



U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF INSPECTOR GENERAL

*Ensuring clean and safe water*

## **EPA Helps States Reduce Trash, Including Plastic, in U.S. Waterways but Needs to Identify Obstacles and Develop Strategies for Further Progress**

Report No. 21-P-0130

May 11, 2021



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## Abbreviations

CWA	Clean Water Act
EPA	U.S. Environmental Protection Agency
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
OIG	Office of Inspector General
TMDL	Total Maximum Daily Load

**Cover Photo:** Improperly disposed trash can end up in waterways and flow downstream into the oceans, where it becomes marine debris. (EPA photo)

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# At a Glance

## Why We Did This Audit

We conducted this audit to identify the extent to which the U.S. Environmental Protection Agency's existing Clean Water Act programs and Office of Research and Development initiatives address threats and risks to public health and the environment from trash, including plastic, within the waters of the United States.

This report focuses on our audit findings related to the Office of Water's Clean Water Act programs. We issued Report No. [21-N-0052](#) on January 6, 2021, to summarize our audit findings related to the Office of Research and Development's initiatives.

Improperly handled trash, which includes plastic, can enter fresh water and marine ecosystems, thereby posing risks to human health and the environment.

### This audit addresses the following:

- *Ensuring clean and safe water.*

### This audit addresses a key EPA management challenge:

- *Overseeing states implementing EPA programs.*

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## ***EPA Helps States Reduce Trash, Including Plastic, in U.S. Waterways but Needs to Identify Obstacles and Develop Strategies for Further Progress***

### What We Found

The EPA and states have not widely applied all the tools established by the Clean Water Act to reduce the trash, including plastic, in U.S. waterways. Trash pollution in water bodies is challenging to control because:

- It is made up of many substances.
- It is both a point- and nonpoint-source pollutant.
- The EPA has not established consistent methods for measuring it.

**The EPA and states can reduce the volume of trash, including plastics, in U.S. waterways by evaluating barriers to implementing the Clean Water Act and developing strategies to overcome those barriers.**

Despite these challenges, thousands of municipalities across the United States control stormwater discharges of trash through the Clean Water Act's National Pollutant Discharge Elimination System program, specifically through permits for municipal separate storm sewer systems. In addition, the EPA, states, and municipalities implement a variety of nonregulatory initiatives to prevent and remove trash from waterways.

The EPA can further improve its efforts to reduce trash, including plastic, in U.S. waterways by evaluating the regulatory and nonregulatory obstacles facing states and municipalities and by continuing its support of trash-reduction initiatives.

### Recommendations and Planned Agency Corrective Actions

We make three recommendations to the assistant administrator for Water:

- Evaluate the obstacles to implementing the Clean Water Act to control trash in U.S. waterways and provide a public report describing those obstacles.
- Develop and disseminate strategies to states and municipalities for addressing the obstacles identified in the evaluation.
- Support state and local municipalities' efforts to control trash through National Pollutant Discharge Elimination System permits for municipal separate sewer systems by publishing guidance documents such as the *Trash Stormwater Permit Compendium* and the *U.S. EPA Escaped Trash Assessment Protocol*.

The EPA agreed with our recommendations and proposed acceptable corrective actions and estimated completed dates. Recommendations 1 and 2 are resolved with corrective actions pending, and Recommendation 3 is completed.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

THE INSPECTOR GENERAL

May 11, 2021

**MEMORANDUM**

**SUBJECT:** EPA Helps States Reduce Trash, Including Plastic, in U.S. Waterways but Needs to Identify Obstacles and Develop Strategies for Further Progress  
Report No. 21-P-0130

**FROM:** Sean W. O'Donnell

A handwritten signature in blue ink that reads "Sean W O'Donnell".

**TO:** Radhika Fox, Acting Assistant Administrator  
Office of Water

This is our report on the subject audit conducted by the Office of Inspector General of the U.S. Environmental Protection Agency. The project number for this audit was [OA&E-FY19-0086](#). This report contains findings that describe the problems the OIG has identified and corrective actions the OIG recommends. Final determinations on matters in this report will be made by EPA managers in accordance with established audit resolution procedures.

The Office of Water is responsible for the issues discussed in this report.

We issued three recommendations in this report. In accordance with EPA Manual 2750, your office completed corrective actions for Recommendation 3. Your office also provided acceptable planned corrective actions and estimated milestone dates in response to Recommendations 1 and 2. In accordance with EPA Manual 2750, all recommendations are either completed or resolved with corrective actions pending, and no further response is required. However, if you submit a response, it will be posted on the OIG's website, along with our memorandum commenting on your response. Your response should be provided as an Adobe PDF file that complies with the accessibility requirements of Section 508 of the Rehabilitation Act of 1973, as amended. The final response should not contain data that you do not want to be released to the public; if your response contains such data, you should identify the data for redaction or removal along with corresponding justification.

We will post this report to our website at [www.epa.gov/oig](http://www.epa.gov/oig).

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## Purpose

The U.S. Environmental Protection Agency’s Office of Inspector General conducted an audit to identify the extent to which the EPA’s existing Clean Water Act programs and Office of Research and Development initiatives address threats and risks to public health and the environment from plastic pollution within the waters of the United States. This report focuses on our audit findings related to the Office of Water’s CWA programs, which address plastic pollution through their focus on reducing trash in waterways. We previously issued Report No. [21-N-0052](#), *Office of Research and Development Initiatives to Address Threats and Risks to Public Health and the Environment from Plastic Pollution Within the Waters of the United States*, on January 6, 2021, to summarize our findings related to the Office of Research and Development’s initiatives for this audit.

### Top Management Challenge

This audit addresses the following top management challenge for the Agency, as identified in OIG Report No. [20-N-0231](#), *EPA’s FYs 2020–2021 Top Management Challenges*, issued July 21, 2020:

- Overseeing states implementing EPA programs.

## Background

Improperly handled trash, which includes plastic, can enter fresh water and marine ecosystems and pose risks to human health and the environment. Trash pollution can prevent water bodies from attaining their designated uses, such as the protection and propagation of fish and wildlife, recreation, or the protection of public water supplies.

The CWA is the primary federal law governing the protection of the nation’s waters and establishes the basic structure for regulating discharges of pollutants. Although trash is not specifically included in the definition of “pollutant” under the CWA, the definition does include “garbage,” “solid waste,” and “industrial, municipal, and agricultural waste,” thereby encompassing trash and its components. Trash consists of diverse materials, from plastic and food waste to used tires and construction debris. It also comes from a variety of sources, from illegal dumping to stormwater runoff, making it challenging to monitor and assess.

With oversight from the EPA, states can apply the tools of the CWA to protect the quality of their water bodies:

- **Adoption of Water Quality Standards.** Under CWA Section 303(c), each state, territory, and authorized tribe is responsible for developing water quality standards, which consist of three key components: the designated uses of a water body; water quality criteria, which are designed to protect those uses; and antidegradation requirements to protect existing uses and high-quality waters. Water quality criteria can be either numeric to specifically define the maximum pollutant levels

permitted in a water body or narrative to generally describe the desired conditions of a water body.

- **Control of Point Sources.** Discharges into waters of the United States from a point source require a permit under the CWA’s National Pollutant Discharge Elimination System, or NPDES, program. Under CWA Section 502, point sources include, but are not limited to, the pipes, ditches, and other discrete conveyances through which factories, sewage treatment plants, and other facilities discharge pollutants into water bodies. Authorized states and territories can issue individual or general NPDES permits that establish a variety of technical, water quality-based, or other controls for particular pollutants.<sup>1</sup> A NPDES individual permit reflects the site-specific conditions of a single discharger, and a NPDES general permit covers multiple dischargers with similar operations and types of discharges. For example, NPDES permits for municipal separate storm sewer systems, or MS4s, can be individual or general permits, and can contain language to limit the amount of trash being discharged or released from stormwater outfalls into neighboring water bodies.
- **Management of Nonpoint Sources.** Nonpoint sources of pollution are more challenging to control because their sources can be numerous and may not be easily identifiable. There are many nonpoint sources of pollution, from farm fields to urban areas. As water runoff from rain or snow moves, it picks up natural and human-made pollutants, such as trash, and deposits them into surface waters or groundwater. The EPA reports that the majority of trash pollution comes from nonpoint sources. To manage trash pollution from nonpoint sources, states and communities use a variety of approaches, including prohibitions and fines for littering, and nonregulatory initiatives, including trash capture, source reduction, and cleanup events.
- **Identification of Impaired Waters.** Under CWA Section 303(d), every two years, states identify and list the water bodies or water-body segments—that is, portions of water bodies—for which existing pollution controls are not stringent enough to attain or maintain water quality standards set by the states or the EPA.

**What are MS4s?** MS4s are conveyances or systems of conveyances—for example, storm drains, pipes, and ditches—that collect and discharge stormwater into local water bodies. MS4s are:

- Owned by a state, city, town, village, or other public entity that discharges to U.S. waters.
- Not a combined sewer.
- Not part of a sewage treatment plant or publicly owned treatment works.

—EPA’s “Stormwater Discharges from Municipal Sources” [webpage](#)

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<sup>1</sup> As of April 2021, 46 states and the U.S. Virgin Islands are authorized by the EPA to implement a NPDES permitting program. Idaho is partially authorized, and the EPA fully implements the permitting program in Massachusetts, New Hampshire, and New Mexico. As of April 2021, no tribe is authorized by the EPA to implement a NPDES permitting program.

- **Establishment of Total Maximum Daily Loads, or TMDLs.** States or the EPA must prepare TMDLs for the water bodies and water-body segments listed under CWA Section 303(d) to establish the pollutant limits necessary to attain and maintain the applicable water quality standards.<sup>2</sup> The state then works toward seeing that the established TMDLs are met either by incorporating the TMDLs into the NPDES permits for point sources or by identifying and implementing pollution prevention strategies and examining control opportunities for nonpoint sources.

The Office of Water’s program offices and EPA regions assist and oversee state implementation of these CWA tools. In addition, the Office of Water’s Trash Free Waters Program supports state and local efforts to reduce trash and plastic pollution from U.S. waterways by disseminating information and providing technical and financial assistance. The program is implemented by three full-time EPA staff based in Washington, D.C., and is supported by EPA regional staff who spend part of their time working on trash projects.

## Responsible Offices

Within the EPA’s Office of Water, the Office of Wastewater Management manages the NPDES program for point sources; the Office of Wetlands, Oceans, and Watersheds manages the nonpoint source, listing, and assessment programs; and the Office of Science and Technology manages the water quality standards and criteria programs. The Office of Water works with EPA regional offices, state and local governments, American Indian tribes, and others to implement the CWA.

## Scope and Methodology

We conducted this performance audit from November 2019 to March 2021 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

As detailed in Appendix A, we assessed the internal controls necessary to satisfy our audit objective.<sup>3</sup> In particular, we assessed the internal control components and underlying principles—as outlined in the U.S. Government Accountability

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<sup>2</sup> According to the CWA Section 303(d)(2), if the EPA administrator disapproves of a load, the administrator must, within 30 days, establish loads necessary to implement the water quality standards.

<sup>3</sup> An entity designs, implements, and operates internal controls to achieve its objectives related to operations, reporting, and compliance. The U.S. Government Accountability Office sets internal control standards for federal entities in GAO-14-704G, *Standards for Internal Control in the Federal Government* (also known as the “Green Book”), issued September 10, 2014.

Office's Green Book—significant to our audit objective. Any internal control deficiencies we found are discussed in this report. Because our audit was limited to the internal control components and underlying principles deemed significant to our audit objective, it may not have disclosed all internal control deficiencies that may have existed at the time of the audit.

This report addresses the Office of Water's work to reduce trash, including plastics, in U.S. waterways. To conduct our audit, we met with EPA managers and staff from the Office of Water, the Office of Research and Development, and the Office of Land and Emergency Management. We reviewed the state-established water quality criteria that could cover trash pollution in three states: California, Maryland, and Missouri. We interviewed water pollution and solid waste environmental management staff from these three states. We collected information from EPA regional staff via a questionnaire about state and local activities to reduce the volume of trash in waterways. We also spoke with staff at nongovernmental organizations and academic institutions. We analyzed the CWA and Office of Water documents for information pertaining to trash reduction plans and regional priorities. We did not review legislation that targets trash removal from oceans, such as the Marine Debris Act or the Save Our Seas Act 2.0, as such legislation was outside the scope of this performance audit.

## Prior Report

On January 6, 2021, we issued Report No. [21-N-0052](#), *Office of Research and Development Initiatives to Address Threats and Risks to Public Health and the Environment from Plastic Pollution Within the Waters of the United States*. We reported that the EPA's research into plastics is in its early stages and that the Office of Research and Development has not yet conducted enough research to determine risks to public health and the environment from plastic exposure. We issued no recommendations in that report.

## Results

The EPA and states have not widely applied all of the tools established by the CWA to reduce the amount of trash in U.S. waterways. Trash pollution in water bodies is challenging to control because it is made of up many substances, it is both a point- and nonpoint-source pollutant, and the EPA has not established consistent methods for measuring it. States establish narrative, rather than numeric, water quality criteria for trash pollution, and narrative criteria often involve subjective assessments. Only ten states and the District of Columbia have listed water bodies under CWA Section 303(d) as impaired or threatened due to trash. Of these, only three states and the District of Columbia have developed a TMDL for trash, in part because there is a lack of information on how to develop such a TMDL.

Despite these challenges, thousands of municipalities across the United States control stormwater discharges of trash through MS4 NPDES permits. In addition, the EPA, states, and municipalities implement a variety of nonregulatory initiatives to prevent and remove trash from waterways. The EPA can further improve upon these efforts by evaluating the regulatory and nonregulatory obstacles facing states and municipalities and by continuing its support of initiatives to reduce trash in U.S. waterways.

### ***States Face Obstacles to Establish Measurable Criteria to Achieve Water Quality Standards Addressing Trash Pollution***

States and authorized tribes establish water quality standards that describe the desired condition of a water body and the means by which that condition will be protected or achieved. These standards consider the designated uses of the water body to specify goals and expectations for how the water body will be used and establish water quality criteria to protect those designated uses.

All three of the states we reviewed established narrative, rather than numeric, water quality criteria that cover trash pollution. California established narrative criteria specifically protecting the designated uses of its water bodies from the effects of trash. The state has provisions in both its inland waterways plan and its oceans plan to control trash. These provisions state that trash shall not be present in inland surface waters, enclosed bays, estuaries, ocean waters, and along shorelines or adjacent areas “in amounts that adversely affect beneficial uses or cause nuisance.” The other two states, Maryland and Missouri, have narrative criteria that address “floating debris” in amounts sufficient to be unsightly, create a nuisance, or interfere with designate uses. Under these various narrative criteria, state water quality managers apply their own judgement to determine how the trash and floating debris impact the designated uses of water bodies.

Because trash consists of diverse materials, including plastic, state regulators and EPA staff described ways in which the Agency could provide additional technical assistance to control trash pollution in water bodies. One state regulator said that the EPA could better support states by recommending numeric thresholds for the aesthetic appearance of water bodies or for noncontact recreational uses of water bodies, such as boating and fishing. Another state regulator explained that EPA technical guidance for developing narrative criteria would help states characterize how trash and plastic impair waterways. An EPA water quality manager we interviewed stated that EPA-developed examples of trash assessment methodologies could help states determine whether waters are impaired.

To help reduce trash in U.S. waterways, the EPA needs to identify and evaluate the obstacles that states face when developing and implementing narrative and numeric criteria, such as the lack of technical guidance regarding the establishment of such criteria and the lack of examples of trash assessment methodologies.

## ***Even When States List Trash as an Impairment, Few Establish TMDLs***

Under CWA Section 303(d), states submit, and the EPA approves, lists of impaired and threatened waters every two years. Since 1996, the following ten states and the District of Columbia have listed about 320 individual water-body segments as impaired due to trash, debris, or floatables: Alaska, California, Connecticut, Hawaii, Illinois, Maryland, Massachusetts, Nebraska, New York, and Pennsylvania.

Once a water body is listed under CWA Section 303(d) as impaired due to trash pollution, the state shall, per the CWA, develop a TMDL to attain and maintain the applicable water quality standard. The state, however, prioritizes development of TMDLs based on the severity of the pollution and the sensitivity of the water body's designated uses, among other factors. As of March 2021, only the District of Columbia and three of the ten states that have listed water bodies as impaired for trash have established TMDLs to control trash pollution:

- The State of California Water Resources Control Board consists of nine regional boards. One of these, the Los Angeles Regional Water Quality Control Board, established trash and debris TMDLs with a numeric target of zero trash in applicable water bodies.
- Together, Maryland and the District of Columbia established a trash TMDL for the Anacostia River, which the EPA approved in 2010. However, in 2016, a nongovernmental organization challenged the EPA's approval because the TMDL did not set limits on the volume of trash that can enter the river; rather, the TMDL established the amount of trash (100 percent) that must be *removed* from the river. In 2018, when the challenge succeeded, the District of Columbia, Maryland, and the EPA began developing a replacement TMDL in response to this litigation. The replacement TMDL has not yet been completed.
- Alaska established several TMDLs that cover trash pollution that were approved by the EPA, including one in 2000 for the Swan Lake Watershed in Sitka, one in 2005 for the Jordan Creek in Juneau, one in 2008 for the Noyes Slough in Fairbanks, and one in 2017 for the Matanuska River in Palmer. Also, in 2000, EPA Region 10 established a debris and solid waste TMDL for Duck Creek in Alaska's Mendenhall Valley, with a numeric target of zero pollution.

Staff in the states we interviewed described challenges with these TMDLs, such as a lack of an implementation plan for nonpoint sources and CWA authorities. The EPA needs to identify these and related obstacles so the Agency's technical resources can assist states' efforts to use the tools established by the CWA to control trash in U.S. waterways.

## ***NPDES Permits for MS4s Incorporate Trash Control Requirements, but Some States Request Additional Assistance***

Approximately 7,550 MS4s in the United States hold either an individual or a general NPDES permit, which regulates their discharges of stormwater that may contain trash and other pollutants into local water bodies. To obtain an MS4 NPDES permit, municipalities must develop stormwater management programs. These programs should include practices and pollution prevention activities to reduce the amount of trash flowing into waterways—for example, public education and outreach, as well as illicit discharge detection and elimination. Some of these practices from municipalities in the states we reviewed include:

- “Within one year of permit issuance, the City shall inventory and evaluate all current trash and recyclable pick-up operations, litter control programs, and public outreach efforts.”

—*Individual MS4 permit for Baltimore, Maryland*

- “Permittees shall implement trash load reduction control actions in accordance with the following schedule and trash generation area management requirements, including mandatory minimum full trash capture systems, to meet the goal of 100 percent trash load reduction or no adverse impact to receiving waters from trash by July 1, 2022.”

—*Individual MS4 permit for San Francisco, California*

Trash control requirements in MS4 NPDES permits can reduce the volume of trash in U.S. waterways. For example, in 2020, Washington, D.C.’s Department of Energy and Environment reported that nearly 127,000 pounds of trash were captured, removed, or prevented from entering the Anacostia River, exceeding the municipality’s goal of 108,347 pounds.

Staff from the California Water Resources Control Board identified two ways in which the EPA could further support their efforts to use the tools of the CWA more effectively. They stated that the EPA could provide grant funding to develop new “Best Management Practices” and to evaluate the effectiveness of existing best practices to reduce trash from stormwater runoff. They also requested that the Agency provide a way to incorporate these into MS4 permits.

### ***EPA Programs and Activities Help Reduce Trash in Waterways***

The Office of Water’s Trash Free Waters program and associated EPA regional activities aim to reduce the amount of trash generated and prevent trash from entering the aquatic environment. In 2016, the Trash Free Waters program published the *Aquatic Trash Prevention National Great Practices Compendium*, which contains examples of activities, technologies, and practices to control trash. The Trash Free Waters program also produces newsletters that contain

information on current activities, upcoming events, and project funding opportunities related to trash prevention and reduction.

After we issued our draft report to the Agency, the EPA's Trash Free Waters program issued two technical guidance documents. The *Trash Stormwater Permit Compendium* provides permit writers with information about specific and measurable trash control provisions for MS4 NPDES permits. The *U.S. EPA Escaped Trash Assessment Protocol* defines a consistent methodology for collecting, identifying, quantifying, and recording trash on land and in waterways.

Regional staff reported other EPA initiatives that involve trash reduction, such as:

- **National Estuary Program.** This EPA program aims to protect and restore the ecological integrity of 28 estuaries of national significance. One way this goal is achieved is via volunteer cleanup events to help control trash. For example, five volunteer cleanup events held in fiscal year 2020 for Florida's Sarasota Bay watershed removed 1,954 pounds of trash.
- **EPA Geographic Programs.** The EPA has developed geographic-based programs to address specific water pollution concerns in its regions. For example, EPA Region 2's New York and New Jersey Harbor & Estuary Program is conducting research to assess the types, sources, and conditions of marine debris in the watersheds of the Passaic, Bronx, Harlem, and Hackensack Rivers. The EPA Gulf of Mexico Division in Region 4 partnered with nongovernmental organizations to undertake a comprehensive assessment of trash sources, transport routes, fate, and enforcement effectiveness in the Upper Dog River Watershed in Alabama. They plan to use this information to reduce trash by at least 50 percent in one stream segment, as well as to develop and test a methodology for strategically reducing trash and litter throughout the entire watershed.
- **Urban Waters Partnership.** The EPA awarded Massachusetts' Mystic River Watershed Association \$15,000 so that volunteers could collect and categorize trash from various locations to identify major litter areas and the most prevalent types of trash. In one locality, volunteers removed 80 pounds of trash from waterways.

The EPA and its regional, state, and local partners are working to reduce trash entering U.S. waters. Through source reduction, cleanup efforts, technical guidance, and financial assistance, trash pollution can be reduced.

## Conclusions

Trash, which includes plastic, is a water pollutant. In U.S. waterways, the presence of trash and plastic can degrade habitats, harm wildlife, and prevent designated uses such as fishing or recreation. Ten states and the District of

Columbia have identified trash as a water quality impairment on CWA Section 303(d) lists, and three of these states and the District of Columbia have developed TMDLs related to trash pollution. NPDES MS4 permits are another regulatory tool that states and municipalities can use to control the volume of trash entering U.S. waterways. The EPA has developed technical guidance to help these entities reduce the volume of trash from stormwater discharges, as well as to estimate the volume of trash on land and in waterways. To control trash more effectively as a water pollutant, however, the Office of Water needs to identify and evaluate—and then help mitigate—state and local obstacles to implementing the tools of the CWA.

## Recommendations

We recommend that the assistant administrator for Water:

1. Evaluate the obstacles to implementing the Clean Water Act to control trash in U.S. waterways and provide a public report describing those obstacles.
2. Develop and disseminate strategies to states and municipalities for addressing the obstacles identified in the evaluation from Recommendation 1. These strategies may include guidance regarding how to develop narrative water quality criteria, consistent assessment and measurement methodologies, and total maximum daily loads for trash pollution.
3. Support state and local municipalities' efforts to control trash through National Pollutant Discharge Elimination System permits for municipal separate sewer systems by publishing guidance documents, such as the *Trash Stormwater Permit Compendium* and the *U.S. EPA Escaped Trash Assessment Protocol*.

## Agency Response and OIG Assessment

The Agency agreed with our recommendations and proposed initial corrective actions in response to our draft report; the EPA's initial response is in Appendix B. We reached out to the EPA for clarification on the corrective actions proposed, and the Agency responded on April 19, 2021, with revised corrective actions (Appendix C). These revised corrective actions meet the intent of our recommendations.

We consider Recommendations 1 and 2 resolved with corrective actions pending. With the April 2021 publication of the *Trash Stormwater Permit Compendium* and the *U.S. EPA Escaped Trash Assessment Protocol*, the Agency completed Recommendation 3.

# **Status of Recommendations and Potential Monetary Benefits**

## RECOMMENDATIONS

Rec. No.	Page No.	Subject	Status <sup>1</sup>	Action Official	Planned Completion Date	Potential Monetary Benefits (in \$000s)
1	9	Evaluate the obstacles to implementing the Clean Water Act to control trash in U.S. waterways and provide a public report describing those obstacles.	R	Assistant Administrator for Water	12/31/21	
2	9	Develop and disseminate strategies to states and municipalities for addressing the obstacles identified in the evaluation from Recommendation 1. These strategies may include guidance regarding how to develop narrative water quality criteria, consistent assessment and measurement methodologies, and total maximum daily loads for trash pollution.	R	Assistant Administrator for Water	4/30/23	
3	9	Support state and local municipalities' efforts to control trash through National Pollutant Discharge Elimination System permits for municipal separate sewer systems by publishing guidance documents, such as the <i>Trash Stormwater Permit Compendium</i> and the <i>U.S. EPA Escaped Trash Assessment Protocol</i> .	C	Assistant Administrator for Water	4/30/21	

<sup>1</sup> C = Corrective action completed.

R = Recommendation resolved with corrective action pending.

U = Recommendation unresolved with resolution efforts in progress.

## **Internal Control Assessment**

This table identifies which internal control components and underlying principles are significant to our audit objective.

<b>Internal control components are significant to the audit objective</b>		<b>Internal control principles are significant to the audit objective</b>	
<b>X</b>	<b>Control Environment</b> The foundation for an internal control system. It provides the discipline and structure to help an entity achieve its objectives.	<b>X</b>	1. The oversight body and management should demonstrate a commitment to integrity and ethical values.
		<b>X</b>	2. The oversight body should oversee the entity's internal control system.
		<b>X</b>	3. Management should establish an organizational structure, assign responsibilities, and delegate authority to achieve the entity's objectives.
		<b>X</b>	4. Management should demonstrate a commitment to recruit, develop, and retain competent individuals.
		<b>X</b>	5. Management should evaluate performance and hold individuals accountable for their internal control responsibilities.
<b>X</b>	<b>Risk Assessment</b> Management assesses the risks facing the entity as it seeks to achieve its objectives. This assessment provides the basis for developing appropriate risk responses.	<b>X</b>	6. Management should define objectives clearly to enable the identification of risks and define risk tolerances.
		<b>X</b>	7. Management should identify, analyze, and respond to risks related to achieving the defined objectives.
		<b>X</b>	8. Management should consider the potential for fraud when identifying, analyzing, and responding to risks.
		<b>X</b>	9. Management should identify, analyze, and respond to significant changes that could impact the internal control system.
<b>X</b>	<b>Control Activities</b> The actions management establishes through policies and procedures to achieve objectives and respond to risks in the internal control system, which includes the entity's information system.	<b>X</b>	10. Management should design control activities to achieve objectives and respond to risks.
		<b>X</b>	11. Management should design the entity's information system and related control activities to achieve objectives and respond to risks.
		<b>X</b>	12. Management should implement control activities through policies.
<b>X</b>	<b>Information and Communication</b> The quality information management and personnel communicate and use to support the internal control system.	<b>X</b>	13. Management should use quality information to achieve the entity's objectives.
		<b>X</b>	14. Management should internally communicate the necessary quality information to achieve the entity's objectives.
		<b>X</b>	15. Management should externally communicate the necessary quality information to achieve the entity's objectives.
<b>X</b>	<b>Monitoring</b> <b>Activities</b> management establishes and operates to assess the quality of performance over time and promptly resolve the findings of audits and other reviews.	<b>X</b>	16. Management should establish and operate monitoring activities to monitor the internal control system and evaluate the results.
		<b>X</b>	17. Management should remediate identified internal control deficiencies on a timely basis.

Source: Based on internal control components and principles outlined in GAO-14-704G, *Standards for Internal Control in the Federal Government* (also known as the "Green Book"), issued September 10, 2014.

## Agency Response to Draft Report



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF WATER

### MEMORANDUM

**SUBJECT:** Response to the Office of Inspector General Draft Report, Project No. OA&E-FY19-0086, "Office of Water Initiatives to Address Threats and Risks to Public Health and the Environment from Trash, Including Plastic Pollution, Within the Waters of the United States," dated March 1, 2021

**FROM:** Radhika Fox  
Acting Assistant Administrator

Fox, Radhika

Digitally signed by Fox,  
Radhika  
Date: 2021.04.01  
13:20:31 -07'00'

**TO:** Kathlene Butler  
Director  
Water Directorate Office of Evaluation

Thank you for the opportunity to respond to the issues and recommendations in the subject draft evaluation report. Following is a summary of the U.S. Environmental Protection Agency's (EPA or Agency) overall position, along with its proposed corrective actions on each of the report's recommendations and estimated completion dates.

### **AGENCY'S OVERALL POSITION**

The Agency appreciates the thoughtful and thorough review of the Office of Water's efforts in this important area. As noted in previous discussions, new federal legislation related to this area was signed into law in December 2020 (Save Our Seas 2.0) and addresses water-related actions that are relevant to this report. We have identified corrective actions for each of the recommendations and believe that these actions will significantly advance our efforts to reduce the levels of trash entering and being carried by our waters.

## AGENCY’S RESPONSE TO DRAFT AUDIT RECOMMENDATIONS

### Agreements

No.	Recommendation	High-Level Corrective Action(s)	Est. Completion Date
1	Evaluate the obstacles to implementing the Clean Water Act to control trash in U.S. waterways, and provide a public report describing those obstacles.	To evaluate the obstacles to implementing the Clean Water Act to control trash in U.S. waterways, EPA will address this recommendation through the development of the “water management” component of the Federal Strategy required under Section 301 of Save Our Seas 2.0. This Strategy will be a public document addressing both the waste and water components related to plastic pollution.	December 31, 2021
2	Develop and disseminate strategies to states and municipalities for addressing the obstacles identified in the evaluation from Recommendation 1. For example, these strategies may include guidance regarding how to develop narrative water quality criteria, consistent assessment and measurement methodologies, and total maximum daily loads for trash pollution.	<p>In response to recommendation 2 OWOW agrees to issue, in collaboration with EPA Regions, national 303(d) guidance for States highlighting the requirement to assemble and evaluate all water quality-related data and information, and use such data/information to determine if ALL applicable WQS are attained (including narrative criteria that encompass trash). The guidance might also include examples of assessment approaches and address the variability that may be appropriate among states/areas, (e.g., WQS can vary significantly among states, WQS allow for different policy and technical judgments by states, water conditions can vary significantly in different regions of the US). OWOW appreciates that OIG already recognizes that scientific understanding in this area is still limited, noting that: “EPA’s research into plastics is in its early stages and that the Office of Research and Development has not yet conducted enough research to determine risks to public health and the environment from plastic exposure.”</p> <p>In FY22, OST will consider assembling a list of example narrative water quality standards for trash/plastic pollution as a resource for interested states and authorized tribes and could also develop a template for such a narrative.</p>	National 303(d) guidance to be addressed in an Integrated Reporting Memo (OWOW) – April 2023.

3	Support state and local municipalities' efforts to control trash through National Pollutant Discharge Elimination System permits for municipal separate sewer systems by publishing guidance documents such as the Trash Stormwater Compendium and the Escaped Trash Assessment Protocol.	To support state and local municipalities' efforts to control trash through permits, the Trash Free Waters Program has developed Escape Trash Assessment Protocol to address the needs of stakeholders who want more detailed information from an assessment methodology in order to help them identify tailored management interventions upstream, and potentially to inform impaired waterbody listing-decisions and stormwater permit trash provisions. EPA will be marketing this protocol actively upon publication.  Both the Trash Stormwater Compendium and the Escaped Trash Assessment Protocol will be published on the Trash Free Waters website, and the Trash Free Waters program and its partners will be engaging in marketing efforts to get word out about these products.	Trash Stormwater Compendium - July 2021.  Escaped Trash Assessment Protocol - July 2021.
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**CONTACT INFORMATION**

If you have any questions regarding this response, please contact Tiffany Crawford, the Office of Water Audit Follow-up Coordinator, at [Crawford.Tiffany@epa.gov](mailto:Crawford.Tiffany@epa.gov) or 202-566-2375.

cc: John Goodin (OWOW), Sandra Connors (OWOW), Katherine Weiler (OWOW), Brian Frazer (OWOW), Robert Benson (OWOW), Romell Nandi (OWOW), James Havard (OWOW), Deborah Nagle (OST), Robert Wood (OST), Shari Barash (OST), Kathryn Gallagher (OST), Erica Weyer (OST), Andrew Sawyers (OWM), Christopher Kloss (OWM), Wynne Miller (OWM), Rachel Urban (OWM), Steven Moore (OW), Macara Lousberg (OW), Tiffany Crawford (OW), Rick Picardi (ORCR), Krystal Krejcik (ORCR), Tim Roach (OIG), Jayne Lilienfeld-Jones (OIG), Nirvair Stein (OIG), Morgan Collier (OIG).

## ***Agency Revisions to Proposed Corrective Actions***

No.	Recommendation	High-Level Corrective Action(s)	Est. Completion Date
1	Evaluate the obstacles to implementing the Clean Water Act to control trash in U.S. waterways, and provide a public report describing those obstacles.	To evaluate the obstacles to implementing the Clean Water Act to control trash in U.S. waterways, EPA will engage in discussion with states, and will address this recommendation through the development of the “water management” component of the “water management” component of the Federal Strategy required under Section 301 of Save Our Seas 2.0. This Strategy will be a public document addressing both the waste and water components related to plastic pollution, <b>and will evaluate the requirements and hurdles posed by the Clean Water Act, as well as other regulatory requirements and non-regulatory actions.</b>	December 31, 2021
2	Develop and disseminate strategies to states and municipalities for addressing the obstacles identified in the evaluation from Recommendation 1. For example, these strategies may include guidance regarding how to develop narrative water quality criteria, consistent assessment and measurement methodologies, and total maximum daily loads for trash pollution.	<p>2.1: In response to recommendation 2 OWOW agrees to issue, in collaboration with EPA Regions, national 303(d) guidance for States highlighting the requirement to assemble and evaluate all water quality-related data and information, and use such data/information to determine if ALL applicable WQS are attained (including narrative criteria that encompass trash). In developing the guidance, OWOW will work with regions and states to seek to identify examples of assessment approaches with regards to trash, and address the variability that may be appropriate among states/areas, (e.g., WQS can vary significantly among states, WQS allow for different policy and technical judgments by states, water conditions can vary significantly in different regions of the US).</p> <p>OWOW appreciates that OIG already recognizes that scientific understanding in this area is still limited, noting that: “EPA’s research into plastics is in its early stages and that the Office of Research and Development has not yet conducted</p>	National 303(d) guidance to be addressed in an Integrated Reporting Memo (OWOW) – April 2023.

	<p>enough research to determine risks to public health and the environment from plastic exposure.”</p> <p>2.2: OST will compile a list of existing trash and plastic pollution narrative criteria provisions; and</p> <p>2.3: Determine by April 2022 further actions based on the breadth and quality of those narratives</p> <p>2.4: If EPA determines that there are examples of state narratives that are suitable for use by other states EPA would post example narratives on EPA's website.</p>	<p>December 2021</p> <p>April 2022</p> <p>September 2022</p>
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## ***Distribution***

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