

District Department of Energy and Environment

Consolidated TMDL Implementation Plan

Response to Comments

August 4, 2016

Background and Purpose

In accordance with MS4 NPDES permit requirements, the District Department of Energy and Environment (DOEE) issued a draft Consolidated Total Maximum Daily Load (TMDL) Implementation Plan (IP) for public comment on May 15, 2015. The Consolidated TMDL IP outlined DOEE's plan to achieve MS4 waste load allocations (WLAs). As required by the NPDES permit, the IP includes a schedule for attainment of the WLAs (including final attainment dates and interim milestones), a narrative explaining schedules and controls used in the Consolidated TMDL IP, and a demonstration using modeling of how the WLAs will be attained. Key stakeholders were engaged during the IP development process through a series of regular meetings. The goal of these meetings was to keep stakeholders informed throughout the development of the IP, and make the IP development process transparent, easy to understand, and based on the best possible data and science. DOEE and its contractors made presentations during these meetings to update the stakeholders on progress, explain technical challenges in developing the IP, propose solutions, and receive feedback. While consensus was not reached on every issue (nor was this a requisite goal of the stakeholder engagement), DOEE is confident the stakeholder engagement process allowed the IP to be developed in a transparent manner, in which all technical challenges, fiscal realities, and programmatic requirements were incorporated to develop a realistic, workable implementation plan.

The IP was made available for public comment from May 15, 2015 through August 15, 2015. By the end of the public comment period, DOEE had received comments on the Consolidated TMDL IP from the following stakeholders:

- Natural Resources Defense Council (NRDC) (with Anacostia Watershed Society, Center for Biological Diversity, Chesapeake Bay Foundation, Clean Water Action, DC Environmental Network, Earthjustice, Little Falls Watershed Alliance, Potomac Riverkeeper Network, Waterkeepers Chesapeake, and Wentworth Green Strategies)
- Anacostia Watershed Trust
- Rock Creek Conservancy
- Marchant Wentworth

In addition, DOEE received comments from the US Environmental Protection Agency on March 31, 2016.

Many of the comments submitted address similar issues and concerns. Therefore the purpose of this *Response to Comments* document is to provide a respond to the common comments, although some specific comments are also addressed. In addition, DOEE has incorporated changes prompted by the comments in an updated Consolidated TMDL IP.

Summary of Comments

While many comments dealt with specific technical or logistical aspects of the plan, some general themes are prevalent. These are:

- The timeline for implementation is too long;
- DOEE needs to increase implementation beyond current levels; and
- The IP did not include sufficient and specific steps to increase implementation and load reduction in the future.

DOEE Response to Comments

In response to comments received from EPA and stakeholders, DOEE revised and updated the Consolidated TMDL IP to include a series of programmatic milestones in addition to the numeric milestones established in the original draft IP. Furthermore, DOEE developed this document to clarify and emphasize its existing and recent implementation activities, as well as further highlight several elements of the IP to provide additional context for the District implementation efforts. In summary:

- In the updated Consolidated TMDL IP, DOEE has included a series of programmatic milestones focused on accelerating implementation to address stormwater pollution in the District of Columbia;
- These programmatic milestones are in addition to progress realized over the past two years, during which DOEE has aggressively increased efforts to implement best management practices (BMPs) through several program initiatives, including the updated stormwater regulations, the development of the Stormwater Retention Credit system, and the increased efforts of other agencies within the District government;
- DOEE will evaluate the impact of recent initiatives and revise the TMDL IP based on revised implementation projections.
- The Consolidated TMDL IP represents implementation to the Maximum Extent Practicable (MEP), because it represents the extent of DOEE's current regulatory and fiscal authority to manage and reduce stormwater pollution; and
- DOEE is committed to evaluating additional strategies to manage stormwater pollution.

New Programmatic Milestones

DOEE's updated Consolidated TMDL IP includes a series of new programmatic milestones. The intent of these programmatic milestones is to accelerate the implementation of stormwater management and stormwater pollutant load reduction in the near-term, while longer-term adjustments are made to the District's TMDLs and Implementation Plan modeling tool.

The programmatic milestones are discussed in detail in Section 6.7 of the updated Consolidated TMDL IP, but include:

- Committing \$12.75 million to establish a Stormwater Retention Credit (SRC) Purchase Agreement Program
- Developing a list of targeted watersheds and targeted implementation approaches
- Evaluating options for increasing the District's Stormwater Fee
- Identifying priority TMDLs in need of revision, conducting intensive monitoring to support TMDL revisions, and completing priority TMDL revisions
- Conducting a cost/benefit analysis of potential changes to existing stormwater management regulations

- Updating the Consolidated TMDL IP modeling tool, the TMDL IP and its associated schedule
- Exploring the ability to convene a new Stakeholder Group to evaluate stormwater management activities and priorities.

Programs in Place to Accelerate BMP Implementation

The District has had a stormwater management program in place to address MS4 NPDES permit requirements since the District was issued its first MS4 permit in 2000. Elements of the District's ongoing stormwater program include illicit discharge detection and elimination (IDDE), reporting on implementation status of stormwater program activities, public outreach, and regulation of various activities that can adversely impact stormwater quantity and quality. District agencies such as the District Department of Transportation (DDOT) have included BMPs in their construction projects and have design guidelines that minimize stormwater runoff impacts. DOEE and other District agencies such as the Department of General Services (DGS) and Department of Public Works (DPW) include stormwater BMPs as part of their programmatic activities. In addition, the District has implemented programs such as the various RiverSmart components that incentivize the implementation of green infrastructure throughout the city.

Even with these activities and programs underway, the District acknowledges that more work is needed to address stormwater pollution. Therefore, in recent years, the District has significantly increased its programmatic efforts to address stormwater. These increased efforts are focused in two primary areas:

- The updated 2013 stormwater regulations, which established retention requirements for land disturbances of over 5,000 ft², and also regulated major substantial improvement projects (e.g. interior renovations) for the first time; and
- The development of the SRC market, which by allowing the trading of credits generated from voluntary green infrastructure implementation on an open market to others who use them to meet regulatory requirements for retaining stormwater, should further incentivize voluntary retrofits.

These increased efforts are described in more detail below:

The District's Updated 2013 Stormwater Regulations

In 2013, the District updated its 1988 stormwater regulations to increase the requirement for projects disturbing more than 5,000 ft² from treatment and detention of the first 0.5 inches to retention of the first 1.2 inches of stormwater. The new regulations thus shifted in regulatory approach from "peak shaving" to on-site retention. In addition, the 2013 regulations added a new requirement for every major substantial improvement project to meet retention requirements as well. The District's updated stormwater management regulations are among the most progressive and environmental protective in the nation, and mark a major increase in both the amount of retention required by specific projects, and also in the universe of parcel impacted by the regulations. Projections of additional load reduction from the increased retention standard for projects disturbing more than 5,000 ft² were incorporated into the Consolidated TMDL IP.

Additionally, the 2013 stormwater regulations are driving other District agencies to increase public investment and expenditures on stormwater management. As a result of the regulations, the District's investment in stormwater management through capital projects has already increased dramatically relative to prior to the implementation of the regulations. For example, DDOT developed and is implementing Green Infrastructure Standards for the implementation of green infrastructure in Public

Right of Way projects. Furthermore, all of these projects on properties and facilities operated, maintained or managed by DGS must follow design guidelines and construction standards that have been updated to meet the 2013 stormwater regulations.

Because the 2013 stormwater regulations have only been in place for a short time, only limited data are available for evaluating their impact. While projections of additional load reduction from the increased retention standard for projects disturbing more than 5,000 ft² were incorporated into the Consolidated TMDL IP, projections of additional load reduction from major substantial improvement projects were not included because no data were available to develop these projections. However, DOEE now has approximately one year's data on major substantial improvement projects from its stormwater database. As of the end of Fiscal Year 2015, 63 individual projects triggered the "Major Substantial Improvement" requirements, either as stand-alone projects or as part of larger land-disturbing projects. These projects covered almost 575,000 ft² of contributing drainage area, and will result in retention of approximately 419,000 gallons of stormwater runoff. While this amount of data is a small snapshot that is far too limited to provide a basis for any formal projections, it is useful in providing a "ballpark" figure of the scale of additional annual activity that is expected to be realized through the addition of this regulatory requirement.

One potential complicating factor in assessing the impact of the new stormwater regulations is that projects in high density areas may not be able to retain the full 1.2 inches on-site, and therefore they may need to buy SRCs elsewhere or do additional retention projects off-site. It is anticipated that it will be more difficult to meet the full retention requirements of the 2013 stormwater regulations at sites in the more heavily-developed urban core, whereas SRCs and additional projects may be installed in the less heavily developed areas of the city. Because the urban core is in the combined sewer area, and the MS4 area is generally less heavily developed, in many cases redevelopment in the CSS area will drive more retention in the MS4 area. Because the regulations are so new, there is not sufficient data available on this shift BMP implementation. Therefore, the projections of the impact of the 2013 stormwater regulations may be underestimated, and more data needs to be collected before a more accurate and validated projection can be made. When taken altogether, the impacts of the 2013 stormwater regulations on private development, DDOT projects, and DGS-managed and operated properties should be quite significant, and represent a substantial level of both private and public investment that began concurrently with the TMDL Implementation Planning process, but was unable to be quantified at that time. As part of its plan review process, DOEE will continue to collect information of projects designed to comply with the updated stormwater regulations. Over the next permit cycle, DOEE will evaluate these data to determine the impacts of various parts of the stormwater regulations (e.g., major land disturbing projects, major substantial improvements and the use of SRCs. Based on the results, DOEE can modify the TMDL IP to accurately account for revised projections of implementation.

Stormwater Retention Credit (SRC) Market

As noted above, DOEE is establishing a SRC Purchase Agreement Program to help jumpstart the nascent SRC market and incentivize the installation of green infrastructure in priority areas within the District. Under the SRC Purchase Agreement Program, DOEE will commit \$11.5 million of District funding for the purchase of SRCs. This translates to between 154 and 280 acres of retrofitted area if 0.5 inches of retention are assumed, and between 368 and 673 acres if 1.2 inches of retention are assumed (note that these retrofitted areas are given as ranges because different assumptions can be made regarding the runoff coefficients of the areas to be retrofitted, as well as the amount of retention achieved by the retrofits). Any SRCs purchased by DOEE will be retired to achieve additional benefit to District waterbodies, beyond that achieved by the District's stormwater management regulations.

DOEE views the SRC market as a major opportunity to fund stormwater retrofits for the long term, in the most cost efficient manner, by using the market to attract private investment in green infrastructure projects and leverage stormwater fee revenue. For example, a new collaboration between The Nature Conservancy and Encourage Capital, backed by \$1.7 million in funding from Prudential Financial, will fund green infrastructure retrofits that generate SRCs. In addition, DOEE may be able to further leverage the stormwater fee by bonding stormwater fee revenue.

DOEE believes that a robust SRC market will incentivize more BMP implementation, which may particularly benefit the MS4 area of the city. However, the SRC market is just beginning to develop. Because DOEE manages the SRC program and tracks off-site retention, it is able to track the impact of this program, both in terms of the number and location of SRC-related green infrastructure projects, and also the load reduction realized by these projects. Over the next permit cycle, DOEE intends to use an adaptive management approach to track the SRC market and determine whether the Purchase Agreement Program is having the intended effect – for example, whether it is generating sufficient load reduction for the dollars spent relative to other potential uses of those dollars, and whether it should increase or redirect funding for the program to achieve desired outcomes. Based on the outcome of these analyses, DOEE will evaluate whether any changes or redirection of resources are warranted for this program in the future, and will determine how the SRC market and SRC Purchase Agreement Program fit into the District’s long-term strategy for reducing loads and achieving WLA goals.

The discussion above documents the recent increases in the level of effort expended by the District to control stormwater and reduce MS4 loads. While the Consolidated TMDL IP was able to project increased load reduction from some of these increased efforts, projections could not be made for all of these efforts. This supports an adaptive management approach whereby more data is collected to provide a better assessment of the impact of these regulations before incorporating into the TMDL IP.

Evaluating Effectiveness of Existing Stormwater Management and Load Reduction Strategies

The Consolidated TMDL IP quantified the load reduction impacts of many of the District’s existing BMPs, stormwater program elements, and MS4 activities. However, there were a significant number of existing BMPs and stormwater management activities for which there were insufficient data to quantify load reduction impacts. Thus, these BMPs and stormwater management activities were not included in the modeling to determine projected schedules for achieving waste load allocations. DOEE has already begun an effort to better characterize the existing structural BMPs that were not included in the original IP modeling. This will consist of collecting additional data on these BMPs, such as the amount of impervious area controlled, which is necessary to calculate load reductions, but which may have been missing from DOEE’s database. In addition, DOEE will evaluate the feasibility of collecting sufficient data to characterize other stormwater management practices that were not included in the load reduction modeling, such as catch basin cleaning and illicit discharge detection and elimination. Specifically, DOEE will:

- Undertake a BMP database validation effort. As part of a larger effort to validate the BMPs in its BMP inventory, DOEE will identify and update BMP records that are missing data required for inclusion of the BMPs in the IP modeling. Missing or questionable data that would prevent a BMP from being included in load reduction modeling may include information on location, BMP type, impervious area controlled, built date, and other information. DOEE will review all available records and/or conduct site visits to update and validate the minimum information necessary to include existing BMPs in the IP modeling tool.

- Evaluate the feasibility of including additional non-structural and programmatic BMPs in the IP modeling tool. There are a number of BMPs, including catch basin cleaning, IDDE, pet waste cleanup, and other for which methods exist to quantify load reduction impacts. For example, the Chesapeake Bay Program has explored methods for quantifying the impacts of catch basin cleaning. While the methods for quantifying load reductions from these BMPs may not be approved by the Chesapeake Bay Program for use in evaluating progress towards the Chesapeake Bay TMDL, they can be used to evaluate progress in reducing loads to meet other TMDLs. For example, the state of Maryland has approved methods for quantifying impacts on controlling impervious area (one of the state’s MS4 NPDES permit requirements) for a number of BMPs that are not approved for load reduction quantification by the Chesapeake Bay Program. DOEE will investigate the feasibility of including additional BMPs in its IP modeling tool as part of its ongoing Adaptive Management approach.

Through better tracking and quantification of existing BMPs and stormwater management strategies that were not included in the initial IP, DOEE hopes to further reduce the timeline for achieving MS4 WLAs.

The Consolidated TMDL IP Represents MEP for TMDL Implementation

DOEE has developed the Consolidated TMDL IP to reflect TMDL implementation to the Maximum Extent Practicable (MEP). As acknowledged in some of the stakeholder comments (see comments from NRDC dated August 14, 2015), “the TMDL IP must also meet the legal standard for MS4 permits themselves. Specifically, any elements of the TMDL IP...must satisfy the Clean Water Act’s mandate that MS4 permits ‘shall require controls to reduce the discharge of pollutants to the maximum extent practicable,’ often known as the MEP standard.” DOEE has determined that the current Consolidated TMDL IP represents MEP because it:

- Represents the resources available to implement BMPs;
- Accounts for stormwater programs and initiatives as data is available; and
- Utilizes adaptive management to ensure that the IP is on track and the TMDL IP will be modified to account for additional programs and BMP implementation as data becomes available to account for their impacts; and

While the TMDL IP currently represents MEP, DOEE is also committed to evaluating additional actions to increase load reduction. Thus as opportunities to increase implementation and load reduction are identified in the future, the MEP standard will be increased, and the IP will be updated to reflect the new MEP standard.

Next Steps

As discussed above, DOEE intends to continue implementing the measures describe in the updated Consolidated TMDL IP. This represents current MEP for TDML implementation because it reflects the extent of DOEE’s current authority and resources to implement BMPs. Under the Consolidated TMDL IP, DOEE and other District agencies will continue to implement BMPs and reduce loads. At the same time, DOEE will continue to reevaluate existing TMDLs, WLAs and endpoints to ensure that they are accurate and based on the best available science and data. DOEE will also evaluate future actions to further increase implementation and reduce loads. If DOEE identifies additional actions that it can take to increase implementation and reduce loads, it will take those actions and adjust MEP to incorporate these additional actions. DOEE will also use an adaptive management approach over the next permit

cycle to collect data on the effectiveness of various implementation strategies with the goal of learning more to focus on the most effective actions, and accounting for those actions in the TMDL IP. Finally, DOEE will continue to engage with stakeholders to exchange ideas and assess priorities. In this way, the IP implementation phase will continue to evolve in a transparent and effective manner.