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Phase I Municipal Stormwater General Permit, [Preliminary Draft Appendix 1: Minimum Technical Requirements for New Development and Redevelopment](#)

I have been a drainage design engineer for fifteen years. In general, I feel like there is an unbalanced amount of attention being paid to what amounts to infiltration with a couple of changes. Many, if not most, project sites will be deemed infeasible for LID – and will require standard detention and water quality treatment. It does not seem like the level of thought, effort, and detail provided for the minority of project sites is particularly worthwhile. There is so much push to implement these BMPs *to the maximum extent feasible*, but then, once the designer goes through all of the required criteria, they are often not feasible at all. LID is a very “nice” idea, but in the real world, it’s just not as applicable as many of us would like it to be.

Section 1. Exemptions – Road Maintenance

There are huge impacts at stake with regards to “removing and replacing a paved surface to base course or lower, or repairing the roadway base.” Within a roadway design, the types of gravel installed are commonly referred to as “base course”, and to “top course”. It is not clear from this quoted passage whether or not removing and replacing a paved surface to “top course” only would be exempt. Also, it is not clear what should occur when impervious surfaces are expanded, in addition to replacement of pavement.

It does not seem fair that a road expansion project that removes and replaces existing pavement should be penalized for fixing existing pavement problems. This discourages roadway upgrades, which are typically done for the public good.

It does not appear that provisions have been made for areas where pavement is removed and pervious surfaces installed in its place. IT SHOULD BE SUCH THAT TREATMENT IS ONLY REQUIRED FOR **NET NEW IMPERVIOUS** surfaces. Credit should be given for projects that convert impervious surface to pervious.

How does one extend the pavement edge without increasing the size of the road prism?

Section 2. Definitions Related to Minimum Requirements

Bioretention BMPs – This definition does not, in a practical sense, significantly differ from that of a regular infiltration facility. Why is there such a movement to redefine what already exists?

Hard Surface – It appears that permeable pavement and green roofs are proposed to be subject to the same thresholds as new pavement. This is not encouraging their use.

Land disturbing activity – Activities associated with gardening should be clearly identified as exempt.

Native vegetation – This definition leaves a lot of room for misinterpretation. By this definition, newly planted seedlings would be considered “native vegetation.” My assessment of the intent of the use of native vegetation would include requirements for soil properties and plant establishment.

Pollution-generating pervious surfaces – There should be a provision for credit for the installation of pervious surfaces that would be low maintenance, non-fertilized areas, encouraging more ‘sustainable’ installations (and this differentiation should be made within the definition).

Receiving waters – Please include reference to “*natural* surface water systems, such as lakes, river, streams, ponds, salt water, wetlands, etc.” The definition as worded allows for any catch basin to be considered a receiving water. Also, if infiltration is not specified as “infiltration meeting the requirements of this manual”, it will not be.

Replaced *pervious* surface – As mentioned above – the removal of pavement and replacement with pervious surface should receive credit, and should be included as a project factor.

Source control BMP – It is hard to discern whether or not these BMPs are to be used during construction only or if they are intended to be permanent BMPs.

Threshold Discharge Areas – There needs to a decision regarding how to handle flow splitters at the base of a “TDA”. When a flow splitter is present, precipitation events with only low flows create situations where the flow will not combine with flow draining from a separate area within a quarter mile, but in high flows, the “TDAs” combine. This has created a couple of very complicated analyses.

Figure 3.1. Please include more information about “MS4”s – maybe include an asterisk and a note at the bottom. The casual user does not have clear direction.

Section 3. Applicability of the Minimum Requirements

3.1 Thresholds. It appears that the additional second paragraph leaves room for unmitigated development. If the thresholds are defined as being applicable at the time of application, then what happens if the project changes (which would become the norm for development if this loophole is left open)? What about project types that have nothing to do with subdivisions or plats?

Section 4. Minimum Requirements

4.2 Minimum Requirement #2: Construction Stormwater Pollution Prevention Plan (SWPPP)

12. Protect Low Impact Development BMPs: As infiltration facilities substantially function in almost the exact same manner as bioretention and rain garden BMPs, infiltration facilities should be included as needing equivalent protection.

4.5 Minimum Requirement #5: On-site Stormwater Management

For projects required to comply only with MRs 1-5, it is proposed that a project be *required* to provide “non-engineered shallow landscaped depressions” to the maximum extent feasible. Not only does that

1) introduce the potential for enormous backlash from property rights activists, 2) it seems like it could introduce a lot more harm than good if people don't know what they're doing, 3) it puts an undue burden on the small property owner, and, 4) it would be essentially un-enforceable. This does not seem like a wise inclusion.

My opinion is that a permeable pavement requirement does not provide a benefit that is comparable to the unfair burden it places on projects of this size.

For projects required to comply with MRs 1-9, <10,000 sf of new and replaced hard surface, a performance standard that implements flow control on projects that would not otherwise require flow control does not seem to make any sense.

For projects required to comply with MRs 1-9, >10,000 sf of new and replaced hard surface, the performance standard will result in absolutely enormous flow control facilities. Is there any hard science behind the requirement to match developed discharge durations to 8% of the 2-year peak flow? What is driving this requirement – environmental needs? Perceived increases in flooding or erosion? It The DOE needs to consider having some value engineering analysis done before implementing this requirement. The question that needs to be asked is: What is the average percentage of an overall project budget currently being spent on storm water treatment (water quality and flow control)? How much larger would storm water treatment facilities be with this additional performance standard? How much of a project budget percentage increase would this be? (And how many projects would this kill?) But the real fundamental question that needs to be addressed is: *Are there better ways to spend this additional money to achieve the goals that are driving this proposed performance requirement??*

Section 8. Feasibility Criteria for Selected Low Impact Development Best Management Practices

I.B. Permeable Pavements are considered infeasible where:

For areas of proposed permeable pavements, it must be demonstrated that runoff will infiltrate into the underlying soils, will not drain into adjacent base course, and will not flow out the top of the pavement. Slopes are applicable to this, but should not be part of the definitive feasibility determination.

It appears that the intent of this section is to better define when and where to use permeable pavement. However, the criteria needs to be defined in such a way as to have a clear black and white decision – and these decisions need to be based on the best available science. How would opposing designers or reviewers determine the cutoff point for how much “long-term excessive sediment deposition after construction” is acceptable? Or how “steep, erosion prone areas” a site can have? Or how much or how many “regular, heavy applications of sand” can occur? Or when adjacent impervious pavements would be compromised?