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**TESTIMONY SUBMITTED ON BEHALF OF
STORM WATER INFRASTRUCTURE MATTERS (S.W.I.M.)**

**HEARING BEFORE THE CITY PLANNING COMMISSION
OF THE CITY OF NEW YORK ON PROPOSED REVISIONS TO
ZONING TEXT CONCERNING STREET TREES AND YARDS**

DECEMBER 19, 2007

Thank you for the opportunity to testify today concerning the proposed revisions to zoning text concerning street trees and residential yards. This testimony is offered on behalf of S.W.I.M., or “Storm Water Infrastructure Matters,” a coalition of nearly 50 organizations, including community and environmental groups, environmental justice organizations, architects, water engineers, and community development corporations, that are dedicated to ensuring swimmable waters around New York City through natural, sustainable storm water management practices in our neighborhoods.

As active stakeholders in our neighborhoods, S.W.I.M. coalition members have a wealth of knowledge about planned development and re-development projects and local stormwater infrastructure problems. We look forward to working with responsible city agencies to help educate city residents and property owners and provide them with the tools – and even with trained “green collar” workers – needed to implement the proposed zoning text amendments before you today.

As discussed in detail below (pp. 6-9), we also recommend a number of ways in which the proposed amendments should be strengthened, to ensure that they will actually provide the touted benefits. In sum, by including critical provisions that would optimize stormwater capture in tree pits and planted areas for uptake by trees and vegetative groundcover, the City Planning Commission (“Commission”) can maximize its contribution to cleaning up the city’s polluted waterways and, in doing so, ensure the survival of newly planted trees, with all of their attendant benefits, ranging from improving water quality, to countering the urban heat island effect, cleansing the air, beautifying neighborhoods, and many more. Our key recommendations are as follows:

- Require the use of appropriate **grading, curb cuts and/or inlets,** and **tree pit guard designs** to both maximize the benefits for the stormwater capture benefits for the sewer system and ensure an adequate flow of stormwater to support tree survival and growth.
- Provide for use of **permeable pavement** for sidewalk surfaces adjacent to tree pits and planting strips and for paved areas of front yards. This is another progressive feature of the parking lot zoning text revisions that is not included in the proposed street tree and front yard text revisions.
- **Expand the use of planting strips** to include more zoning districts.

Pollution Problems: Stormwater as a Waste

Water quality in the rivers, creeks, and bays surrounding New York City has improved in significant respects since the passage of the landmark federal Clean Water Act in 1972. But, 30 years later, substantial sources of pollution still remain. Excessive stormwater runoff is at the root of much of the city’s water pollution problems.

As you know, the sewer system in most of NYC carries both rainwater and raw sewage through the same network of pipes and sewage treatment plants. The combined sewer system is big enough to handle all of the city's sewage but, when it rains as little as one-tenth of an inch, the combined volume of sewage and rain water exceeds the capacity and the city diverts untreated sewage directly into our waterways. These combined sewer overflows ("CSOs") release pathogens and other pollutants into the water, posing a danger to the public health, damaging the ecology, and frequently making our waters unsuitable for many recreational activities.

New York City annually dumps some 27 billion gallons of raw sewage and polluted stormwater, spewing from approximately 460 CSO outfalls, into virtually every waterbody surrounding New York City – from the Hudson, East, and Bronx Rivers, to Jamaica and Flushing Bays, to Newtown Creek, to the Gowanus Canal, and many more.¹ Preliminary estimates by the Department of Environmental Protection (DEP) indicate that nearly 1/3 of public access points to our waterfront, city-wide, are within less than 3 city blocks (i.e., 750 feet) of a CSO outfall.² Pathogens and other pollutants released from CSOs cause beach closures, restrict shellfish uses, and damage our waterways' aesthetic qualities and ability to support human recreation and aquatic and marine life.

¹ See, e.g., *In the Matter of Alleged Violations of Articles 17 and 71 of the Env'tl. Conservation Law and Part 750, et seq., of Title 6 of the Official Compilation of Codes, Rules, and Regs. of the State of New York by The City of New York and the New York City Department of Environmental Protection*, Order on Consent, No. C02-20000107-8 (N.Y. Dept. Env'tl. Conserv., 1/14/05), at Whereas Clauses ¶ 5; Design Trust for Public Space and NYC Office of Environmental Coordination, *Sustainable New York City*, at 21 (Jan. 2006) (avail. at http://www.nyc.gov/html/oec/downloads/pdf/sustainable_nyc_final.pdf); see also HydroQual, *Combined Sewer Overflows to New York Harbor Waters from New York City Watersheds for an Average Precipitation Year (JFK 1988) Current Conditions (2003 Dry Weather Flow, 2003) Operations (2004)* (on file with Natural Resources Defense Council).

² This is based on a preliminary database of access points developed by Metropolitan Waterfront Alliance (MWA). See DEP, *Open Waters and East River Waterbody/Watershed Facility Plan*, at 7-5 (June 2007) (submitted to the New York State Department of Environmental Conservation ("NYSDEC")). MWA has since updated the database, although DEP has not yet re-calculated its figures on the proximity of CSO outfalls to these access points.

In some areas of the city, a system of separate stormwater sewers avoids the CSO problem. But these sewers carry significant amounts of metals, pesticides, bacteria, and other organic and inorganic pollutants washed by rain water off of our streets, parking lots, yards, and other surfaces, depositing that pollution directly into our waters, untreated in any way.

Due to in large part to CSO and stormwater pollution, New York City – 35 years after the passage of the Clean Water Act – remains a long way from restoring its waterways to “fishable and swimmable” condition, as promised in that landmark federal law.

Under a series of plans DEP submitted to the New York State Department of Environmental Conservation (NYSDEC) in June of this year, DEP proposes an array of end-of-pipe and other engineering fixes that, by DEP’s estimate (which is still under review by NYSDEC), would reduce CSO discharges by approximately 11 billion gallons per year – but would still result in nearly 18 billion gallons of CSOs annually.³ These DEP plans also do not address polluted runoff discharged through separate storm sewers.

PLANYC Solutions: Stormwater as a Resource

Mayor Bloomberg’s “PLANYC 2030” calls for keeping sewage and polluted storm runoff out of our waters by re-making the urban landscape to mimic more closely the way natural systems handle rainwater – using stormwater to green our city before it ever has a chance to enter the sewer system. PLANYC also recognizes, however, the combined efforts of multiple executive

³ These figures are derived from figures given in DEP’s June 2007 “Waterbody/Watershed Facility Plan Reports,” submitted to NYSDEC. Because DEP’s several reports do not report their data in consistent format, nor has DEP provided any cumulative city-wide totals, these estimates reflect our best effort to aggregate the numbers from these multiple reports. Note that the projected CSO volume reduction and projected remaining CSO volume add up to more than the current 27 billion gallons per year because DEP’s reports account for future increases in sanitary sewage flow into the sewer system due to population growth.

agencies of the city – including the Department of City Planning (DCP), and the Department of Buildings (DOB), which ensures compliance with DCP’s zoning regulations – are needed to accomplish this task.⁴

PLANYC also explains that urban trees – both along streets and on other public and private property – provide one efficient means of stormwater capture. Trees also provide many other benefits to the city, including moderating the climate (and thereby saving energy), sequestration of carbon dioxide (thereby mitigating global warming pollution), filtering the air (thereby mitigating harmful air pollution), neighborhood beautification, and increasing property values. A city-sponsored study concluded that “New York City’s street trees are a valuable asset, providing approximately . . . \$172 per tree (\$15 per capita) in net annual benefits to the community. . . . [T]rees are providing \$5.60 in benefits for every \$1 spent on tree planting and care.”⁵

The Commission and City Council recently enacted one of the initiatives identified in PLANYC to promote tree planting. The city has now enacted zoning text revisions concerning parking lot design and landscaping requirements. SWIM members testified at the City Council hearing in support of those rules, which include many important provisions to maximize the stormwater capture benefits of the new landscaping requirements and promote the health and survival of trees and other required plantings.⁶ For example, the parking lot rules addressed such issues as

⁴ PLANYC: Water Quality, at 58.

⁵ Paula Peeper, et al. (2007). New York City, New York Municipal Forest Resource Analysis," Center for Urban Forest Research, U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station (available online at http://www.milliontreesnyc.org/downloads/pdf/nyc_mfra.pdf), at pp. 2-3.

⁶ Survival and growth of street trees and other urban plantings can be impaired by many factors, including lack of water, inadequate space for root growth, unsuitable soils, inadequate maintenance during early growth stages, selection of species poorly-suited to regional climate, and others.

grading of areas adjacent to plantings,⁷ curb cuts to allow the inflow of stormwater,⁸ depth of soil,⁹ allowable plant species for use as groundcover,¹⁰ maintenance of plantings,¹¹ and permeable pavement.¹² Unfortunately, however, the street tree and residential yard zoning text amendments before you today do not include similar provisions – even though many would be applicable, in some form, to the context of street trees and yards. As a result, unless the proposed language is modified as discussed below, these text amendments may become a lost opportunity to realize the benefits promised by PLANYC.

Recommended Improvements to Proposed Zoning Text Revisions

S.W.I.M. proposes the following changes to the proposed zoning text amendments to ensure that they fully – and successfully – promote the goals of PLANYC:

Street Trees Zoning Text Revisions

- **Grading:** Require grading that directs storm runoff to tree pits and planting strips, which should apply to any necessary construction or replacement of sidewalk adjacent to a tree pit or planting strip following installation of the tree pit or planting strip. (As with other provisions, language could be included providing an exception for situations where the

⁷ Section 37-921(a) (“The open parking area shall be graded to allow stormwater runoff to drain into all required perimeter landscaped areas and planting islands”); Section 37-922(b)(same, with respect to drainage to planting islands).

⁸ Section 37-921(a) (“A raised curb . . . shall contain inlets at appropriate intervals to allow stormwater infiltration [into perimeter landscaping] from the open parking area.”); Section 37-922(b) (same, with respect to drainage to planting islands).

⁹ Section 37-921(a) (“The perimeter landscaped area shall be comprised of soil with a depth of at least three feet”); Section 37-922(b) (same, with respect to drainage to planting islands).

¹⁰ Section 37-921(b)(1) (“All required groundcover shall be selected from the list in Section 37-983.”); Section 37-922(c) (same).

¹¹ Section 37-93 (“All on site landscaping shall be maintained in good condition at all times. . . . [D]rainage components [must be] maintained in working order. In the event of the loss of any on site landscaping, the owner of the zoning lot shall replace the landscaping by the next appropriate planting season.”).

¹² Sections 25-65, 36-55, and 44-44 (“[P]ermeable paving materials may be used . . . where the Commissioner of Buildings determines that such materials are appropriate.”)

Department of Parks and Recreation (“DPR”) determines this to be infeasible. Cf. Section 26-41.)

- **Curb cuts/inlets:** Require curb cuts or inlets to allow runoff from the street to flow to tree pits and, especially, to planting strips. Significantly, DPR has already installed such inlets (or trench drains) at many locations throughout the city, as part of its Green Streets program, and is planning to retrofit additional sites. (As with other provisions, language could be included providing an exception for situations where the Department of Transportation determines this to be infeasible.)
- **Tree pit guards:** Prohibiting tree pit guards that are flush with the surface of the sidewalk around the entire perimeter of the tree pit, as such guards block the flow of stormwater to the tree pit.
- **Permeable pavement:** Require the use of permeable pavement for any necessary construction or replacement of sidewalk adjacent to a tree pit or planting strip following installation of the tree pit or planting strip. (As with other provisions, language could be included providing an exception for situations where DPR determines this to be infeasible.)
- **Planting strips:** Require planting strips in higher-density residential areas and non-residential areas, except where determined by DPR to be infeasible. The proposed text would require planting strips only in low-density residential areas (§ 24-06). Other districts would be subject only to street tree requirements (*see, e.g.*, §§ 24-05, 28-12, 33-03, 43-02). We note that in many such areas, if planting strips were to be installed, Business Improvement Districts and other community non-profit organizations would likely have an interest in sponsoring or otherwise contributing to the maintenance of these plantings.
- **Groundcover:** Revise § 26-42 to specify that groundcover used in planting strips must be selected from the list in § 37-983 (which is already applicable to parking lot landscaping, as noted above).
- **Spacing between trees:** Revise language to allow more flexibility in the spacing of trees. The proposed text revisions (§ 26-41) require spacing of 25 feet. However, current DPR street tree guidelines allow for as little as 20 feet between trees (which would result in more trees per block). Moreover, a mix of tree sizes improve can improve the survival and growth of street trees and smaller tree species can generally be planted more closely together.
- **Alternative plantings:** Include a third alternative in § 26-41 for situations where DPR or the Landmarks Preservation Commission determines street tree planting to be infeasible or inconsistent with historic character, to allow on-site installation of “green walls” as a substitute, at least within M1, M2, and M3 districts (*see* § 43-02). A green wall is a living vegetative system – such as vines – partially or wholly covering a wall. This can provide many of the same benefits as street trees.
- **Depth of soil for plantings:** As with the parking lot zoning requirements for perimeter landscaping, the street tree text should include a 3-foot soil depth requirement for planting

strips. (DPR guidelines, cross-referenced in the proposed zoning text revisions, address the required depth of tree pits but do not address the depth of soil for planting strips.)

- **Applicability to “conversions” from non-residential to residential use:** The language describing the applicability of street tree requirements to conversions from non-residential to residential use (§ 24-05) differs from the language describing the applicability of planting strip requirements to such conversions (§ 24-06). While the former specifies “conversions of 20 percent or more of the floor area of a non-residential building,” the latter refers only to “conversions of a non-residential building,” which could be interpreted to mean only complete (*i.e.*, 100%) conversions are subject to the planting strip requirements. There is no reason, however, to apply two different triggers for the applicability of the street tree and planting strip rules to conversions. Accordingly, § 24-06 should be revised to include the above-quoted language from § 24-05, which provides for the 20 percent threshold.
- **Inconsistency with parking lot requirements:** Clarify that, in the event of any conflict or inconsistency, these rules supersede street tree requirements included in the parking lot zoning text revisions (§ 37-95).¹³

Residential Yards Zoning Text Revisions

- **Grading:** Require grading of any non-planted yard areas to direct runoff to the planted areas. (As with other provisions, language could be included providing an exception for situations where DOB or DEP determines this to be infeasible.)
- **Maintenance:** Include a requirement to maintain plantings in good condition and to replace any dead or dying vegetation by the next planting season, as in the parking lot zoning text revisions.
- **Permeable pavement:** (1) Require the use of permeable pavement for any parking spaces identified as “permitted obstructions” under § 23-44. (2) Allow for a decrease of up to one-half in the percentage of yard area required to be planted, if an area of the front yard equal to at least twice the area so exempted from the planting requirement is surfaced with permeable pavement or other permeable materials.¹⁴ (As with other provisions, language could be included providing an exception to both of these rules for situations where DOB determines the use of permeable pavement to be infeasible.)

¹³ Section 37-95 appears to conflict with the proposed street tree zoning text in at least one respect, as the former specifies a 3-inch minimum caliper for trees, but the latter defers any determination of the required caliper to DPR. Additionally, § 37-95 lacks the requirement to plant street trees in alternative locations when DPR deems it infeasible to plant a street tree in front of the subject property, which is included in proposed § 26-41.

¹⁴ For example, where 50% of a yard would have to be planted under the proposed language, allow for an alternative means of compliance whereby 25% of the yard (*i.e.*, half the baseline 50% requirement) is planted, but 50% (*i.e.*, twice the amount exempted from the planting requirement, or 2 X (50% minus 25%)) must be surfaced with permeable paving or other permeable materials. Or, for the same yard, 30% (*i.e.*, more than half of the baseline 50% requirement) could be planted if 40% (*i.e.*, twice the amount exempted from the planting requirement, or 2 X (50% minus 30%)) is surfaced with permeable pavement or other permeable materials.

- **Calculation of required planting area:** In § 23-451, the Commission should clarify that the percentage planting requirements must be based on a percentage of the yard area *excluding* the sidewalk. The proposed language seems intended to have that effect, but this can only be determined by consulting (and closely parsing) the definition of “street line” in the definitions section of the zoning resolution. We suggest the language be clarified to avoid misinterpretation.
- **Selection of plant species:** Without unduly limiting the property owner’s landscape design preferences, the zoning text should include a cross-reference to § 37-983 for a suggested list of ground cover, shrubs, and perennials.
- **Tree planting guidelines:** Include a cross-reference to DPR’s street tree planting guidelines as providing recommended guidance for tree planting specifications, particularly for any tree to be planted in close proximity, on all sides, to paved or other impervious areas.
- **Rear yards and side yards:** Although the proposed revisions do not address planting, permeability, or other drainage-related issues in rear and side yards, we recommend that the Commission revisit the need for similar standards applicable to these areas.

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Thank you for this opportunity to testify on these important proposals.

cc: Council Speaker Christine Quinn
 Councilmember James Genarro
 Councilmember Melinda Katz
 Councilmember Tony Avella
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