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Comments on Draft DC Stormwater Manual of August 2012
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Comments:

1. Some of the methods for calculating sizes of facilities appear to be independent of time. This does not fit well with standard hydrologic and hydraulic approaches (e.g Rational, NRCS, HEC, etc.). This results in facilities, particularly those that filter stormwater, being larger in size than they have to be.

2. There are several hydrologic "short cuts", such as simply subtracting volumes, from the modified Runoff Reduction Method used here that should not be used or included in other hydrologic models.

3. The methods here are not approved for use by FHWA. This will result in additional calculations.

4. The design of the bioretention, permeable pavements, and other infiltration devices do not account for soil structure and are primarily based on Hydrologic Soils Groups. This may be problematic as it will change the structural characteristics.

5. A general soils/geotechnical report should be prepared for infiltration and the geotechnical engineer should be responsible for the type, location, and density of the borings. The variability is to great in urban areas and the falling head test may not be the most appropriate.

6. There are many instances of incomplete or no references to building codes. Then there are some very specific references, but some key ones are left out. This is particularly evident in the green roof and the water capture specifications.

7. The bioretention soil mix is not very good. There is to much sand. What are soil fines? There are numerous instances of references to materials or specifications

8. The specification of the geotechnical fabric is to limited. Particularly with respect to liners and drainage fabrics. The distinction, or choice, between woven and non woven drainage fabrics is a function of the soils and use. It should not be one or the other. The use of fabrics should be limited because of the potential for clogging.

9. Why is no storage volume given for the green roof. A small storm should be totally absorbed by the media. Also the initial abstraction of the roof would permit some detention.

10. The specification of roof loads and structural requirements is incomplete and oversimplified. The number of citations and references on materials is very limited. Although these are good references, they are not really tested or verified through rigorous procedures.

11. Are there provisions for supplemental watering of the roofs?

12. Some of the drainage time for facilities is conflicting or not consistent.

13. What is the exact criteria for hot spots. The criteria on page 43 looks very vague.

14. The treatment of water from the rain harvesting is not very complete or specific. It should also tie into the building and plumbing codes.

15. There is no real data or rational to support the sheet flow buffer lengths.

16. Does the soil/compost buffer have vegetation?

17. The 1 foot per second flow on disconnection is quite a significant flow.

18. Do the grasses in table 3.3.4 match up with commercially available types and the Sediment and Erosion Control manual.

19. The permeable pavement design criteria presented is incomplete and there are significant areas and considerations not covered. You should cite the ASTM, AASHTO design procedures and specifications or the industry standards.

20. It is going to be very hard to find areas that meet the slope requirements, especially for alleys and parking lanes.

21. Provide further explanation on slope and head.

22. Provide more clarification on infiltration rates.

23. There are no specifications on how liners are to be joined and tested in the pavement areas.

24. What about the use of hand tamping or smaller vibrators for pavers. Also what is the depth of scarification in step 4?

25. Why are you washing the stone for the pavement while you are constructing it?

26. The maintenance considerations for pavement are incomplete.

27. The methods and rigor of determining pollution credits is very unclear. How The data from well researched sources, such as the ASCE Database, or from local monitoring data do not appear to be used. Do these values tie into the Bay TMDL?

28. How does someone insure that the bioretention sump will infiltrate within 72 hours. This seems unclear. It will probably also make the facility much larger. Having it partially infiltrate and then discharge the excess within the time period is probably more reasonable. There doesn't seem to be a very good rationale on why you are doing this.

29. The size of the drainage area to a bioretention cell is up to 2.5 acres. This is much to large. These practices function best when the drainage area is under 1/2 acre.

30. It would be better to have a licensed professional Landscape Architect or Certified Horticulturalist prepare the landscape plan.

31. The plant palette is very limited for bioretention areas.

32. The maintenance criteria are very vague for the bioretention areas.

33. It will be very difficult to use the design criteria for disconnection and filter strips for linear projects and trails. This has been a significant problem in Maryland, where the same approach is used. The slope and length criteria is excessive.

34. There should be more supporting information on the sizing of the filter surface area. What is this based on?

35. What is the reason for the amount of head on the infiltration devices?

36. Where does the pretreatment criteria for infiltration and ponds come from?

37. What is the residence time in the dry swales? How can determine the volume reduction?

38. The testing/submittal requirements of proprietary products should also be evaluated.