



U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF INSPECTOR GENERAL

Ensuring clean and safe water

Atlanta Is Largely in Compliance with Its Combined Sewer Overflow Consent Decree, but Has Not Yet Met All Requirements

Report No. 18-P-0206

May 30, 2018



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Abbreviations

CWA	Clean Water Act
CSO	Combined Sewer Overflow
EPA	U.S. Environmental Protection Agency
Georgia EPD	Georgia Environmental Protection Division
NPDES	National Pollutant Discharge Elimination System
OIG	Office of Inspector General
SSO	Sanitary Sewer Overflow

Cover photo: Atlanta's R.M. Clayton Pump Station was built as a result of the city's Combined Sewer Overflow consent decree. (EPA OIG photo)

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At a Glance

Why We Did This Project

The Office of Inspector General (OIG) for the U.S. Environmental Protection Agency (EPA) performed this audit based on a congressional request to examine the city of Atlanta's compliance with requirements of the 1998 Combined Sewer Overflow (CSO) consent decree, and EPA Region 4's oversight of the city's consent decree compliance.

CSOs occur when untreated or partially treated human and industrial waste, toxic materials, and debris mix with stormwater and flow into surface waterbodies. The consent decree also addressed Sanitary Sewer Overflows (SSOs), which occur when sewage escapes sewer systems and flows into streets and surface waterbodies.

The consent decree directed Atlanta to develop and implement maintenance programs, construct wastewater treatment infrastructure, and report progress to the EPA and the state of Georgia.

This report addresses the following:

- *Ensuring clean and safe water.*

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Atlanta Is Largely in Compliance with Its Combined Sewer Overflow Consent Decree, but Has Not Yet Met All Requirements

What We Found

Atlanta, Georgia, completed its CSO capital improvement projects by 2008 and complies with current reporting requirements, but the city has not yet achieved all consent decree requirements. Atlanta continues to work on sewer system construction projects under a 1999 amendment that deals primarily with Atlanta's sewer collection system, including the separate portion of the sewer system. The city has until 2027 to complete those projects.

Decreases in sewage overflows from Atlanta's wastewater treatment facilities and sewage transmission pipes reduce the risk of city residents being exposed to pathogens.

Atlanta's CSO system continues to experience periodic violations of its National Pollutant Discharge Elimination System permits due to high levels of fecal coliform, operations-related errors leading to high levels of chlorine in treated wastewaters, and missed water quality tests. SSOs continue to occur and pose risks to human health and the environment. Untreated household and human waste continues to be released into city streets and surface waters during SSO events.

EPA Region 4 coordinates with the Georgia Environmental Protection Division (Georgia EPD) to implement the document review and inspection oversight controls established in the consent decree. The consent decree requires Atlanta to submit quarterly reports to EPA Region 4 and the Georgia EPD, which the city is providing. In addition, Region 4 chairs quarterly meetings to discuss the implementation of the consent decree with the city and the Georgia EPD. The Chattahoochee Riverkeeper, a co-plaintiff in the case and party to the settlement, can also attend these meetings.

Based on the results of our analysis, we have no recommendations.



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

THE INSPECTOR GENERAL

May 30, 2018

MEMORANDUM

SUBJECT: Atlanta Is Largely in Compliance with Its Combined Sewer Overflow Consent Decree, but Has Not Yet Met All Requirements
Report No. 18-P-0206

FROM: Arthur A. Elkins Jr.

A handwritten signature in black ink, appearing to read "Arthur A. Elkins Jr.", is written over the printed name.

TO: Trey Glenn, Regional Administrator
Region 4

This is our report on the subject audit conducted by the Office of Inspector General (OIG) of the U.S. Environmental Protection Agency (EPA). The project number for this audit was OPE-FY17-0014. This report represents the opinion of the OIG and does not necessarily represent the final EPA position.

You are not required to respond to this report because this report contains no recommendations. 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.

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Purpose

In February 2017, a member of Congress requested that the U.S. Environmental Protection Agency's (EPA's) Office of Inspector General (OIG) review Atlanta's compliance with the city's Combined Sewer Overflow (CSO) consent decree, and EPA Region 4's oversight of Atlanta's consent decree compliance. We initiated this audit to determine whether Atlanta is complying with the 1998 CSO consent decree requirements, and to evaluate EPA Region 4's internal controls for overseeing compliance with the consent decree.

Background

Raw sewage overflows and inadequately controlled stormwater discharges from municipal sewer systems cause sewage backups into homes and introduce a variety of harmful pollutants into U.S. waterways, including disease causing organisms, metals and nutrients. These pollutants threaten communities' water quality and can contribute to disease outbreaks, beach and shellfish bed closings, flooding, and fishing advisories.

In 1994, *The Atlanta Journal and Constitution* reported that the impacts from sewage overflows to Atlanta's public parks and rivers impeded the city's ability to improve water quality. The rainwater from heavy storms overwhelmed the sanitation system and washed raw sewage into city parks, such as the city's Piedmont Park. According to the article, tests that researchers conducted for diversity of fish and insect species at Peachtree Creek, where much of Atlanta's sewage outflows were occurring, proved "very disappointing"; and at Utoy Creek, "only a few fish were found, and those had lesions or ulcers."¹

Controlling Sewage Before It Reaches Surface Water

In many major municipalities like Atlanta, sewage primarily reaches surface water in two ways:

- **Combined Sewer Overflows (CSOs).** During dry weather, the flow in combined sewers consists only of sewage, which is directed to a wastewater treatment facility. However, during periods of high precipitation, the increased volume in a combined sewer results in a portion of the combined flow of stormwater runoff and sewage being discharged directly to surface waters (e.g., oceans, rivers, creeks, bays and streams).
- **Sanitary Sewer Overflows (SSOs).** When sewer blockages from debris or water infiltration from other connections to separate sanitary sewers prevent sewage from freely flowing to wastewater treatment facilities,

¹ "Troubled Waters: The Strangling of the Chattahoochee," *The Atlanta Journal and Constitution*, June 24, 1994.

sewage can overflow from pipes into surrounding areas. Rain-induced overflows occur when sewer systems are overcome by large volumes of rainwater, but dry weather events may occur when blockages in the system cause sewage to overflow.

Both CSO and SSO events pollute waterways and increase the risk of human and other animal exposure to pathogens. Further, both CSO and SSO discharges of untreated sewage can cause a violation of a state's water quality standards and impact designated uses, like fishing and swimming, in affected waters.

The EPA authorizes most states, including Georgia, to issue permits to control sewage under the National Pollutant Discharge Elimination System (NPDES). The NPDES permits for wastewater and stormwater treatment facilities establish limits for how much pollution these facilities may discharge to surface waters based on water quality standards established by the state. For example, Atlanta's NPDES permits limit the amount of metals and fecal coliform the city's facilities may release into surface water bodies based on Georgia's water quality standards. If a facility does not comply with its NPDES permit, state or federal regulators can take enforcement action to bring the facility back into compliance. This may involve one or more of the following: a settlement agreement leading to a consent decree, civil penalties (fines), requiring the facility to take actions that will bring it into compliance with environmental laws, or having the facility perform supplemental environmental projects or mitigation projects.

Atlanta Consent Decree Was Designed to Reduce Water Pollution from Sewer Overflows and Improve NPDES Compliance

In 1995, citizen plaintiffs filed a complaint alleging that the city of Atlanta violated NPDES permits at several of its CSO treatment facilities. In 1997, the U.S. District Court for the Northern District of Georgia entered a summary judgment against the city and in favor of the citizen plaintiffs on the issue of liability. The District Court ruled that Atlanta violated the terms of its NPDES permits for the CSO treatment facilities. The judge held that the city violated several NPDES permit conditions, including failing to meet water quality standards for water in culverts and fecal coliform bacteria levels in receiving streams.



Atlanta Department of Watershed Management's West-Area Tunnel Shaft (EPA OIG photo)

The United States and the state of Georgia also alleged that Atlanta violated its permits at several treatment facilities, and the federal and state governments filed

suit against the city in 1998. Later that year, the United States, the state of Georgia, and citizen plaintiffs entered into a consent decree with Atlanta, which required the city to improve the following:

- Full compliance with NPDES permits for CSO control facilities, the Georgia Water Quality Control Act, and the Clean Water Act.
- The elimination of all unpermitted discharges from Atlanta's combined sewer system.

The consent decree levied \$2.5 million in civil penalties against Atlanta. The decree also required the city to improve its operations and maintenance activities, and make multimillion dollar improvements to its CSO facilities.

CSO discharges of untreated or partially treated sewage can impair a state's water quality and impact fishing and swimming in affected waters. The *City of Atlanta CSO Remedial Measures Plan*, published in 2002, indicated the combined sewer control facilities recorded CSO events about 50 to 70 times per year. Among the requirements in the consent decree: Atlanta agreed to reduce the number of CSO overflows to no more than four per year.

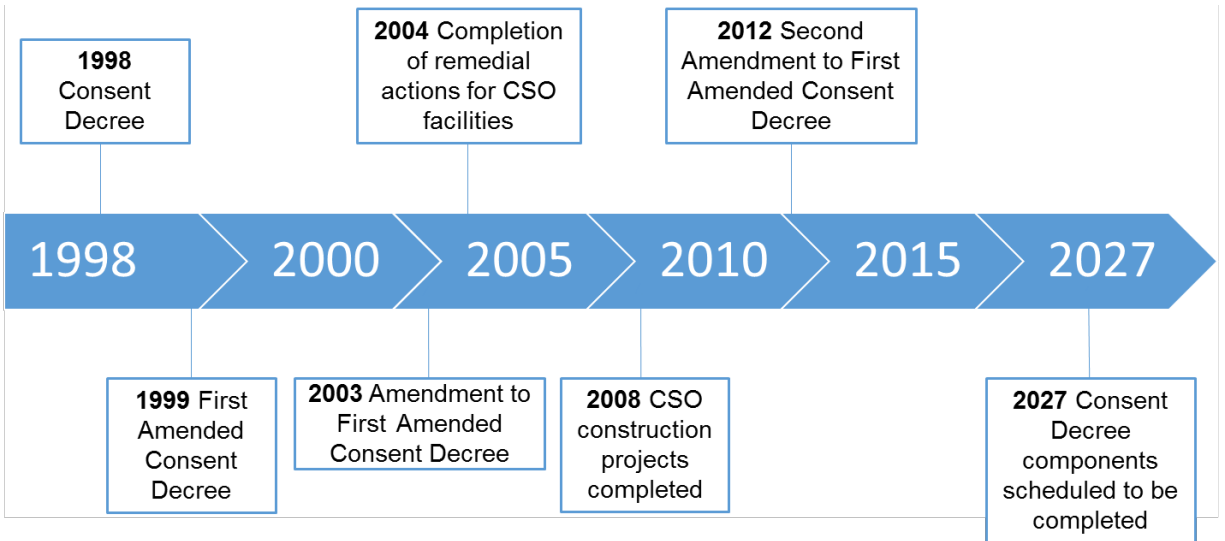
In 1999, the EPA and the state of Georgia entered into a First Amended Consent Decree, wherein Atlanta was required, among other things, to make improvements to its four wastewater treatment facilities and its wastewater collection and transmission systems to reduce SSO events. The objective of the consent decree and its amendments directed Atlanta to do the following:

- Achieve full compliance with the CWA, the Georgia Water Quality Control Act, and all NPDES permits.
- Eliminate all unpermitted discharges.
- Eliminate all SSOs.

Since 1999, the U.S. District Court for the Northern District of Georgia² has approved two additional amendments to the consent decree (Figure 1). A 2003 amendment allowed Atlanta to change some of its sewer system capital improvement projects, and a 2012 amendment granted the city an extension until 2027 to complete all construction projects for its sewage collection and transmission system.

² U.S. District Court for the Northern District of Georgia, Atlanta Division.

Figure 1: Consent decree timeline



Source: OIG summary of consent decree milestones and information provided by the city of Atlanta.

The 1998 consent decree requires Atlanta to submit quarterly progress reports to the EPA and the Georgia Environmental Protection Division (Georgia EPD). The reports allow federal and state agencies to monitor the implementation of consent decree requirements, and the agencies are notified of any problems, including NPDES permit violations. Region 4 and Georgia EPD staff also hold quarterly meetings with staff from the city to discuss consent decree implementation, although these meetings are not required under the consent decree.

Responsible Office

The responsible office for this report is EPA Region 4. The Water Protection Division within Region 4 oversees the consent decree.

Scope and Methodology

We conducted our work from April 2017 to February 2018. We conducted this performance audit 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 objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

We reviewed the 1998 consent decree and its amendments, as well as documents that identify internal control principles for effectively operating government programs. We collected and analyzed city planning documents and quarterly

progress reports. We interviewed staff and managers from EPA Region 4's Water Protection Division, the Georgia EPD's Watershed Compliance Branch, the Atlanta Department of Watershed Management, and the Chattahoochee Riverkeeper. We used the U.S. Government Accountability Office's *Standards for Internal Control in the Federal Government* to evaluate EPA Region 4's oversight of Atlanta's consent decree compliance.

Results

Atlanta Is Complying with Consent Decree Requirements for Construction and Reporting, but SSO and NPDES Issues Remain

As of 2017, Atlanta was in compliance with major consent decree requirements for construction and reporting, but SSO and NPDES permit compliance issues remained. Continued noncompliance and SSO events lead to contaminated surface water and an increased risk that waterborne pathogens will affect recreational users of water. Based on the current agreement, Atlanta will continue implementing the consent decree until 2027.

Atlanta Completed CSO Construction, Meets CSO Target and Submits Required Reports

In 2008, Atlanta completed capital improvement projects approved by the Georgia EPD and EPA Region 4 pertaining to the CSO system. After completing construction and operational modifications, the city reported very few CSO events. Prior to the construction and modifications, the *City of Atlanta CSO Remedial Measures Plan* indicated the control facilities recorded overflows 50 to 70 times per year. For the period of 2009 through 2017, the city recorded a total of 10 CSO events, with no more than four in any one year. This achieves the target noted in the consent decree.

The city also completes and makes publicly available quarterly reports that describe ongoing maintenance and operation activities, NPDES permit violations, CSO events, and plans for future work. These reports help EPA Region 4 staff and the Georgia EPD to monitor progress toward achieving the clean water compliance requirements of the consent decree.

SSO Events Continue

The 1999 First Amended Consent Decree required significant construction improvements to wastewater treatment facilities and pipes throughout the sanitary sewer system, with a goal of eliminating all SSOs. The city completed all remedial actions for its four wastewater treatment facilities, and the District Court terminated that portion of the consent decree in 2004.

In 2012, Atlanta reported to the District Court that the city had reduced the volume of sewage overflows by 95 percent since 2004. The court also granted the city’s request to extend the construction period to 2027. The court cited, among other reasons, the environmental results from work performed and the costs of future work, which would be funded by a 252-percent increase in water and sewer rates and a 1 percent municipal sales tax.

The city of Atlanta’s progress reports from 2013 through 2017 indicate that SSOs continue to occur during wet weather and dry weather, sending between 1.3 and 9.5 million gallons of sewage per year from sewage pipes into communities and local waterways (Table 1). Since the approval of the 2012 amendment extending the construction period for sanitary sewer systems, reports show that Atlanta has not made sustained progress toward reducing the number of SSOs.

Table 1: Reported sanitary sewer overflows

	2013	2014	2015	2016	2017
Rain induced	6	9	31	10	13
Dry weather	202	239	264	262	266
<i>Millions of gallons</i>	3.6	9.5	4.9	1.3	2.0

Source: OIG analysis of data from Atlanta’s Watershed Department.

The city may not succeed in eliminating all future events until all construction projects are completed in 2027, which is the court-approved completion year. At the end of 2017, Atlanta reported that it completed 72 percent of its sewer system construction projects and finished two of its six sewershed construction projects. The city has spent 56 percent of its projected construction funds (\$1.07 billion of the estimated \$1.90 billion) for its sewer system construction projects. According to the city, construction in the four remaining sewersheds will be completed in 2020, 2025, 2026 and 2027.

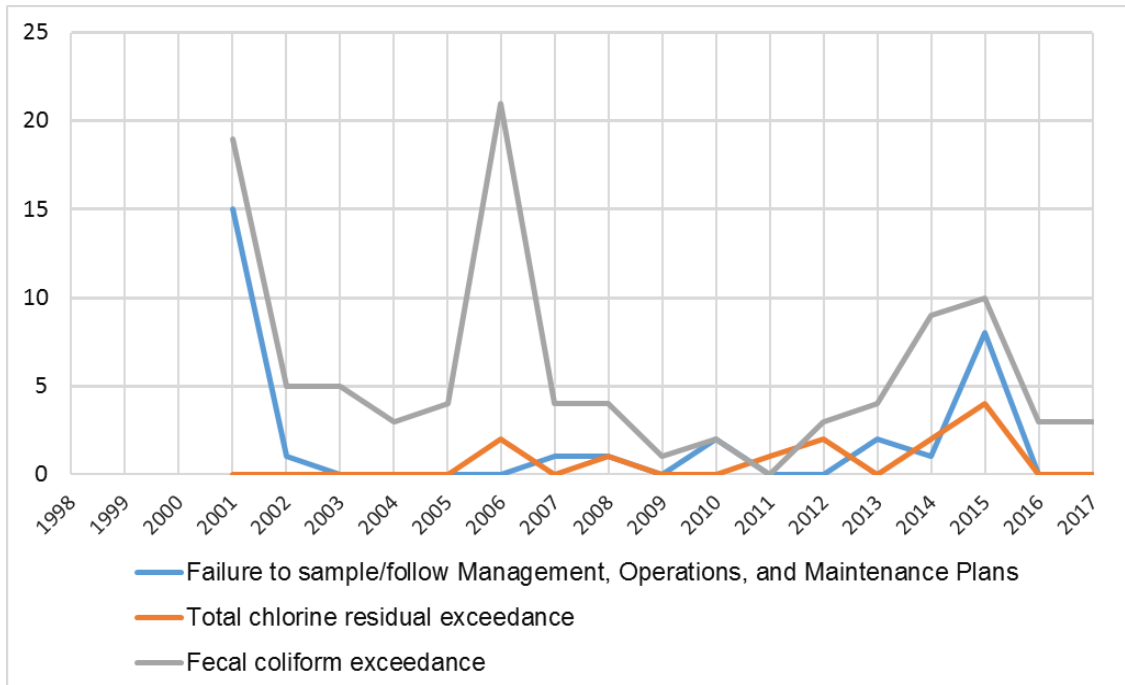
In the meantime, SSOs continue and accounted for an average of 14 rain-induced overflows and 242 dry-weather overflows between 2013 and 2016—the years for which complete data are available. Until the city achieves the consent decree’s objective to eliminate all SSOs, these overflows pose risks to human health and the environment.

NPDES Permit Violations Continue

Atlanta also has not yet achieved the consent decree objective of complying with its NPDES permits. Noncompliance can degrade water quality and increase the risk that waterborne pathogens will affect recreational users of

water. From 2001 through 2017, NPDES violations have generally averaged eight per year, with significant increases occurring in 2001, 2006 and 2015 (Figure 2).

Figure 2: Number of NPDES permit violations



Source: OIG analysis of data from Atlanta’s Watershed Department. Data were not reported prior to 2001.

Between 2013 and 2017, Atlanta reported 29 fecal coliform exceedances. In most cases, the exceedances were 15 to 30 times above NPDES permit limits. Untreated or partially treated discharges from combined sewer facilities led to high levels of fecal coliform where the water samples were collected. Over the 4-year period, operations-related violations of the NPDES permit occurred, including 11 failure-to-sample violations, or violations of management, operation and maintenance programs, and six chlorine residual exceedances. Under the consent decree, Atlanta must pay stipulated penalties when NPDES permit violations occur, and report those violations in quarterly reports. Our analysis indicates the city reported payments of stipulated penalties for NPDES permit violations.

EPA Region 4 Implements the Document Review and Inspection Oversight Controls in the Consent Decree

EPA Region 4 implements the oversight controls established in the consent decree and coordinates with the Georgia EPD to track Atlanta’s compliance with consent decree requirements. EPA Region 4 and the Georgia EPD use their collective authority to monitor implementation of the consent decree:

- **The city is required to submit all planning documents and progress reports to EPA Region 4 and the Georgia EPD.** Both federal and state governments review these documents.
- **Quarterly reporting on progress and consent decree violations, such as NPDES permit violations, SSO events and CSO events are required.** The city submits these reports to EPA Region 4 and the Georgia EPD, and certifies the information contained in the quarterly reports is true, accurate and complete.
- **The EPA and the state are allowed to enter facilities at any time to conduct inspections as needed.** This allows staff to verify data or information submitted to EPA Region 4 or the Georgia EPD, obtain water samples from the utility, review records that are required to be kept per consent decree terms, and conduct inspections. Both EPA Region 4 and the Georgia EPD have conducted reviews of Atlanta’s facilities. According to a staff member monitoring the consent decree, EPA Region 4 and the state’s site reviews of facilities involved evaluating compliance with consent decree provisions, or permit provisions, which are incorporated into the consent decree.

EPA Region 4’s oversight activities have changed over time. During early implementation of the consent decree, regional staff reviewed and approved wastewater infrastructure construction plans, remedial action plans, and operations and maintenance program plans. Region 4 now oversees consent decree compliance by reviewing quarterly reports and conducting quarterly meetings with city staff, the Georgia EPD, and the Chattahoochee Riverkeeper—a co-plaintiff in the case and party to the settlement. EPA Region 4’s quarterly meetings with Atlanta and the Georgia EPD are not required by the consent decree, but these meetings provide additional opportunities to monitor the implementation of the consent decree.

Conclusion

Full implementation of Atlanta’s consent decree could lead to substantial improvements in surface water quality in the Chattahoochee and South rivers. The city has until 2027 to complete its sanitary sewer construction projects. To date, reports show that Atlanta’s compliance with the consent decree resulted in fewer reported CSOs and improved water quality. However, SSOs and NPDES permit violations continue to occur. Atlanta has not yet achieved the consent decree goals to fully comply with its NPDES permits and to eliminate all SSOs.

The controls that Region 4 uses to oversee the Atlanta consent decree and its amendments provide regional staff with information about the city’s progress, opportunities to raise concerns, and tools for intervening if the state and city do

not have adequate responses to questions. Based on the results of our analysis, we have no recommendations.

Agency Response and OIG Evaluation

Region 4 provided an email response to our draft report. Region 4 concurred with the report's findings and offered technical comments. We made revisions to the report based on those comments.

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