Focused Session on Technical Specifications for Stormwater Best Management Practices
Summary of Discussion

District's Draft Stormwater Management Guidebook

Date: October 23rd, 2012

Attendees: Rebecca Stack (DDOE); Greg Hoffman (CWP); Daniel Duke (Boehler); Elizabeth Squires (Vika Capital)

General:

Q: What is a regulated private parcel development responsible for when land disturbance occurs in the adjacent public right of way as part of the project's limits of disturbance? Can stormwater generated by a private parcel be sent to a BMP facility in the public space? Are there any special provisions for sites with land disturbances that are primarily streetscape improvements? Can the Maximum Extent Practicable process defined in Appendix B be used when private parcel reconstruct adjacent public right of way as part of the project's LOD?

A: A project's site area is defined by the project's Limits of Disturbance (LOD) so land disturbing activities in the adjacent public space do contribute to the project's stormwater obligation. A regulated project's stormwater obligation is determined by the rainfall event (either 1.2" or 0.8") over the entire "site area" or LOD, the calculation does not distinguish between private property or public space.

DDOE understands DDOT will allow stormwater BMPs to be installed in the public right of way to manage public space runoff in the public right of way. DDOT is developing their own standards and specifications that will harmonize with the DDOE Stormwater Guidebook while providing greater details on structural concerns and other related transportation specific requirements. DDOT will require a maintenance agreement from the adjacent property owner for these stormwater BMPs. If these public right of way stormwater BMPs are designed to manage public space stormwater generated from within the site area, or LOD,

such as sidewalk stormwater runoff as well as public space stormwater generated from outside the site area, or LOD, such as street stormwater runoff, then that street stormwater runoff volume may be used to off-set the required retention volume for the LOD. Again, this will require an agreement between the private property owner and DDOT. However, at this time DDOE understands DDOT's policy will not accept stormwater runoff generated by private space into the public space.

There are no special provisions for sites with land disturbances that are primarily streetscape improvements. DDOE has logged the request for the extension of Appendix B to private parcel engaged in the reconstruction of adjacent public right of way as part of the project's LOD as comment rather than a clarifying question.

Q: To determine 2-yr and 15-yr quantity requirements, for the runoff computations a designer needs to compare the pre-development rate to the post-development rate. A developer needs more guidance on the pre-development Curve Runoff Number (CN). We understand a "good meadow" CN is required, however the CN for good meadow conditions can range from 30-78 depending on the soil type. In the District soils are often "Ub" which ranges throughout all soil types. In sites where there is an existing building, and a soils report cannot be performed – what CN should we assume?
A: DDOE will provide guidance for this point in the next version of the Stormwater Management Guidebook and Compliance Spreadsheets.

Q: Please clarify, for a project that is classified as "substantial improvement", what is meant by the defining clause "renovation that has a cost that equals or exceeds 50% market value". Does that mean the cost of construction, or of permitting? Should the applicant be using the pre-construction to post construction site value – of just the land? Should the applicant look at the building/structure costs only? (See regulations p. 7.)

A: The clause “renovation that has a cost that equals or exceeds 50% market value” is referring to the assessed market value of the structure at the time a building permit application is made. The “construction costs” should be based on the Contract Agreement for that is currently part of the DCRA building permit supplemental forms.

Chapter 2 – Guideline Design Requirements Questions

Q: Chapter 2.4 – For extreme flood analysis, is it possible to provide a resource (ie – a map) that indicates where this needs to be performed?

A: DDOE will coordinate with the District’s Flood Plain Manager to see if this is possible.

Q: Typo – There is no appendix X (p. 22).

A: Thank you, this will be fixed.

Chapter 3.1 – Green Roof

Q: The Contributing Drainage Area (CDA) is too restricted (p. 27).

A: DDOE has logged the request for a reassessment of the CDA to a green roof.

Q: What is the maximum drainage layer depth for an intensive green roof system?

A: The current guidelines for the drainage layer specify a range from 0.25 to 1.5 inches but do not make a distinction between requirements for intensive versus extensive systems. DDOE has logged the request for greater guidance on this matter.

Q: Roof areas are a critical amenity in DC. Having a 60-70% greenroof will reduce the ability to utilize this area. (Approximate area to achieve 100% SWRv.)

A: DDOE has logged this concern.

Q: Has coordination with DC historical sites been made? Will green roofs be allowed on such buildings?

A: DDOE has logged this concern.

Chapter 3.2 – Rainwater Harvesting

Q: Building setbacks – 10’ from building foundation – but typically we put these facilities inside the building (p. 43).

A: DDOE has logged this concern. It appears this setback requirement is misplaced. Foundation requirements will be revisited.

Q: Pretreatment - required first flush diverters – send dirty water away from the storage tank – to where? The sewer system? to ANOTHER onsite BMP(p. 45)?

A: DDOE has logged this concern and will clarify. This requirement comes from residential scale industry recommendations and should be adapted to commercial projects.

Q: There appear to be many errors in the spreadsheet directions (pp. 56 & 57).

A: DDOE has logged this concern and will edit/correct these pages.

Chapter 3.4 – Permeable Pavement

Q: CDA – Why far larger than Green Roof? (p. 76)

A: The CDA for permeable paving systems is based on industry recommendations. DDOE is canvassing the green roof industry to establish compatible guidelines on CDA for green roof systems.

Q: Utility Coordination – Who is to restore the permeable paving system after utility maintenance? Does a trench through a facility require reinstallation of the entire system? Who is liable for the cost of reconstruction/restoration of the BMP, the owner or the utility company? (p. 77) Same question for Bio Gardens (p. 100), infiltration (p. 153), and Open Channels (p. 170).

A: DDOE has logged this concern and will clarify. On private property the property owner holds the ultimate responsibility to maintain, in good working order, all BMPs that are part of the site’s approved stormwater management plan. In the public space, DDOT is playing the lead role in coordinating with the various Utility Companies to detail responsibility for replacement costs, but additional coordination will be necessary.

Q: SEC Controls – What if you cannot remain outside the PP area? (p. 86)

A: DDOE has logged this concern and will clarify. This may require an additional section explaining what site modifications (i.e., subsurface work) will be required if you cannot remain outside of the PP area.

Q: Maintenance –What if pavers are in the PROW (p. 92)? How to coordinate with DDOT regarding winter maintenance considerations?

A: DDOT is developing their own standards and specifications that will harmonize with the DDOE Stormwater Guidebook while providing greater details on structural concerns and other related transportation specific requirements. DDOT will require a maintenance agreement from the adjacent property owner approach for these stormwater BMPs.

Q: Is DDOE going to attend the "spring maintenance inspection"?

A: DDOE has logged this concern and will clarify.

Chapter 3.5 – Bioretention

Q: Storage volume: 75% of ponding – This computes that the required soil depth is less than the ponding depth. This discourages the installment of trees/ deep root plans – would just do dry swales instead.

A: DDOE has logged this concern and will clarify. DDOE will evaluate the ponding needs for various storm intensities and CDA. Recent work clarifying ponding depths for Maryland's ESD requirements are under review as well.

Q: Is the suggested 18" ponding depth safe (p. 103)? This 18" ponding depth is discouraged in both the Prince George's and the Delaware Standards Specified in the manual.

http://www.princegeorgescountymd.gov/government/agencyindex/der/esg/bioretention/pdf/bioretention%20manual_2009%20Version.pdf

A: DDOE has logged this concern and add a section to clarify safety measures guidelines.

Q: Increases required surface area to attain retention volume – and again… sites in DC do not have ample surface area.

A: DDOE has logged this as a concern.

Q: Tree boxes, – Has DDOT approved tree grate & iron fence barriers?

A: DDOT is developing their own standards and specifications that will harmonize with the DDOE Stormwater Guidebook while providing greater details on questions like public safety and tree protection.

Q: In brief discussions with DDOT, their LID contact (Meredith Upchurch) is adamant that 18" will in no way be accepted within the PROW, and therefore, this will reduce a significant portion of volume provided

A: DDOT is developing their own standards and specifications that will harmonize with the DDOE Stormwater Guidebook while providing greater details on questions like public safety.

Q: Foundation planters: – Can this be in public space?

A: At this time DDOE understands DDOT's policy does not accept stormwater runoff generated from private space into the public space. However, foundation planters may be a useful strategy in courtyards, within building restriction lines and on projects that are not lot line to lot line construction.

Q: Poor engineering to put sitting water next to a building foundation. (pp. 110-1)

A: This detail will be revised to show a clear separation of structure.

Chapter 3.6 – Filtering Systems

Q: CDA – Page 137 says all impervious while Page 144, in landscaping criteria, says it should be heavily vegetated

A: DDOE will clarify that the CDA can be either be impervious OR "stable" vegetation. Turf is acceptable.

Chapter 3.7 – Infiltration

Q: The proposed regulations state infiltration is "not good for redeveloped areas" (pg 153)…which is pretty much all of DC.

A: DDOE has logged this comment and will clarify.

Q: Pretreatment – Page 154 says 100%; page 155 says 25% & 50% - which "rule" dictates?

A: DDOE has logged this concern and will clarify. The percentages from page 155 (25% & 50%) are for separate facilities (i.e., forebays).

Q: CDA's greater than 20,000 sf (0.46 ac) need a sandfilter/forebay pretreatment (p. 155). Sandfilters in themselves require 25% pretreatment… so now we need 3 facilities?

A: A statement will be made to clarify that a pretreatment facility will not need a separate pretreatment facility.

Q: In general – when you talk about infiltration rates, do you mean actual rates, or the using the 50% factor of safety rate?

A: DDOE Response: In general, infiltration rates stated in the Guidebook are actual rates. The 50% factor of safety is included in the design calculations. This will be clarified where appropriate.

Chapter 3.10 – Wetlands

Q: Why does the constructed wetland BMP receive zero retention value? There are plants, evaporation and infiltration.

A: DDOE has logged this as a concern. Data from Field Performance studies have not demonstrated annual retention values. This may be a residual of the lack of literature. DDOE will reexamine the literature to see if more data exists.

Chapter 3.11 – Storage

Q: Setback: 10' from building, but we've put vaults in the building before. (Same comment as on Rainwater Harvesting setbacks)

A: DDOE has logged this concern. It appears this setback requirement is misplaced. Foundation requirements will be revisited.

Appendix A – Design Example 3

Q: I tried to draw out this site, and I couldn't make all of the BMPs and necessary set back fit into the 25,000 sf. Can we see a mockup of sites?

A: DDOE has logged this concern and will provide site sketches to support the design examples.

Appendix F

Q: FYI - DC Water says roughness coefficient of 0.015 for concrete pipes 24” or smaller (pg F-3)

A: DDOE has logged this comment.

Appendix H

Q: Are the soil adjustments for pre or post comps?

A: DDOE has logged this concern. Several comments have expressed confusion over this point. This is intended for post development computations but may be removed/replaced in the subsequent draft.

Appendix T

Q: Will there be a list of all approved Proprietary Practices available?

A: DDOE has logged this concern. DDOE is considering maintaining a webpage with lists of BMP providers/installers/etc. DDOE does not provide endorsements, certifications or approvals of proprietary practices (PP). The webpage may include a list of PPs that have been installed in the District as part of an approved stormwater management plan.

<u>Spreadsheet Questions</u>

General Compliance Spreadsheet:

Q: Why is the “lawn” TSS load greater than for commercial streets?

A: TSS loads were derived from a literature review of field studies. We are considering a more aggregated approach to surface loading and performance based approach that looks at effluent outflow values rather than a percent reduction.

Rainwater Harvesting Calculator Spreadsheet:

Q: Daily demand isn’t constant throughout the year.

A: DDOE has logged this concern. We are evaluating a methodology to adjust the template to allow for fluctuating demands.