quality-related data and information as a basis for listing waters.

In regards to the comments submitted to MDE during the public comment period, EPA notes that Waterkeepers Chesapeake incorporated by reference its members' comments on MDE's 2012 and 2014 Integrated Reports regarding moving the listing of 139 waterbody-pollutant combinations (for a total of 53 Chesapeake Bay tidal segments) from Part 5 (waters that may require a TMDL) to Part 4a (waters that are still impaired but have an approved TMDL) of Maryland's Integrated Report. These 139 Chesapeake Bay segment-pollutant combinations generally involve tidal portions of Chesapeake Bay tributaries that were classified as Chesapeake Bay segments in 2008. These Chesapeake Bay segment-pollutant combinations were moved from Part 5 to Part 4a because TMDLs were developed for the 139 Chesapeake Bay segment-pollutant combinations as part of the December 2010 Chesapeake Bay TMDLs[1]. MDE incorporated its previous responses to those comments by reference. EPA agrees with MDE's previous responses and with MDE's response to comments on the 2016 IR. EPA incorporates by reference its Decision Rationale in support of MDE's 2014 Section 303(d) list, which also addressed Waterkeepers' comments on this topic and adds the following supplemental discussion.

MDE's categorization of waters that have TMDLs on Part 4a of the Integrated Report rather than Part 5 is consistent with EPA guidance [Memorandum titled "*Information Concerning 2016 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions*"].

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[1] EPA agrees with MDE's observation that the December, 2010 action is more properly characterized as the "Chesapeake Bay TMDLs." While for ease of reference, the action is often referenced in the singular (i.e., "Chesapeake Bay TMDL"), the action consists of 276 separate TMDLs for 92 separate tidal waterbody segments adjoining the Chesapeake Bay.

Although not included in the 2016 Report, Part G of Maryland's 2014 Integrated Report summarizes the history of impairment listings that ultimately comprise Chesapeake Bay segments for which TMDLs were established by the December 2010 Chesapeake Bay TMDLs. Since at least 2004, MDE had informed the public of its intent to address certain 1996 and 1998 impairment listings through the Chesapeake Bay TMDL process, with further notice provided as part of the 2006 and 2008 Integrated Reports. In addition, the draft Chesapeake Bay TMDLs, which included TMDLs for the 139 Chesapeake Bay segment-pollutant combinations, were the subject of public notice and comment and extensive public outreach. See American Farm Bureau Federation v. U.S. Environmental Protection Agency, 984 F. Supp. 2d 289 (M.D. Pa. 2013), aff'd, 792 F.3d 291 (3d Cir. 2015).

The commenters assert that MDE needs to reverse its decision to remove 53 impaired segments of the Potomac River, Patuxent River, Patapsco River, and Gunpowder River watersheds (representing 139 pollutant-waterbody listings) from Maryland's Category 5 list of impaired waters needing TMDLs based on the commenters' view that the Chesapeake Bay TMDL is insufficiently protective of water quality within each Chesapeake Bay segment. The commenters re-assert their previous comment that "the Chesapeake Bay TMDL has less specific and stringent requirements than those MDE previously determined were needed to address impairments of local waterways."

With respect to the 139 waterbody-pollutant combinations for which the allocations set forth in the Chesapeake Bay TMDLs are the only applicable nutrient and/or sediment TMDLs, those waterbody-pollutant combinations were appropriately placed in Part 4a of the Integrated Report. To the extent the commenters feel the allocations established by the Chesapeake Bay TMDL are insufficiently protective, the Section 303(d) list is not the appropriate vehicle for that concern. The CWA does not require re-evaluation of established TMDLs as part of the Section 303(d) listing process. Regardless, in December 2010, EPA made a determination that the TMDLs established as part of the Chesapeake Bay process implement the water quality standards applicable to those segments. Accordingly, EPA determined that those TMDLs achieve "local" water quality standards.

Commenters appear to continue to base their broad conclusion that allocations in the Chesapeake Bay TMDLs are insufficiently stringent on a comparison of allocations set forth in a 1999 TMDL for nutrients established for the Port Tobacco River with allocations for some overlapping sources in the Chesapeake Bay TMDLs. The commenters fail to acknowledge that the 1999 Port Tobacco River TMDL was designed to achieve different water quality standards than those currently in effect. The allocations in the Chesapeake Bay TMDLs were designed to achieve the refined water quality standards for the tidal tributaries and embayments for dissolved oxygen, chlorophyll a, water clarity, and submerged aquatic vegetation (SAV). These refined standards were adopted by Maryland and approved by EPA between 2005 and 2010 and replaced the previously applicable water quality standards for those segments that are tidal and closely associated with the Chesapeake Bay.

As set forth in EPA's Decision Rationale for MDE's 2014 Section 303(d) list, the comparison between allocations in previously established TMDLs and those established as part of the Chesapeake Bay TMDLs varies from waterbody to waterbody and the commenters'

generalization does not apply. In its Decision Rationale for the 2014 Section 303(d) list, EPA cited, for example, the Manokin River (Chesapeake Bay segment MANMH), another waterbody for which a nutrient TMDL (for total nitrogen) was established prior to December 2010. The 2001 Manokin River TMDL was designed to achieve a different water quality standard than that adopted by Maryland and approved by EPA between 2005 and 2010. The 2001 Manokin River total nitrogen TMDL allocates a total annual nitrogen load to the waterbody of 353,680 lbs/year and gives an annual wasteload allocation to the Princess Anne Wastewater Treatment Plant of 30,685 lbs/year. By contrast, the December 2010 Chesapeake Bay TMDL allocation of total annual nitrogen load is lower than that of the 2001 TMDL (342,457 lbs/year) and gives a lower annual wasteload allocation to the Princess Anne Wastewater Treatment Plant (11,512 lbs/year). While other point source dischargers to the Manokin River were not considered significant and therefore were not given individual wasteload allocations in the Chesapeake Bay TMDL, EPA notes that the Eastern Correctional Institute (MD0066613), which received a WLA in the 2001 TMDL, was given an individual wasteload allocation under Maryland's Phase II Watershed Implementation Plan. That Phase II WIP allocation is comparable to the individual wasteload allocation to the Eastern Correctional Institute in the 2001 TMDL.

In conclusion, the commenters' generalized assumption that the TMDLs developed as part of the Chesapeake Bay TMDLs include less stringent allocations than would have been developed had TMDLs for each segment been developed outside the Chesapeake Bay process simply is incorrect.

In its 2016 IR response to comments, MDE addresses the specific waterbodies within the Choptank River identified in Waterkeeper's comments on the 2016 IR. MDE's response appropriately explains that the tidal portions of the Choptank River are represented in the Chesapeake Bay Model as four separate segments classified based on salinity range. MDE goes on to explain how the model simulates the effects over time of inputs into each segment from a variety of sources.

A. Description of the methodology used to develop this list, Section 130.7(b)(6)(i)

For the 2016 reporting cycle, changes were made to the bacteria and toxics methodologies. The only substantive change to the bacteria assessment methodology is in regards to the combined and sanitary sewer overflows. In the previous version of the bacteria assessment methodology, information on the number of sewage overflows of a minimum volume and frequency was used to list waters as impaired where bacteria data were not available. In the revised bacteria methodology, MDE determined that this assessment practice is not appropriate for 303(d) assessment purposes and does not add any value to their efforts to correct overflows. Therefore, this information will no longer be used for impairment determinations. MDE will continue to maintain a list of those waters that have multiple sewage overflows but will do so only within the text of the Integrated Report rather than in Category 5.

For the toxics assessment methodology, the most substantive changes were made to the procedure that the state uses for assessing water column data. Previously, MDE used a minimum of 10 samples assessed according to the 10% rule to determine whether the aquatic life designated use was impaired. Both the acute and chronic criteria were assessed using this same

method. The new procedures, which overwrite the previous, establish different assessment methods for acute and chronic criteria. Under the new procedures, a water body is listed as impaired if the acute criterion is exceeded more than once over a three-year time span. Meanwhile the assessment of chronic criteria now requires the collection of additional samples to capture the 4-day average represented by the criterion. These changes align the new assessment methods with how the acute and chronic criteria for toxics were developed and ensure that MDE accurately identifies impairments where they exist. This and all other assessment methodologies are also available on MDE's Web site at http://www.mde.maryland.gov/programs/water/tmdl/integrated303dreports/pages/programs/waterprograms/tmdl/maryland%20303%20dlist/ir_listing_methodologies.aspx.

B. Description of the data and information used to identify waters, including a description of the data and information used by Maryland as required by Section 130.7(b)(5).

1. Section 130.7(b)(5)(i), Waters identified by Maryland in its most recent Section 305(b) report as "partially meeting" or not meeting designated uses or as "threatened."

Maryland's Section 303(d) list is mostly defined by the data collection and assessment contained in the 305(b) report of the State's water quality. In Maryland, responsibility for collection and compilation of this information is shared between the Maryland Department of Natural Resources (MDNR) and MDE. MDE compiles Maryland's Inventory of the Water Quality, the Section 305(b) Report, every two years pursuant to Section 305(b) of the CWA. MDNR collects many of the data that goes into the assessments. Also, MDE sets water quality standards (WQS), regulates discharges to Maryland waters through environmental permitting, enforcement and compliance activities, identifies waters for inclusion on the Section 303(d) list, and develops TMDLs. Since 2002 and consistent with EPA guidance, Maryland has submitted an integrated report combining the Section 303(d) list and the Section 305(b) report (Integrated Report). The following categories are used to describe water quality in Maryland's Integrated Report. Category 1 of the Integrated Report identifies waters that meet all water quality standards and no use is threatened. Category 2 identifies waters meeting water quality standards for at least one designated use, but with insufficient information to determine if WQS are being met for other designated uses. Category 3 identifies waters where there is insufficient information to determine if any water quality standard is being attained, and includes subcategories for insufficient data quantity and insufficient data quality. Category 4 identifies waters where one or more WQS are impaired or threatened, but for which a TMDL is not required because a TMDL has already been approved or established by EPA (Subcategory 4a), other pollution control requirements are expected to attain WQS (Subcategory 4b), or the impairment is not caused by a pollutant (Subcategory 4c). Categories 1-4 comprise the Section 305(b) portion of the integrated report. Category 5 is the Section 303(d) list and identifies waters that are not attaining WQS and for which a TMDL may be necessary.

Maryland considers a waterbody as "impaired" (and therefore subject to listing pursuant to Section 303(d)) when it does not attain a designated use pursuant to Maryland's WQS. Maryland has developed numerous methodologies for assessing whether waters are achieving their designated uses. MDE has provided the public with notice and an opportunity to comment on its assessment methodologies as they are developed and/or amended and during public

comment on the Integrated Report.

In September 2004, Maryland updated its Comprehensive Water Quality Monitoring Strategy for all State waters consistent with current EPA guidance (see "Elements of a Water Monitoring and Assessment Program," EPA document 841-B-03-003). This Strategy describes Maryland's water quality monitoring framework and covers all State waters, including rivers and streams, lakes, tidal waters, ground water and wetlands. These water quality monitoring programs support the assessment of Maryland's designated uses as well as integrated reporting activities under Sections 303(d) and 305(b) of the CWA.

In the fall of 2007, MDE initiated monitoring strategy discussion with MDNR in anticipation of a revised strategy for 2009-2010. This 2009 Strategy has been completed and submitted to EPA. (http://www.mde.state.md.us/programs/ResearchCenter/EnvironmentalData/Documents/www.mde.state.md.us/assets/document/Maryland_Monitoring_Strategy2009.pdf).

EPA concludes that the Section 303(d) list identifies waters identified by Maryland on its Section 305(b) report as "partially meeting" or not meeting designated uses.

2. Section 130.7(b)(5)(ii), Waters for which dilution calculations or predictive models indicate non-attainment of applicable water quality standards.

Maryland supports the use of computer models and other innovative approaches to water quality monitoring and assessment. Maryland and the Bay partners also relied heavily on the Chesapeake Bay model to develop loading allocations, assess the effectiveness of best management practices, and guide implementation efforts. Several different modeling approaches have also been used in TMDL development. With the growing number of biological impairments in Category 5 of the list, Maryland will be relying more heavily on land use analyses, Geographic Information System (GIS) modeling, data mining, and other innovative approaches to identify stressors, define ecological processes, and develop appropriate TMDLs.

3. Section 130.7(b)(5)(iii), Waters for which water quality problems have been reported by local, state, or federal agencies; members of the public; or academic institutions

A MDE data request letter was widely advertised for the solicitation of data for the 2016 list. With the integration of Sections 305(b) and 303(d) of the CWA and the adoption of a multi-category reporting structure, Maryland has developed a two-tiered approach to data quality. Tier 1 data are those used to determine impaired waters (e.g., Category 5 waters or the traditional 303(d) list) and are subject to the highest data quality standards. Maryland waters identified as impaired using Tier 1 data may require a TMDL or other regulatory actions. These data should be accompanied by a Quality Assurance Project Plan (QAPP) consistent with EPA data guidance specified in Guidance for Quality Assurance Project Plans. Dec 2002. EPA /240/R-02/009 available at https://www.epa.gov/quality/guidance-quality-assurance-project-plans-epa-qag-5. Tier 1 data analysis must also be consistent with Maryland's Assessment Methodologies. As a result of the data solicitation, 27 organizations/programs submitted water quality data for consideration in the 2016 IR. Of those 27 organizations/programs, 17 submitted Tier 1 data.

MDE coordinates with the remaining organizations providing Tier 2 data to improve data quality and further promote the use of Tier 1 data for assessment purposes.

Tier 2 data are used to assess the general condition of surface waters in Maryland and may include land use data, visual observations of water quality condition, or data not consistent with Maryland's Assessment Methodologies. Such data may not have a QAPP or may have one that is not consistent with EPA guidance. Waters with Tier 2 data may be placed in Categories 2 or 3 of the IR, denoting that water quality is generally good or that there are insufficient data to make an assessment, respectively. However, Tier 2 data alone are not used to make impairment decisions (i.e., Category 5 listings requiring a TMDL) because the data are of insufficient quantity and/or quality for regulatory decision-making. MDE notes that it will be reevaluating the current data quality tier system to determine if changes are necessary to establish consistency with the Chesapeake Bay Monitoring Cooperative and further refine the data evaluation process.

Maryland has made significant efforts to incorporate non-state government data in ways that increase the resolution of the state's water quality assessments. Datasets used included those collected by federal agencies, county governments, water utility agencies, and non-profit watershed organizations. The 2016 IR will include a GIS submittal that provides coverages for streams, impoundments, and estuarine waters which depict assessment information at appropriate scales. MDE also makes Integrated Reporting data available to the public in several user-friendly formats. Through the use of MDE's searchable IR database and the interactive online pollutant maps, users can query IR information and explore water quality information in a graphic format. The searchable IR database and clickable map application are available online at http://www.mde.maryland.gov/programs/water/tmdl/integrated303dreports/pages/303d.aspx and the interactive pollutant maps can be found at http://www.mde.state.md.us/programs/Water/TMDL/Integrated303dReports/Pages/ImpairmentMaps.aspx.

4. Section 130.7(b)(5)(iv), Waters identified by Maryland as impaired or threatened in a non-point assessment submitted to EPA under section 319 of the CWA or in any updates of the assessment.

MDE considered waters identified in a Section 319 assessment during the development of the 1996 Section 303(d) list, and all such water segments were included on the 1996 list, which was incorporated into all subsequent lists, including the 2016 Section 303(d) list. The Clean Water Action Plan of 1998 required a statewide Unified Watershed Assessment which set priorities for Section 319 activities. Maryland's Unified Watershed Assessment, Category I assignments were based on the 1998 Section 303(d) list.

5. Other data and information used to identify waters (besides items 1-4 discussed above).

In addition to waters identified as impaired on the 2014 Section 303(d) List that have not been delisted, the 2016 Section 303(d) lists sixteen additional impaired waters. Nine of the new listings resulted from MDE's Biological Stressor Identification Analyses. Of these nine new 'biostressor' listings, four are for total suspended solids, three are for sulfates, and two are for chlorides. In addition, there are four new PCB listings and three new fecal coliform listings in

shellfish harvesting waters. One new listing, not counted as part of the other sixteen, resulted from the spatial splitting of a previous listing for the Lower Patuxent River for PCBs. Although this new listing didn't result in any new waters being determined as impaired, this action (splitting) caused what was one listing in 2014 to become two listings in 2016.

C. A rationale for any decision to not use any existing and readily available data and information for any one of the categories of waters as described in Sections 130.7(b)(5) and 130.7(b)(6)(iii).

Starting in 2002, Maryland developed and published for public review the Listing Methodologies to describe the State's interpretation of its WQS and establish scientifically defensible approaches for determining water body impairment. Listing Methodologies are not considered rules, but rather provide a means to provide consistency and transparency in Integrated Reporting so that the public and other interested stakeholders understand why listing decisions are made and can independently verify listing decisions. The methodologies are living documents that are revised as new statistical approaches, technologies, or other improved methods are adopted by the State. When changes are proposed to the Listing Methodologies, Maryland advertises the revised methodologies for public review via the biennial Integrated Report.

In Maryland's Section 305(b) Report, certain water bodies are conditionally approved shellfish areas. A sub-set of these water bodies are restricted because they are closed for administrative reasons under guidance of the National Shellfish Sanitation Program. Typically, these waters are restricted due to their vicinity to wastewater treatment plants and the restriction is precautionary against the potential treatment system failure, rather than an expression of failure to meet WQS. In accordance with MDE's listing methodology, both administratively restricted and conditionally approved shellfish waters are not listed on the Section 303(d) list.

D. Rationale for delisting of waterbodies from the previous 303(d) list[2].

Maryland has indicated, in the Integrated Report (Table 2), that eleven delistings have occurred during this cycle. Four biological listings without a specified impairing substance have been replaced by specific pollutant listings enumerated by the Biological Stressor Identification analyses (BSID). Another four listings, for fecal coliform in shellfish harvesting areas, were delisted because new data showed that water quality standards were either being met (two) or that assessments were inappropriate in those waters (two). Two more listings, one for mercury in fish tissue and another for low pH, were moved to Category 2 because new data demonstrated that these waters were now meeting water quality criteria for these parameters. The remaining delisting (moved from Category 5 to Category 3, insufficient information) occurred as a result of a correction to a PCB in fish tissue listing.

There was one partial delisting in the 2016 IR that was not counted as part of the eleven delistings mentioned above (Table 15). A partial delisting results in cases where an assessment unit that was previously entirely listed as impaired had new data that demonstrated use support in

[2] Public comments received during the 2016 Integrated Reporting cycle concerning delistings that occurred on MDE's 2012 Integrated Report have been addressed above.

some smaller geographic portion. To reflect this new information and the fact that a portion of these waters now meets standards, MDE may split the original assessment unit into two assessment units, one which is still impaired and another that is not. This partial delisting was not counted as one of the eleven total delistings since it did not have any effect on the total number of Category 5 listings.

There were other water quality listings removed from the impaired part of the IR that were not counted in Table 2 because they were previously in Categories 4a (impaired, TMDL approved) and 4b (impaired, technical fix implemented). Recent data now demonstrates that these listings meet water quality standards (Table 16). In addition, another assessment captured on the 2016 IR and which was not counted in Table 2, was the removal of the low pH impairment which was never previously listed as impaired on Maryland's IR but anecdotally was known to be impacted by acidic mine drainage from an abandoned mine. Construction of an acid mine drainage treatment system coordinated by MDE's Bureau of Mines Division and designed to increase stream pH to levels within Maryland's pH criteria range, resulted in a Category 2 (meeting some water quality criteria) listing on the 2016 IR.

There were also two partial removals of Category 4a listings on the 2016 IR. These partial removals resulted from shellfish harvesting areas that were previously assessed as impaired (and had a TMDL completed) and which subsequently had new data which demonstrated that a portion of the water body was meeting water quality criteria (Table 17).

One final small subset of impairment removals resulted in two assessment units being split. This scenario happened due to the reassessment of two Category 4b (impaired, technological solution to be implemented) listings in the tidal portion of the Patuxent River (PAXMH). These assessment records were originally added to the 2002 IR due to the oil spill on April 7, 2000 at the Chalk Point Power Plant in Prince George's County. A long-term monitoring system was undertaken to determine the impact of the oil spill over time after all feasible cleanup activities were completed. A part of this monitoring system continues today in the form of a qualitative survey which assesses the presence/absence of oil in the shoreline areas near the site of the original spill. When a survey determines that no residual oil is present, that particular shoreline segment is removed from the impaired part of the list (in this case Category 4b).

Originally, the listings for impacts from the oil spill were consolidated in only a few assessment records (Table 18). To better characterize the spatial extent of these shoreline areas, these listings were split out into the seven current assessment records (Table 19). At the same time, recent survey data demonstrated that the areas within Cremona and Washington Creeks no longer had residual oil and were thus moved from Category 4b to Category 2 (not impaired).

Maryland has demonstrated, to EPA's satisfaction, its rationale for these delistings.

E. Rationale for Maryland's decision not to list waters pursuant to 40 CFR 130.7(b)(1) because they are expected to meet water quality standards.

Maryland's decision not to include waters on its 2016 Section 303(d) list due to other required pollution controls is consistent with EPA regulations at 40 CFR 130.7(b)(1). These waters were identified in Category 4b of the Integrated Report. Under 40 CFR 130.7(b)(1), states are not required to list WQLSs still requiring TMDLs where effluent limitations required by the CWA, more stringent effluent limitations required by state or local authority, or other pollution control requirements required by state, local, or federal authority, are stringent enough to implement applicable WQS. The regulation does not specify the timeframe in which these various requirements must implement applicable WQS to support a state's decision not to list particular waters. EPA expects that required controls will result in attainment in a reasonable time, based on the nature of the pollutant and actions that need to be taken to achieve attainment.

Monitoring should be scheduled for these waters to verify that the water quality standard is attained as expected in a reasonable time frame. Where standards will not be attained through implementation of the requirements listed in 40 CFR 130.7(b)(1) in a reasonable time, it is appropriate for the water to be placed on the Section 303(d) list to ensure that implementation of the required controls, and progress towards compliance with applicable standards, is tracked. If it is determined that the water is, in fact, meeting applicable standards when the next Section 303(d) list is developed, it would be appropriate for the state to remove the water from the list at that time.

As indicated above, Maryland has several listings in Category 4b. Based on new data collected, one listing for the tidal portion of the Patapsco River (MD-PATMH-Erachem-001-Copper) was moved to Category 2 because data demonstrated that water quality criteria was met (Table 16). The remaining listing records still require more data collection and analysis to either confirm impairment or to demonstrate water quality standards attainment. Also, and as discussed in the previous section, some impairment removals resulted from the reassessment of two Category 4b listings in the tidal portion of the Patuxent River (PAXMH) (Tables 18 and 19).

Consistent with a program of continuous assessment, EPA encourages MDE to continue efforts, including monitoring as appropriate, to provide updates on the status of the segments and to confirm that the delistings remain supportable. Given the basis for the original listing, EPA agrees with the basis for the delistings. As part of the Integrated Report, MDE would review the remainder of waters identified in Category 4b to determine whether the water quality standards are expected to be attained in a reasonable time or whether the waters need to be moved to Category 5. EPA recommends that MDE collect and analyze ambient water quality data as part of its analysis.

TMDL Priority Ranking and Targeting

MDE used the same priority ranking methodology used in previous lists. Within the Section 303(d) list, Maryland has provided both a priority ranking of high, medium, or low, and a separate indication for waters targeted for TMDL development in the next two years. In general, criteria that affect human health or have an extreme effect on natural resources are

ranked high, criteria that indicate a continuing downward trend in the loss of a significant resource, create a serious nuisance, or constitute a significant loss of a natural resources are ranked as medium, and the remaining cases rank low.

EPA concludes that MDE's TMDL prioritization plans are acceptable as the State properly took into account the severity of pollution and the uses to be made of such waters. Scheduling, however, takes into account additional considerations other than priority designations, such as programmatic consideration (e.g., efficient allocation of resources, basin planning cycles, coordination with other programs or states) and technical considerations (e.g., data availability, problem complexity, availability of technical tools). This is consistent with EPA guidance. In addition, EPA reviewed the State's identification of WQLSs targeted for TMDL development in the next two years (i.e., those targeted as a high priority), and agrees that the targeted waters are appropriate for TMDL development in this timeframe.

Maryland's New Vision for Prioritizing Impairments for TMDL Development

Beginning in 2012, EPA described a "New Vision" for CWA Section 303(d). The New Vision is in part a response to an analysis by the federal General Accounting Office (GAO), which concluded that the development of thousands of TMDLs nationwide had not resulted in commensurate improvements in water quality. A central goal of the New Vision is thus to increase quantifiable improvement in water quality restoration and protection. The New Vision consists of six elements to take place between 2014 and 2022 including engagement, prioritization, protection, integration, alternatives, and assessment. Since prioritization is an early and necessary step in the overall process, MDE's 2016 Integrated Report describes the establishment of a method to prioritize waters for TMDL development and other means of protecting, restoring and enhancing water quality. As set forth above, so long as MDE considers the factors set forth in Section 303(d)(1)(A), the Act provides that States establish priorities. The Act does not authorize EPA to approve or disapprove MDE's prioritization scheme. Accordingly, the following discussion is solely for informational purposes.

Maryland's New Vision priorities include a focus on the implementation of the Chesapeake Bay nutrient and sediment TMDLs, which were established in 2010. The Chesapeake Bay and its tidal tributaries cover a large portion of the state and represent a significant natural resource, which the State has and will continue to prioritize for restoration.

In addition, Maryland will prioritize TMDL development for waters quality impairments with the potential to affect public health, which generally fall into two categories— pathogens and toxic substances. The impairments to be addressed during the 2016-2022 period include bacteriological listings (especially in shellfish harvesting areas), methylmercury in fish tissue, polychlorinated biphenyls (PCBs) in fish tissue, heptachlor epoxide, and lead and zinc (specifically in the Baltimore Harbor).

Maryland also prioritizes TMDL development to support the protection of aquatic life. From 2016 to 2022, Maryland intends to develop TMDLs for some chloride and sediment listings. Chlorides are a matter of increasing concern regarding public water supply sustainability, and thus also have public health ramifications. In regards to sediment, majority of

the State is covered by sediment allocations from the Chesapeake Bay TMDL, but these allocations are intended to meet water quality standards in the Bay and its tidal tributaries and do not address impairments in low (e.g., 1st-4th) order streams.

Along with TMDL development to address new listings, Maryland intends to revise existing TMDLs for several lakes to facilitate compatibility with the Chesapeake Bay TMDL and associated implementation efforts, including the potential for nutrient trading. These TMDLs date as far back as the late 1990s and although methods were appropriate at the time, better science and methodologies exist presently. Maryland is currently collecting data for these lakes, and is in the process of exploring technical options and refining TMDL endpoints.

Consultation with Other Agencies

EPA sought review and comments from the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) (collectively the Services) through a letter sent on January 3, 2017. This letter included a hard copy of the draft 2016 Integrated Report as well as the website link. In reaching its conclusions on approving Maryland's 2016 303(d) list, EPA collected and appropriately considered information on the endangered and threatened species and their critical habitat in Maryland's waters identified by NMFS and FWS.