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The Gaia Institute

17 October 2006

Honorable James F. Gennaro
Chair of the New York City Council
Committee on Environmental Protection
City Hall
New York, NY 10007

Re: Combined Sewers and Environmental Quality

Dear Chair Gennaro and Members of the Committee on Environmental Protection,

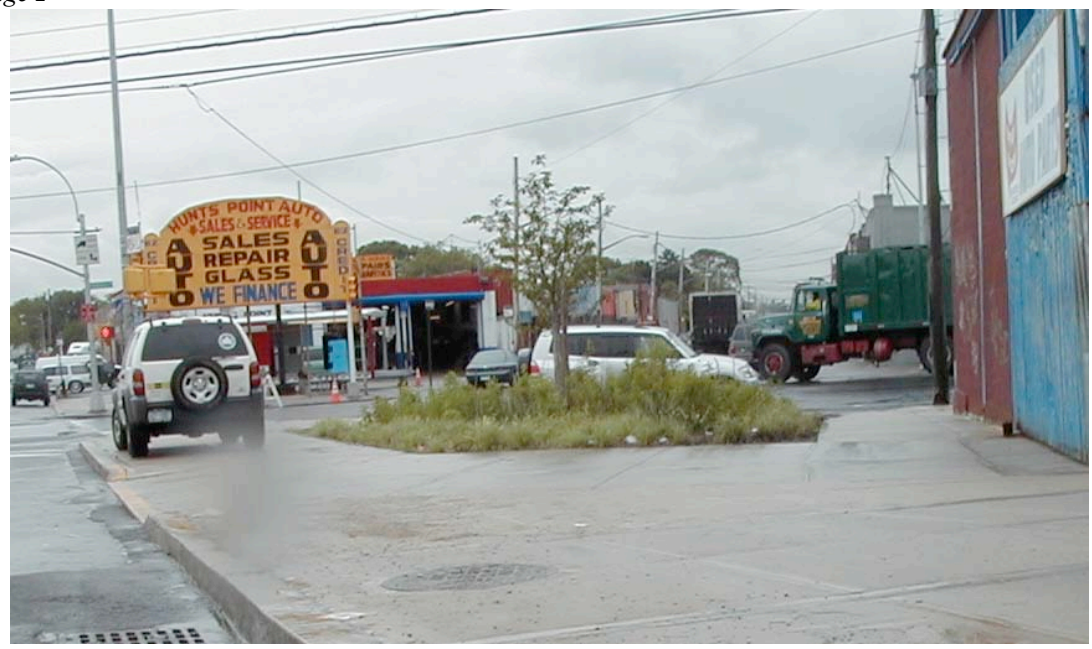
New York City has developed by creating dwellings and economic enterprises on the landscape at the edges of the Hudson, East, Harlem and Bronx River, Jamaica Bay and Long Island Sound. This protects us from the damage of water to living and working structures. This essential function needs our continued support.

At the same time, 450 combined sewers in the City of New York discharge some 40 billion gallons of combined sewer discharge into the estuaries around New York City, carrying with it health risks to the populace and putting stresses on fish and invertebrates in these water bodies.

The City is home to some half a million trees, which have the capacity to move tens of billions of gallons of water from the ground into the atmosphere each year, providing benefits to the citizens of this City.

The City is covered with about 30,000 acres of soil, with capacities of infiltrating between part of a billion to several billon gallons of precipitation per hour. Since an inch of rainfall over the 300 square miles of the City equals about 5 billion gallons, this infiltration capacity merits investigation and testing to evaluate its capacity to incorporate runoff and eliminate or regulate discharge into the combined sewer.

The Parks Department is already on this path, in what I count to be one of the most forward thinking and finest community greening and tree support programs in the country in their modification of the GreenStreet program for enhanced stormwater capture. I have been fortunate to play a small role in working with Parks to look at curb and storage modifications, but the modularity and ready



GreenStreet Park at Hunts Point and Randall Avenues in the Bronx

constructability of these traffic island and street edge greenspaces provides the basic means of quickly transforming impervious infrastructure into a sustaining abode for soil and plant life.

Greening neighborhoods contributes to more than aesthetics. While 40 billion gallons of combined sewer discharge only carries negative impacts with it, on the land, a billon gallons of water can support the growth and development of trees, shrubs, and meadows for a week in 20,000 acres of landscape. A billon gallons of water, evaporated from plant leaves, is the equivalent of two hundred million tons of air conditioning. These kinds of mass flows of cool air could potentially be enough to reverse the negative impacts of the brutally hot days in the City, which suffered some 35 mortalities from the heat wave this past summer.

At critical times, the New York City Department of Environmental Protection has been capable of innovation in the realm of stormwater. The award winning Bluebelt in Staten Island is a case in point, where the agency added value to local properties and the entire landscape by addressing flooding, erosion, and damage to infrastructure by conserving and enhancing forested landscapes and wetlands, while using ecological technologies to stabilize stream banks and hillsides.

We now have the opportunity, even the necessity, to address stormwater in other areas of Staten Island, and also the Jamaica Bay and Bronx River watersheds, as well as in the stormsewersheds of each of the 14-wastewater treatment plants. What the New York City Soil Survey has shown to be especially germane here is that while wetland soils are distributed in a relatively few areas, glacial soils and outwash zones with substantial infiltration rates are distributed throughout much, if not most, of the 300 square miles of New York City.

Because of the glacial history of New York, opportunities exist in all of the stormsewersheds to create enhanced tree plantings, GreenStreet type parks, as well as other greenspaces which can be designed to

capture, hold, and infiltrate quantities of water which can significantly and favorably impact the combined sewer problem.

For example, with the help of the Parks Department and DEP, we were able to construct, with the community at El Jardin del Paraiso, a stormwater capture park. While aspects of the landscape are unique, the commercially available RainStore, pictured below, would be applicable to create catchment and storage capacity of approximately 200 gallons per square meter adjacent to street tree plantings.

The structure shown above occupies 4 square meters on the surface, 4 cubic meters below grade, and holds nearly a thousand gallons. It serves as a cistern at El Jardin del Paraiso to receive and store water from an adjacent 5,000 square foot roof, and is manufactured by Invisible Structures from recycled plastic.

An even more cost-effective structure that can be installed under sidewalks, parking lots, and/or adjacent to plantings is the StormChamber.

These structures will help to:

1) remove nutrients from stormwater;
2) increase infiltration;
3) increase groundwater recharge; and
4) decrease combined sewer discharge.

StormChambers can be installed under parking lots, providing a large storage area for stormwater. About a million gallons of water could be captured beneath a one-acre parking lot. The capital cost here or beneath side walks next to GreenStreet plantings could be as little as a dollar per gallon of water captured, compared to the ≈ $8 per gallon cost of the tanks at Flushing, Paerdegat, and elsewhere.

More than a century ago, Frederick Law Olmstead pointed out in practice that verdant green added values to real estate in New York City. NYC DPR and DEP have furthered this insight and cause with their GreenStreets and Bluebelts. Tests to evaluate the scale of application to the combined sewer problem could be put in place at multiple locations by constructing a number of prototypes. From experience with the GreenStreet Parks, I believe that many of these could be constructed by late winter or spring. Political will and commitment to testing and monitoring could provide a means of assessing how the City might address at once issues of combined sewers, urban heat island, and the protection of the health of it's citizens.

Paul S. Mankiewicz. Ph.D.
Executive Director

Testimony of the Lower East Side Ecology Center
Before the Committee on Environmental Protection
Combined Sewer Overflow Long Term Control Planning
October 17, 2006

Public education is an important part of long term CSO control planning. As city and state agencies consider how to reduce CSO impacts through planning and policy, the 8 million-plus users of the City's drainage system must become a partner in the process. By better understanding the connection between the drains in our houses, the weather outside, and the quality of our local waterfront, an educated public can choose behavior changes and lot-level BMPs that support the efforts of environmental and public health agencies. Regulators, the regulated and citizens can share both the burdens and benefits of addressing long-term CSO control.

Part of our motivation for doing education around the CSO issue is that comprehensive, long-term CSO control will not happen overnight, and so **public health must be adequately protected in the interim**. According to the EPA's CSO Policy, municipalities are required to provide public notification of CSO events. In New York City, such notification is made in the form of beach closures or advisories. Of the almost 600 miles of waterfront in New York City, only 14 miles are public beaches, plus another handful of private beaches. Currently, no advisory is available for the vast remainder of waterfront uses. Water quality information is important for anyone visiting the waterfront but it is of particular concern to the wide range of waterfront users that work, learn and recreate right where CSOs happen. While impacts are felt in the water, the problem is meanwhile originating upland, where stormwater and sewage are being collected. Unbeknownst to most New Yorkers, as we go about our everyday lives, each of us has a potential impact on water quality. **A broadcasted form of public notification of CSO events would serve the dual function of more effectively delivering public health information to waterfront users while enlightening the rest of us on our potential effect on local water bodies.**

The LESEC, as an organization that is active in public open space stewardship, supports the aggressive pursuit of stormwater management best management practices and the partnerships (public-private as well as interagency) and incentives that such work would entail. A wide array of stormwater management processes provide multiple benefits in addition to reducing combined sewer outfall discharges, such as providing treatment for contaminated overland stormwater flows, creating crucial habitat, increasing base flow to natural streams and improving quality of life for the people that live here.

We are concerned that the planning process currently underway will miss out on the existing stormwater BMPs incubating in the grassroots community. A straightforward cost-benefit analysis "green alternatives" does not consider the progress already being made by dedicated professionals in this city. With some time spent investigating what's happening with rainwater harvesting (http://waterresourcesgroup.org/), vegetated roofs (http://www.gaia-inst.org/), and greenstreets stormwater capture (see jeff keiter's talk at http://www.nycswcd.net/files/Green%20Streets%20071906.pdf), DEP would have a richer understanding of what's locally appropriate as well as what partnerships could be formed in the future.

Thank you for the opportunity to give this input.

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TESTIMONY SUBMITTED BY
LAWRENCE M. LEVINE OF THE
NATURAL RESOURCES DEFENSE COUNCIL (NRDC)

HEARING ON COMBINED SEWER OVERFLOWS
BEFORE THE COMMITTEE ON ENVIRONMENTAL PROTECTION OF
THE COUNCIL OF THE CITY OF NEW YORK
OCTOBER 17, 2006

Thank you for the opportunity to testify today on behalf of NRDC and our New York City members. I am Larry Levine, a Project Attorney with NRDC's NY/NJ Harbor-Bight Project.[1]

NRDC appreciates this Committee's interest in conducting oversight on the City's combined sewer overflow ("CSO") problem and specifically on the development of Long Term Control Plans ("LTCPs") by the City's Department of Environmental Protection ("DEP"). NRDC has a longstanding involvement in efforts to abate the City's CSOs. NRDC was a party in the permit proceeding that resulted in a 1992 consent order between the New York State Department of Environmental Conservation ("NYSDEC") and DEP, which required certain improvements

[1] NRDC's NY/NJ Harbor-Bight Project is dedicated to the protection and restoration of marine water quality and the ocean environment in the New York harbor, bight, and adjacent marine waters. In 2002, the NY/NJ Harbor-Bight Project published a report entitled "Cape May to Montauk: A Coastal Protection Report Card," which, among other things, highlighted the persistent regional marine water quality problem caused by nutrient inflows and CSOs/wet weather discharges from the City's wastewater treatment facilities and from wastewater discharges from adjacent municipalities.

related to the City's CSOs. More recently, NRDC intervened in the pending administrative hearing concerning modifications to the State Pollution Discharge Elimination System ("SPDES") permits for New York City's fourteen municipal sewage treatment plants and related facilities. CSOs are again an issue in that proceeding. NRDC is also participating in two of the advisory committees established by DEP in connection with the LTCP development process. One of those committees, referred to by DEP as the "Open Waters" LTCP Citizens Advisory Committee, has come to serve as a hub for discussion of city-wide issues related to CSOs. The other, referred to by DEP as the "Jamaica Bay and Tributaries" LTCP "Stakeholder Team," focuses on issues concerning CSOs in Jamaica Bay and adjacent waters.

In today's testimony, I will briefly describe the significance of New York City's CSO problem, the nature of the City's obligation to address that problem, and the status of the City's efforts. Specifically, I will highlight NRDC's concerns that the DEP-led process for developing LTCPs: (i) has not yet lived up to its promise of full public participation in decision-making, (ii) has not yet successfully integrated into the LTCP planning process essential strategies that would reduce the flow of water into the combined sewer system (rather than seeking only to capture CSO discharges at the "end-of-the-pipe"), and (iii) remains premised on the unacceptable assumption that it will be too difficult to meet existing water quality standards, such that these standards must be weakened for the City to come into compliance with State and Federal law.

New York City's CSO Problem

CSOs, which are the discharge of untreated sewage during and after storm events because of insufficient treatment and storage capacity, remain a significant environmental problem in and around New York City. CSOs are the New York/New Jersey Harbor's most significant source of disease-causing pathogens, fecal coliform bacteria, and – together with treated effluent – excess loadings of nutrients and biochemical oxygen demand ("BOD"), which cause reduced dissolved oxygen levels in receiving waterbodies.[2] CSOs cause beach closures, restrict shellfish uses, and damage our waterways' aesthetic qualities and ability to support aquatic and marine life.

DEP has highlighted CSOs as a significant water pollution problem for the City, and specifically as the cause of outstanding water quality standard ("WQS") violations.[3] NYSDEC has listed eighteen of the City's 26 waterbody segments as impaired and requiring special attention under section 303(d) of the Clean Water Act ("CWA"), specifically as a result of pollution from CSOs.[4] NYSDEC modeling also shows that CSOs are significant sources of both organic pollutants and metals to New York City's waters.[5]

[2] Steinberg, N., D.J. Suszkowski, L. Clark and J. Way, *Health of the Harbor: The First Comprehensive Look at the State of the NY/NJ Harbor Estuary*, Hudson River Foundation, New York, NY (2004) (avail. at http://www.hudsonriver.org/docs/harborhealth.pdf).

[3] *See, e.g.*, NYCDEP, *2002 New York Harbor Water Quality Report* (avail. at http://www.nyc.gov/html/dep/pdf/hwqs2002.pdf); NYCDEP, *2001 New York Harbor Water Quality Report* (avail. at http://www.ci.nyc.ny.us/html/dep/pdf/hwqs2001.pdf); NY/NJ Harbor Estuary Program, Factsheet No. 3, "Combined Sewer Overflows in the New York/ New Jersey Harbor Estuary." *See also* S. Litten, DEC, *Contaminant Assessment and Reduction Project: Water – CARP* (August 2003) (hereinafter "*DEC 2003 CARP Report*") (avail. at http://www.dec.state.ny.us/website/dow/bwam/CARP/carp.pdf).

[4] New York State 2004 Section 303(d) List (Sept. 24, 2004) (available at http://www.dec.state.ny.us/website/dow/303dlist.pdf).

[5] *DEC 2003 CARP Report.*

Jamaica Bay – the ecological "jewel" of the City's waterbodies – provides a compelling demonstration of the need for action on CSOs. From the 1970s to the 1990s, major investments to the city's sewage treatment plants dramatically improved the water quality of Jamaica Bay, but significant problems remain. While dissolved oxygen levels throughout much of Jamaica Bay's open waters have risen, these levels in Grassy Bay and certain other borrow pits, as well as in some tributaries, are often too low to sustain year-round marine life and healthy biodiversity. At least seven highly toxic sediment sites exist in the bay. And since 1986, algae levels have been on the rise and water clarity in Jamaica Bay has declined more than 20 percent. The primary known culprits are CSOs and discharges of treated wastewater from the four sewage treatment plants that encircle the bay. In regard to CSOs, rainfall intensity as low as 0.15 centimeters per hour for 6.7 hours will exceed the limited sewer and plant storage capacity, causing overflow of untreated sewage combined with stormwater through numerous outfalls ringing the bay's waters.[6]

In sum, if New York City is to make further progress in restoring its waterways to "fishable/swimmable" condition, as well as restoring a healthy and sustainable marine ecosystem more generally, it will need to vigorously tackle the CSO problem.

Long Term Control Plans: The City's Obligation to Solve the CSO Problem

Pursuant to the requirements of the federal Clean Water Act and an Administrative Consent Order ("ACO") issued by NYSDEC against the DEP and the City of New York in January 2005,

[6] "Planning for Jamaica Bay's Future: Preliminary Recommendations on the Jamaica Bay Watershed Protection Plan," Submitted to the New York City Council by the Jamaica Bay Watershed Protection Plan Advisory Committee (June 29, 2006), at 3-4 (avail. at http://nbii-nin.ciesin.columbia.edu/jamaicabay/jbwppac/JBAC_Report_062806.pdf).

the City is required to develop LTCPs to reduce or eliminate its CSO discharges to each of the waters surrounding the City.[7] These LTCPs must provide for the implementation of CSO control measures sufficient to ensure compliance with state water quality standards.[8] Under the Clean Water Act, the process of developing LTCPs must include, among other things:

- an assessment of the effectiveness of a "reasonable range of alternatives" to reduce CSO discharges;
- prioritization of the reduction of CSO discharges to environmentally, recreationally, or otherwise "sensitive" areas;
- the establishment of a binding implementation schedule;
- provisions for post-implementation water quality monitoring; and
- "a public participation process that actively involves the affected public in the decision-making to select the long-term CSO controls."[9]

Current Status of the City's Development of LTCPs

The NYSDEC ACO requires the City to submit "Draft LTCPs" for each of its CSO-impacted waters by June 2007.[10] Under the ACO, final LTCPs are due for each waterbody at varying times, ranging from September 2007, to "6 months after [NYSDEC] approval of the [draft LTCP]," to as late as February 2017. In the case of one waterbody, Paerdegat Basin (a tributary of Jamaica Bay), DEP has already submitted a draft LTCP, based primarily upon studies done prior to the ACO. For the remaining waterbodies, DEP has established nine "stakeholder teams"

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[7] *See* 33 U.S.C. § 1342(q)(1); USEPA, "Combined Sewer Overflow Control Policy," dated April 11, 1994 (avail. at http://cfpub.epa.gov/npdes/cso/cpolicy.cfm).

[8] *Id.*

[9] *Id*.

[10] Although the ACO refers to these reports as "Waterbody/Watershed Facility Plan Reports," both DEP and NYSDEC have made clear in the course of responding to public comments on the ACO, and in the formal administrative proceeding on the modification of the City's SPDES permits, that these reports shall constitute draft LTCPs.

or "citizens advisory committees," each one focused on the LTCP for a particular waterbody or group of waterbodies.

Based on NRDC's participation in the Open Waters LTCP Citizens Advisory Committee and the Jamaica Bay and Tributaries LTCP Stakeholder Team, NRDC has the following concerns about the City's progress on these efforts:

1. Limited and uneven opportunities for public participation in decision-making: As explained above, in developing LTCPs, DEP must involve the affected public in the decision-making process. For such public participation to be meaningful, participants in DEP's "advisory committees" and "stakeholder teams" need to have confidence that they will be given access to the process of developing the LTCP on a schedule that provides genuine opportunities to influence the decisionmaking process as well as the outcome. DEP's public participation efforts got off to a late start – nearly 18 months had passed since the ACO was issued, and less than a year remained until draft LTCPs are due to NYSDEC, by the time DEP convened most of the stakeholder groups held for their first meeting.

Further, the nature of the public participation process has been very uneven in different parts of the City. For example, DEP's Open Waters citizens advisory committee has held bi-monthly meetings since March 2006, with occasional working group meetings on specific topics, and DEP has, at times, engaged directly in productive discussions with the committee. This committee will continue to meet bi-monthly at least through the submission of the draft LTCPs, and more working group meetings are planned. By contrast, in Jamaica Bay, DEP established a

"stakeholder team" only in June 2006. It is scheduled to meet a total of only four times before June 2007, with the last of those meetings currently scheduled to take place with little time remaining before the draft LTCPs are due. The quality and the depth of the information that DEP has provided to the Jamaica Bay stakeholder team has been much less than that provided to the Open Waters advisory group, leaving Jamaica Bay stakeholders much less able to actively and critically participate in the CSO decisionmaking process.

Even in the "Open Waters" advisory committee, the ability of public input to influence the ultimate contents of the LTCP remains very uncertain. Advisory committee members have called upon DEP to commit to a schedule for providing drafts of key components of the LTCP on a timetable that allows for meaningful review, discussion, and feedback before DEP asks the advisory committee members for any endorsement of a consensus approach. Given the June 2007 deadline for submission of draft LTCPs to NYSDEC, it is imperative that this schedule be an aggressive one, as it must provide ample time not just for the stakeholders to review, discuss, and comment on drafts, but also leave sufficient time for DEP to then consider and respond to their views in preparing the final draft for submission to the State.

In sum, DEP should re-double its efforts to ensure full opportunities for public participation in the development of LTCPs throughout the City.

2. Lack of a clear commitment to integrate fully into the LTCP development process a cross-agency, City-wide effort to reduce the flow of water into the combined sewer system (rather than seeking only to capture CSO discharges at the "end-of-the-pipe"): Although the Clean Water Act requires the consideration of a full range of alternatives to solve the City's CSO problem, DEP initially appeared to place little importance on stormwater low-impact development practices, including on-site detention, infiltration, and filtration, that would reduce stormwater (and sanitary sewage flow) inputs into the sewer system in the first place, focusing instead only on capital intensive infrastructure projects to capture CSO discharges at the "end-of-the-pipe." As DEP has conceded, though, such measures, as currently planned, will have created only enough capacity to capture CSO discharges to allow the City to maintain pace with expected development; *i.e.*, by the time these DEP construction projects are completed, they will not result in any net benefit to water quality.

However, the experience of other large cities around the United States, as well as preliminary modeling of portions the City's combined sewer system by DEP consultants, show that the protection of more natural stormwater systems around the City, *e.g.*, minimizing the creation of impervious surface, and minimizing the generation of pollutants, can provide significant additional reductions in CSO discharges, beyond that which may be practically achievable through "end-of-pipe" solutions alone.

We are encouraged that, in the last several months, DEP has engaged more significantly in efforts to evaluate the City-wide application stormwater "best management practices" and other "green design" techniques to minimize CSO discharges by reducing the flow of stormwater (and

the total volume of stormwater and sanitary flow) through the sewer system. We are hopeful that a report due out later this year from DEP, which the agency has promised to share with the citizens' advisory committees, will advance this effort significantly.

However, the identification, evaluation, and implementation of such measures for New York City will require the participation of many City agencies, beyond DEP, such as the Departments of Transportation (which controls runoff from roads), Parks (which controls much of the City's public open space that can be used for stormwater infiltration), Buildings and City Planning (which have jurisdiction over many private land use practices affecting stormwater runoff), and Design and Construction (which defines standards for the City's own development projects), and many others.

It is incumbent upon the City as whole, not simply DEP, to solve the CSO problem. And since the City as a whole has legal responsibility to comply with the ACO, and with the Clean Water Act, it is essential that the LTCP development effort be broadened beyond the consideration of alternatives within the jurisdiction of DEP, to include the full range of CSO control measures achievable by the City of New York. DEP has not yet made clear to the LTCP advisory committees how, or even whether, this will happen. And yet, the June 2007 deadline for submission of draft LTCPs is fast approaching.

3. Continued assumption that existing water quality standards must be weakened for the City to come into compliance with State and Federal law: The 2005 ACO was accompanied by a Memorandum of Understanding between NYSDEC and DEP, which provides for DEP, at some

point during the development of the City's LTCPs, to submit applications to the state to weaken the State water quality standards applicable to the waters affected by the City's continued CSO discharges. Although DEP has acknowledged that the purpose of LTCPs, including the draft LTCPs due in June 2007, is to achieve water quality standards, it continues to proceed on the assumption that it will not be possible for the City – even in the long-run – to comply with existing water quality standards in waterbodies currently receiving CSO discharges. This assumption is not an acceptable basis on which to proceed with the development of LTCPs. Particularly in light of the potential for stormwater "best management practices" and "green design" techniques to significantly reduce the volume of flow through the combined sewer system – and the fact that the City is still early on (indeed, lags behind many other major American cities) in its detailed evaluation and implementation of such measures – it is not appropriate at this stage to pre-judge the our ability to meet existing standards. Indeed, lowering our sights – by lowering the bar – is the one way to be sure we will not attain the goal of "fishable/swimmable" waters. The City should make clear its commitment to developing LTCPs that will ultimately achieve existing water quality standards.

* * *

Again, we thank the Committee for the opportunity to submit testimony on this important issue. We look forward to working with your Committee and the City Council as a whole, as well as with DEP and NYSDEC, to achieve further improvements in water quality around the City for the benefit of all who call it home.

TESTIMONY OF REED SUPER,
SENIOR CLINICAL STAFF ATTORNEY
AND LECTURER-IN-LAW
COLUMBIA ENVIRONMENTAL LAW CLINIC

NEW YORK CITY COUNCIL
COMMITTEE ON ENVIRONMENTAL PROTECTION

OCTOBER 17, 2006

OVERSIGHT HEARING ON COMBINED SEWER OVERFLOWS (CSOS)

Good afternoon. My name is Reed Super, Senior Clinical Staff Attorney and Lecturer-in-Law at Columbia Law School's Environmental Law Clinic. Thank you for inviting me to testify today. By way of background, the Clinic and/or I have represented Riverkeeper with respect to a variety of CSO-related matters in the City, including: the 2003 draft permits for the 14 sewage treatment plants; the 2004 CSO Administrative Order on Consent (ACO) between DEP and DEC; the Citizens Advisory Committee (CAC) for the Open Waters Long Term Control Plan (LTCP); and several large development projects that affect CSOs such as the WTC redevelopment, Hudson Yards, the Greenpoint-Williamsburg rezoning, and, most recently Atlantic Yards.

I want to start by echoing the serious concerns many others are raising concerning the dysfunction of the CACs; DEP's intent to seek a relaxation of water quality standards; DEP's over-commitment to wasteful end-of-pipe solutions to the detriment of more sustainable controls; and the need for DEP to collaborate with many other City agencies in addressing the City-wide CSO problem.

However, the main issue I want to focus on is something this Committee may not be aware of: that DEP may not be testing quality of our waters sufficiently to determine compliance with standards for pathogens or to properly assess the impacts of CSOs.

Let me briefly explain.

DEP's most recent water quality survey, dated 2004, reports a steady increase in fecal coliform levels in the Inner Harbor over the last five years – a reversal of the trend of the last three decades that puts those waters back at the coliform levels of the early-to-mid 1990s.[1] (Fecal coliform bacteria levels are an indicator of the presence of disease-causing pathogens.) But because DEP samples water quality far less frequently than State regulations dictate, the true coliform levels are unknown. They could be either higher or lower than the limited data indicates.

The State water quality regulations require "a minimum of five examinations" per month to assess compliance with total coliform and fecal coliform standards.[2] As DEP admitted in its 1997 New York Harbor Water Quality Survey, "[s]ince the Harbor Survey Program typically tests each site only 2-4 times per month, a true determination of compliance is not possible."[3]

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[1] NYC DEP, 2004 New York Harbor Water Quality Regional Summary at p. 5.

[2] 6 NYCRR § 703.4(a) and (b).

[3] NYC DEP, 1997 New York Harbor Water Quality Survey at p. 27.

Worse yet, in recent years DEP's sampling frequency has declined even further. The Department now takes an average of only 15 to 18 samples *per year* – less than twice per month – at each sampling point.[4] The City's health department samples for Enterococci (another pathogen indicator) at the City-owned beaches weekly or bi-weekly during the summer, but that effort not only also falls short of the five-per-month standard, but omits all the non-beach waters around the five boroughs that are becoming increasingly popular for water-based recreation all year long.

I raised this issue in comments on the 2004 consent order, but DEC failed to respond. I raised it again in the CAC meetings, and DEP promised a technical workgroup meeting in which its consultant HydroQual would explain the modeling they believe supports the accuracy of their results, despite the limited sampling. But that meeting hasn't even been scheduled yet. We also asked for their model's "calibration report," for our technical experts to peer review, but they said it hasn't yet been written.

Furthermore, even if DEP could determine compliance in the ambient waters, such data might not properly assess the effects of CSOs, for which the *timing* and *location,* not just the frequency, of sampling is critical. CSO effects are very specific, both temporally - they occur during wet weather – and geographically – pollutants discharge from shoreline outfalls.

[4] NYC DEP, 2003 New York Harbor Water Quality Report at p. 9. In its 2003 New York Harbor Water Quality Report, DEP states that it took 509 samples at 34 regularly sampled sites – an average of only 15 samples per year at each site, which is far below the necessary five samples per month. DEP's 2004 Report states that it took 606 samples – a slight increase from the year before but still far less than five times per month.

In other words, monitoring performed away from the shore and according to a schedule not timed to precipitation events will distort results. This is particularly important because recreational uses like swimming, fishing and boating often occur near the shoreline, and thus closer to the CSO outfalls, where higher pollutant levels would be expected. In its most recent report, DEP says it is "investigating possible links to weather as the trigger for the variability of water quality throughout New York Harbor."[5]

It seems quite obvious that we need to sample in both wet and dry conditions, both at and away from the CSO outfalls, frequently enough to determine the proximate effect of CSOs. And understanding the extent of impact is necessary both in the short term, to alert citizens to the potential hazard, and in the long term, to fix the problem. However, the Department's efforts, and its transparency, seem to be lacking in that regard.

I ask this Committee to oversee DEP's monitoring of water quality in general and of CSOs in particular. The technical meeting promised to the CAC should be held forthwith, and if, following that meeting, additional monitoring is needed, we would appreciate the Committee's assistance in making that happen.

Thank you.

[5] NYC DEP, 2004 New York Harbor Water Quality Regional Summary at p. 20.