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Zoning Commission

441 4th Street, N.W. – Room 200

Washington, D.C. 20001

Case No. 02-19 [Text Amendment - Forest Hills Tree & Slope Protection Overlay]

Dear Zoning Commissioners:

The record of this Case already brings out several environmental benefits of tree protection. These benefits include contributions to storm water management and improved water quality (and avoiding costs that EPA regulatory requirements might otherwise impose on District residents or taxpayers) because tree canopy favorably affects storm water runoff.

After the June 27, 2002, hearing in this case, the D.C. Water and Sewer Authority submitted its Final Report on the Combined Sewer System Long Term Control Plan (issued July 2002) to its two regulators, the U.S. Environmental Protection Agency and the D.C. Department of Health. That Final Report identifies measures to add and preserve trees and tree canopy in the District as beneficial because they "can reduce storm water runoff and slow down flow into the combined sewer system." (Final Report, Page 13-14, including references to work by the U.S. Department of Agriculture's Natural Resources Conservation Service and Center for Urban Forest Research). The Final Report is posted at www.dcwasa.com

Faithfully,

David J. Bardin

Attachment: Pages 13-14 and 13-15 of Final Report

ZONING COMMISSION

District of Columbia

Case 02-19

Exhibit 216

*District 3F04: 36th ↔ Connecticut & Ellicott ↔ Davenport + Connecticut ↔ 32nd & Ellicott ↔ Brandywine
in ANC 3F, roughly Porter to Nebraska, Rock Creek to Wisconsin*

ZONING COMMISSION
District of Columbia
CASE NO. 02-19
EXHIBIT NO. 216

Recommended Control Plan

13.2.8 Other Activities Benefiting CSO Control

Activities by other governmental and private organizations could improve the degree of CSO control provided by the recommended plan. These activities are typically aimed at reducing storm water runoff, but include other flow reduction measures. They would reduce the load on the combined sewer system by reducing flows in the sewers and thereby reduce overflows.

The recommended LTCP does not take credit for these activities being in place. This is because WASA may not control the activities or because there is no firm information as to when or to what degree the activities will be implemented or effective. As a result, any degree of implementation or effectiveness would serve to improve the level of CSO control provided by the recommended LTCP. The activities are described below:

- Trees in the District – trees can reduce runoff and slow down flow into the combined sewer system. In a letter to WASA regarding the storm water retained by trees during storm events, James Urban, FASLA indicated that during a rain event the "above ground structure of the tree (leaves, branches and trunk) becomes coated with water held by surface tension and not released. Most of this water evaporates after the rain event. Additional water attaches to the tree and the surface friction of the tree slows its downward flow into the storm water system." Mr. Urban has examined the literature and found two sources to calculate the amount of water held in the tree: (1) "Urban Hydrology for Small Watersheds TR-55" published by the USDA Natural Resources Conservation Service in June 1986, while not specifically addressing the water held in canopy, is designed to look at large storm events and indicates an approximately 10% decrease in runoff resulting from the addition of tree canopy (derived by comparing runoff from forested and grazed pasture in poor soils). (2) A more recent study conducted at the Center for Urban Forest Research, USDA Forest Service, University of California, Davis [xiao@cstars.ucdavis.edu], indicates that trees hold between 0.05 to 0.17 inches of water per square foot of canopy area, retaining about 10% of a one-inch rain event when in full leaf (and less in winter). Consequently, Mr. Urban concludes: "Trees, even when they are growing in environments that are mostly paved, have a significant impact on storm water flow rates and time of concentration. New technologies in the design for trees in urban areas allow us to grow significant tree canopies in areas that are mostly paved." (Urban, 2001)

Some of the activities related to trees are summarized below

- District's Urban Forestry Administration – The Mayor and D.C. Council have improved the District's street tree maintenance and planting programs under the Urban Forestry Administration in the Department of Transportation.

- Urban Forestry Preservation Act - In 2001, the D.C. Council proposed the “Urban Forest Preservation Act of 2001”. The bill requires that mature trees removed or damaged during construction be replaced on the same property or at another location in the community. It also provides for establishment of a Tree Fund, paid for by those undertaking construction. The fund would be used to improve management of existing trees in the District.
- Casey Trees Foundation – In 2001, Ms. Betty Brown Casey of the Eugene B. Casey Foundation gave \$50 million to the Garden Club of America for the creation of a permanent endowment to restore the tree canopy of Washington, DC. The Casey trees Foundation was thus created to restore and enhance the District’s trees. In the summer of 2002, the foundation is performing an inventory of public and privately owned trees. More information is available at www.caseytrees.org.
- Building Code Changes – WASA participates on the Building Code Advisory Committee, which reviews and advises on code changes. As part of this committee, WASA advocates for practical changes that encourage and allow low impact development and other measures aimed at decreasing runoff. The committee recently proposed a series of changes that could reduce flow to the combined sewer system. The changes now await action by the Director of the D.C. Department of Consumer and Regulatory Affairs and submittal to and approval by the D.C. Council. The proposed changes relevant to runoff reduction are as follows:
 - Changes to Section 1101 of Plumbing Code to allow storm water discharge to vegetated areas and any other approved place of disposal
 - New Section 708 of Plumbing Code that requires owners to disconnect storm drainage systems from sewer systems if physically possible and when the property improvements exceed 50% of fair market value
 - Changes to definition of “Cisterns” in the Plumbing code to allow cisterns in any land use
- Zoning Changes – The Zoning Commission has asked the Mayor’s Office of Planning to review regulations that encourage or require more rather than less impervious cover in land use. WASA proposes to make the agencies aware of the issues and seek appropriate reform.
- D.C. Extension Service – the Land Grant Extension Service, based at the University of the District of Columbia (UDC), has expressed an interest in playing a role in LID programs. WASA has offered to work with UDC and the Extension Service.
- Suburban Jurisdictions – The suburban jurisdictions send separate sanitary wastewater flow to Blue Plains for treatment. Monitoring data indicates that this flow increases during wet