

STATE ENVIRONMENTAL REGULATION

Expert Analysis

State, City Agree to Modify 'Combined Sewer Overflow' Rules

Combined sewer systems, often found in large urban areas, are designed to collect stormwater, domestic sewage, and industrial wastewater in one pipe and transport these materials to water pollution control plants for treatment prior to discharge into water bodies. During periods of heavy rainfall or snow melt, the volume of the combined flow can exceed the capacity of the water pollution control plants, and will enter the water bodies without treatment. Referred to as “Combined Sewer Overflows” (CSOs), these discharges of untreated domestic sewage, industrial wastewaters, and stormwater can contribute to violations of water quality standards and are “point sources” subject to National Pollutant Discharge Elimination System permit requirements under the federal Clean Water Act.¹

Nearly two decades ago, in 1992, the New York State Department of Environmental Conservation (DEC) and the New York City Department of Environmental Protection (DEP) entered into an administrative consent order relating to the problem of CSOs from the City of New York’s massive combined sewer system.² The 1992 consent order was modified in 1996 and superseded in 2005; the 2005 consent order itself was modified in 2008 and 2009.³

These consent orders required that the DEP construct multiple “gray infrastructure” projects, including sewer related facilities, outfall and sewer improvements, CSO retention facilities, in-line storage facilities, storage tanks, pumping stations, and

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additional separate sewers, among other things, on a citywide basis between 1992 and 2023, at a cost of billions of dollars.⁴ Such projects work in concert with green infrastructure projects, an approach to wet weather management that is cost-effective, sustainable, and environmentally friendly. Green infrastructure projects, such as permeable pavement, decrease the amount of waste water that enters the system whereas gray infrastructure projects, such as sewers, carry waste water away.

CSO volume reductions do not come cheap. The city estimates it will require a total of \$2.4 billion in both public and private investments in green infrastructure projects to meet the terms of the 2011 consent order over the next 20 years.

Now, the DEC and the DEP have reached a draft agreement, embodied in the “2011 Consent Order,” regarding CSOs that further modifies and supplements the 2005 consent order and includes a number of new projects and milestones.⁵ Significantly, the 2011 Consent Order includes a 20-year citywide “green infrastructure” program component that is intended to reduce the volume of stormwater and snow melt entering the sewer system.⁶ Green infrastructure technologies include green roofs, trees and tree boxes, blue roofs, permeable pavement, rain barrels and cisterns, rain gardens, pocket wetlands,

and vegetated sidewalk swales and median strips. Green infrastructure technologies reduce or keep wet weather flows such as rainwater and snow melt out of the sewer system, thus cutting back on CSOs.⁷

The Finances

Given the state of the economy and the city’s finances, the costs of the agreement are important to keep in mind. From an economic perspective, the 2011 Consent Order contains important cost savings for the city, allowing it to defer the construction of \$2 billion worth of “gray infrastructure” projects⁸—CSO tunnels for Newtown Creek (in Brooklyn and Queens) and Flushing Bay (in Queens), which are estimated to cost \$1 billion each—until 2017 to allow time to determine if green infrastructure projects can serve as effective alternatives to large-scale gray infrastructure facilities.⁹

The 2011 Consent Order also substitutes other projects for projects required by the 2005 consent order, which city officials expect will save \$1.4 billion over prior estimates for dealing with the CSO problem.¹⁰ Under the 2011 Consent Order, the city will continue to build \$1.6 billion in gray infrastructure projects to reduce CSOs.¹¹ It also will pay the DEC a \$200,000 penalty, although an additional \$1 million penalty is suspended contingent on the city meeting a future milestone for completing a project to improve performance of the Jamaica Bay wastewater treatment plant.¹²

Green Infrastructure

The heart of the 2011 Consent Order is the proposed expansion of green infrastructure projects to deal with CSOs. First, under the draft agreement, the DEP will undertake two green infrastructure demonstration projects, one each within the Newtown Creek and the Bronx River watersheds; the projects are to be designed to maximize

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capture of stormwater and reduction of CSOs.¹³ The DEP also will spend at least \$3 million to expand the city's existing green infrastructure grant program for an additional three years and include private property owners, businesses, and not-for-profit organizations that propose to reduce or manage stormwater on private property and adjoining public sidewalks.¹⁴

In addition, the DEP is required to invest \$187 million in green infrastructure projects (both public and private) to control the equivalent of stormwater generated by one inch of precipitation on 1.5 percent of impervious surfaces citywide in combined areas by Dec. 31, 2015, as measured against baseline conditions on Jan. 1, 2010. These green infrastructure projects can include application of stormwater control performance standards on public or private development, grants to individuals, organizations, or entities, and public roadway projects.¹⁵

If the city misses this milestone, it must submit a contingency plan to implement more green or gray infrastructure projects to make up any shortfall. If the city implements a contingency plan approved by the DEC and still does not meet the milestones, it must pay a \$250,000 penalty.¹⁶

The DEP also agreed to use its "best efforts" to use citywide green infrastructure projects to manage the equivalent of stormwater generated by one inch of precipitation on 4 percent of impervious surfaces in combined sewer areas, and the equivalent CSO volume reduction associated with that green infrastructure, by Dec. 31, 2020, as measured against baseline conditions on Jan. 1, 2010; that rises to 7 percent by Dec. 31, 2025, and to 10 percent by Dec. 31, 2030.¹⁷ If the DEP's best efforts do not attain these CSO volume reductions by the specified dates, the DEP can avoid the assessment of penalties by submitting an approvable contingency plan (or plans) to the DEC within six months of each deadline. Such a contingency plan (or plans) must contain specific gray or green infrastructure projects sufficient to make up the shortfall in CSO volume reduction from the previous five-year implementation period.¹⁸

CSO volume reductions do not come cheap. The city estimates it will require a total of \$2.4 billion in both public and private investments in green infrastructure projects to meet the terms of the 2011 consent order over the next 20 years.¹⁹

Reporting Requirements

The 2011 Consent Order also contains green infrastructure reporting requirements for the DEP. For example, it has to report on green infrastructure programs every quarter. It also has to submit an annual report, by April 30 of each year, on measures taken to implement the city's Green Infrastructure Plan, which the DEP published in September 2010,²⁰ including institutional steps taken, results from monitoring demonstration projects, material design changes and plans, planned and built green infrastructure installations, the acreage managed and percent of impervious surfaces in combined sewer areas, and an action plan for the following year.²¹

The DEP also must submit certifications by June 30, 2016, June 30, 2021, June 30, 2026, and June 30, 2031, that it has achieved the citywide green infrastructure CSO volume reductions discussed above, reasons for falling short of those targets if it does—or for exceeding them, if that occurs—and any contingency plan or plans needed to make up any shortfall.²²

Conclusion

The 2011 Consent Order has laudable goals: to decrease CSO volumes and improve water quality by capturing more sewage in the sewer system and by using green infrastructure and other source controls to prevent or delay stormwater from entering the sewer system. The costs are substantial, but using green infrastructure and delaying or eliminating certain gray infrastructure projects will save the City of New York substantial funds. Certainly, however, there also are significant costs—to the environment and to New Yorkers—in not meeting the goals set forth in the 2011 Consent Order.

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1. See 33 U.S.C. §1251, et seq.

2. *In the Matter of the Violations of Article 17 of the Environmental Conservation Law*, DEC Case No. CO2-20110512-25 Order on Consent (CSO Order Modification to CO2-20000107-8) ("2011 Consent Order"), at ¶¶5 and 6. The 2011 Consent Order is available online at http://www.dec.ny.gov/docs/water_pdf/csoorder011.pdf.

3. 2011 Consent Order, at ¶6.

4. See letter dated Oct. 19, 2011, from DEP Deputy Commissioner Vincent

Sapienza to DEC Director Joseph DiMura ("Sapienza Letter"), available at http://www.nyc.gov/html/dep/pdf/harbor/cso_consent_wp_2011.pdf.

5. A public meeting on the draft agreement was held on Nov. 9, 2011, and the public comment period ended on Nov. 18, 2011.

6. 2011 Consent Order, at ¶14.

7. 2011 Consent Order, at ¶¶14-25 and Section IV.

8. *Id.*, at ¶7.

9. See "NYSDEC & NYCDEP Reach Innovative Draft Agreement to Improve New York Harbor Water Quality," Oct. 19, 2011, DEC Release ("DEC Press Release"), available at <http://www.dec.ny.gov/press/77894.html>.

10. See Sapienza letter, *supra*.

11. See DEC Press Release, *supra*.

12. *Id.*

13. 2011 Consent Order, at ¶20 and Section III.B.

14. 2011 Consent Order, at Section III.C.

15. *Id.*, at Section IV.A.1.

16. *Id.*, at Section IV.A.5.

17. *Id.*, at Section IV.B.2.

18. *Id.*, at Section IV.B.3.

19. See DEC Press Release, *supra*.

20. The plan is available online at http://www.nyc.gov/html/dep/html/stormwater/nyc_green_infrastructure_plan.shtml.

21. 2011 Consent Order, at Section IV.C.

22. *Id.*, at Section IV. C.5.