Rhode Island Stormwater Design and Installation Standards Manual-- Final Draft: Public Informational Session

May 26, 2010 at CCRI

Questions and Answers

Chapter 3

Q1. Will there be a provision for revising the standards in the future, e.g. due to the impact of climate change?

> This is an effort to use current, state-of-the-art techniques. We've made an effort to be very current, for example, with new rainfall averages. The techniques for stormwater management will inevitably change, and we will have to update the Manual periodically as they do.

Q2. Reference to 3.3.5, page 318, 2nd bullet and 5th bullet. There are many sites with some development (such as grass, driveways, houses). Developers cannot get these to pre-development conditions, as that would require reducing total water flow on the site. Why are these suggested?

> The key logic is to maintain flooding impacts at the pre major disturbance level. We have attempted to standardize the procedure for determining the existing condition of ground cover to achieve a level of consistency in the submittals and in the reviews.

Chapter 4

Q3. Reference to page 4-11, last bullet; mentions 50-foot setback from OWTS. This contradicts Chapter 5, which mentions a 25-foot setback.

> This is a mistake. It should be 25 feet.

Q4. Land Use 2025 marks the area appropriate for more dense development. Would there be some consideration of two standards: one to encourage denser development in some areas such as urban service boundaries and another to protect other areas?

> The Manual does accommodate that need, but water bodies in dense urban areas also have the most impairments. Under the Clean Water Act, we're required to address that. We will have to continue to observe and correct if these standards don't have the desired effect. Manual is not an undue burden in an urban re-development scenario because the criteria include flexibility that address not having to meet certain standards in many cases.

Chapter 5

Q5. Why do you only allow 2 feet of fill?

> It involves the complex, somewhat uncertain, nature of fill. We have to balance the infiltration and structural needs of the soil.

Q6. Reference to Table 5-2. Is this for infiltration other than pervious surfaces?

Yes, Table 5-4 applies to pervious surfaces.

Q7. A 50-foot setback for an infiltration system from a building structure is too large. Also, the setbacks should be reduced for pervious pavements.

Table 5-4 should have a column for residential uses (as done for Table 5-2).

Q8. Table 5-5 needs to have a definition of subbase added.

Q9. Do WVTS really have good pathogen removal if they attract wildlife?

Yes, studies show that they do. We try not to add features that will attract wildlife, especially waterfowl.

Q10. Is there a recommended density of vegetation to accomplish that [i.e. not attracting wildlife]?

Yes, it is discussed.

Q11. Are you concerned that you're creating mosquito pools?

For gravel systems, no. Forebays might have some water. We can't say that there will never be a mosquito to hatch, but overall, these are much better than conventional dry detention ponds, especially deep sump catch basins.

Appendix H

Q12. Do you intend to give training or provide documents on how to run testing methods for infiltration values of soils?

No.

Q13. Are hydrodynamic separators rated at 25% removal, even when manufacturers state a higher rate?

Yes. For treatment to meet water quality standards, applicants must use the designated BMPs.

Final Questions

Q14. Has a detailed fiscal note been prepared for the Manual and the new rules?

No, but it will be as part of the process to formally promulgate the Manual.

Q15. Suggest a one-year timeframe between adoption of the Manual and associated rules and when the Manual will be required for applications.

Rhode Island Stormwater Design and Installation Standards Manual--Final Draft: Public Informational Session

June 2, 2010 at URI

Questions and Answers

Q1: Can you speak to the guidelines vs. regulations addressed in the manual.

The manual is set up with specific language:

> Must, shall, required: The design standard or criterion is essential; it is not optional. A written technical justification that is acceptable to the approving agency must be provided if the standard or criterion is not used or achieved.
> Should: A well-accepted practice; a satisfactory and advisable option or method. It is optional, but subject to review and consent by the approving agency.
> May: It is recommended for consideration by the designer; it is optional.

Q2: The manual states that basins are to remove 85% of solids. There are sediments and solids that are too small and don't follow Stokes' Law. What is the solution?

> Water quality is a function of load (concentration and volume). The criteria are set up using the best technologies to remove particles, pathogens and also control volume. You can't just look at particle size.

Q3: There are a lot of new smaller lots being developed that will have issues with the 10,000ft^2 threshold for redevelopment sites. What is the basis for 10,000 ft^2?

> We do not want to discourage redevelopment, but we want to limit the impact and not increase the load to an existing problem. Maryland has had success with the size threshold similar to that proposed.

Q4: What is the standard for lesser pollutant removal on redevelopment sites if it is not 85% for TSS?

> For redevelopment sites with 40% or more existing impervious area, one option is to treat 50% of the redevelopment area with BMPs that will meet the water quality standards. An alternative option is to treat a greater % of the redevelopment area to a lesser water quality standard, provided that the overall pollutant removal is equivalent.

Q5: The Manual indicates that if you design, install, and maintain BMPs in accordance with the Manual it would be presumed that the BMP will meet all water quality standards. There are two different turbidity standards for the state, how do the BMPs meet these standards?

The presumptive approach to achieving water quality standards is similar to the concept underlying application of the current manual. Additional BMPs targeted to remove other pollutant(s) of concern and/or to achieve higher pollutant removal efficiencies may be required for impaired receiving waters, drinking water reservoirs, bathing beaches, shellfishing grounds, tributaries thereto, and for those areas where watershed plans, including Special Area Management Plans (SAMPs) or Total Maximum Daily Load (TMDLs), have been completed. In some cases, the permitting agencies may require that an applicant prepare and submit a pollutant loading analysis developed in accordance with the provisions of Appendix H.

Q6: What happens when a developer complies with LID regulations but community regulations interfere? My master plan was denied unless roads were widened by 10ft and there were two entrances to the development.

The local regulations will prevail. A guidance manual for communities is being developed to assist towns in adopting LID ordinances that are consistent with the Manual's goals. Also, under the new Phase II permit, towns will have to describe how they are meeting the "avoid, reduce and manage" requirements of LID.

Q7: Will there be funding available for developers to incorporate technologies and help with operation and maintenance?

No. We should recognize that funding for stormwater operation and maintenance is generally inadequate in most jurisdictions for the currently installed BMPs. Operation and maintenance requirements may be increased under the new manual, but not significantly compared to the current deficit in funding. One option is for towns to establish stormwater utility districts to fund operation and maintenance.

Q8: With reference to the permeable pavement picture; if the blocks in this picture are not permeable, then that surface is not considered permeable?

Correct.

Q9: Can you clarify the qualified professional that the permitting agency may require for planting described on page 5-49 for bioretention systems?

DEM will use its discretion in specifying the type of "qualified professional" that may be required for bioretention plantings on a case-by-case basis.

Q10: If you have a wet swale with structurally reinforced walls to prevent the flow from being erosive, do you still have to comply with the maximum slope requirement? Do you still have to have check dams?

Yes. The slope limitation is a storage based design criteria.

Q11: What happens with the BMPs in winter with less vegetation and frozen ground? Is pollutant removal efficiency less?

The pollutant removal values are annual averages. BMPs do perform better in the summer, but it depends on the practice.

Q12: Why are we still using test pits?

An open soil pit is used to view the soil profile to identify redoximorphic features in order to determine the seasonal high groundwater table.

Q13: What is the criterion for long term maintenance?

Maintenance is required. The Manual has prescribed maintenance for each of the BMPs.

Q14: The 1 year 24 hour standard is used for the sample design in the Appendix. The difference between the 1 year and the 100 year storm is 3 times; are we really accommodating for this when we use the 1 year 24 hour storm?

We design for the 1 year 24 hour storm for the channel protection calculation to protect the downstream channels from eroding. Peak flow attenuation is required for the 10-year and 100-year 24 hour storm. This is also in the example.

Q15: Infrastructure that is not serviced by sewer lines in the conservation development design example may have increased N loadings where the lots are concentrated. Doesn't it make sense to spread out high intensity N loadings particularly for onsite wells and groundwater protection?

The department would look at the nitrogen loading for the entire area. In this example design, all private wells and septic systems comply with the required setbacks and are considered protective of groundwater quality.

Q16: The minimum standard 7 requires developers to provide source control and pollution prevention. The site example incorporates pet waste and street sweeping methods. What are some other source control examples particularly if the development does not have a homeowners association or have control of town street sweeping?

Appendix G has a series of recommendations and there are many more out there. Pet waste can be a component, fertilizer and pesticide use can also be a component. The standard requires that the topic be addressed.

Q17: Does the DEM's TMDL group agree with the new pollution removal efficiencies

Yes.

Q18: Is it possible to change the design of a BMP to achieve higher pollutant removal efficiencies?

Yes, but it may not be accepted unless adequately supported in accordance with the criteria in the Manual such as the Technology Assessment Protocol (TAP) . If you

change the design, you would have to provide evidence that the BMP will achieve the levels stated. The burden of proof will be on the applicant.

Q19: If a TMDL require 99% of bacteria removed, how can this be achieved given the BMP removal efficiencies in the Manual?

BMPs can be applied in series. Note that the method for estimating pollutant removal of BMPs in series in Appendix H does not apply to bacteria. The full removal efficiency for bacteria is applied to subsequent BMPs.

Q20: When will the Manual be adopted and implemented?

DEM and CRMC plan on going to public notice in late June and to adopt the Manual in September. A later date (post September) is being discussed for when applications will be required to comply with the Manual.