

Memorandum

To: City of Gresham City Council
From: Ray Moore, PE, PLS
Date: 5-19-25
Subject: Gresham Stormwater Management Manual Updates

I have been designing projects in Gresham since 1996 and have seen many changes over the years for the good of the public. I will be an end user to the new manual and appreciate the opportunity to have input prior to it being finalized. My hope with this review, is to inform City Council on what effects this new code will have on density.

I have completed my review the of proposed Gresham Stormwater Management Manual dated April 2025 and have the following comments and suggestions.

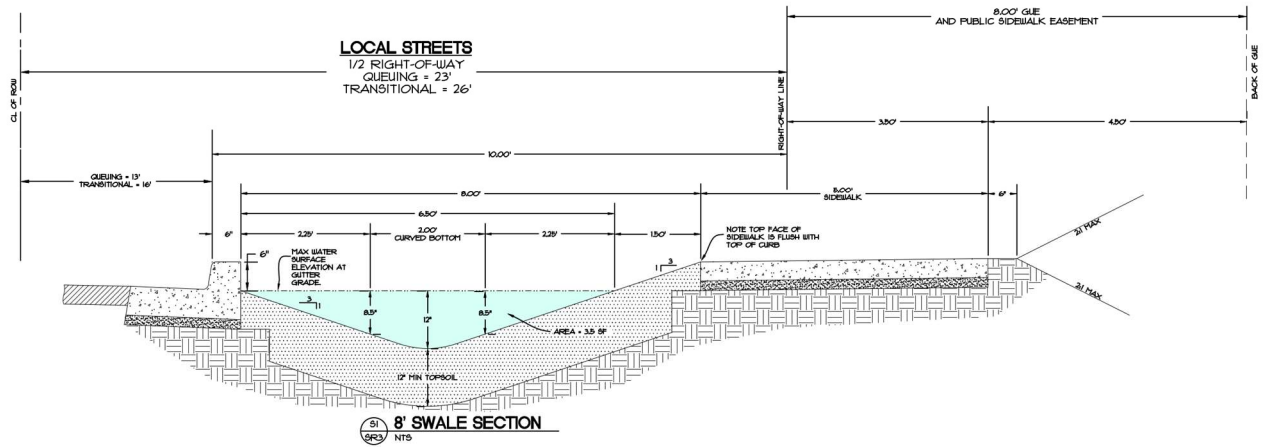
Comments and Suggestions:

Note: Red sections below are from the draft code and details, my comments follow.

Section 3.2.1 Rain Gardens and Swales

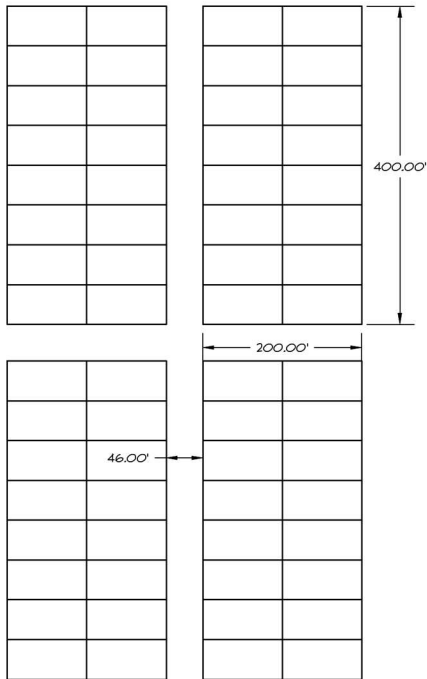
Dimensions and slopes: The minimum width for rain gardens and swales is 10 feet. Public street projects with a landscape strip that is 10 feet or greater shall prioritize swales for treating street runoff. A minimum 2-foot-wide flat bottom width is required with maximum side slopes of 3 horizontal to 1 vertical. The minimum depth is 6-inches (typical depth is 12-inches) as measured from the top of the growing medium to the overflow inlet elevation. Maximum longitudinal slope is 4 percent without adding check dams. Freeboard for rain gardens/swales must be noted on the plans. Public swales shall follow the dimensions shown in the swale plan view (GS-114) and swale section view (GS-115) details in the Public Works Standards.

I am currently retrofitting subdivisions with 8' wide swales and can meet the water quality standards with this width. I think 10' wide swales would be overkill. I have also been placing the sidewalk in the general utility easement without making the right-of-way wider. See detail below. The swales are typically on streets that do not have driveways, so there is room to place the sidewalk in the easement without interfering with driveways. The current draft detail GS-115 shows a 10' swale between the sidewalk and the curb, the current code requires a minimum of 4'. This is an increase of 6' on each side of the street. So, the typical queuing street right of way will go from 46' to 58'. It is also my understanding that all street rights-of-ways will become wider with or without the installation of swales. This increase in right-of-way width will reduce densities. See the "Lot Layout Sketch Map" below. This is a rough map laying out 5,000 sf lots under the existing street widths and comparing them to the new right-of-way widths based on 10' wide swales. As you can see there is a 12.5% reduction in lots (8 lots removed). If the lots sold for \$150,000 each, this is a loss of \$1,200,000 just in land value. I recommend the following 1) Make the minimum width for new swales to be 8'. 2) Allow the sidewalks to be in an easement.

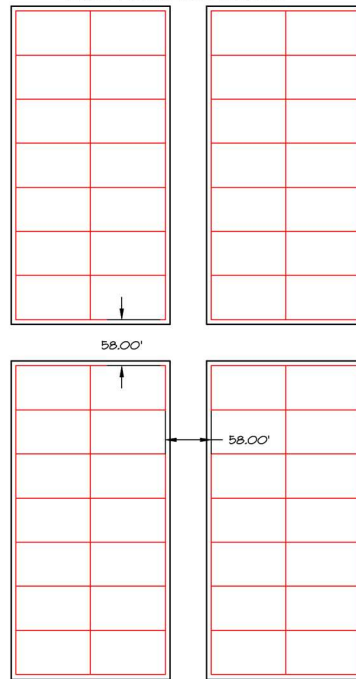


LOT LAYOUT SKETCH MAP

LAYOUT A WITH 8' SWALES IN EASEMENTS
TOTAL LOTS = 64 LOTS



LAYOUT B WITH 10' SWALES IN ROW
TOTAL LOTS = 56 LOTS
(12.5% REDUCTION IN LOTS)



SCALE: 1" = 100'

0 50' 100' 200'



RENEWAL DATE: 12/31/2026

NOTE THIS IS NOT INTENDED FOR DESIGN. IT IS ONLY A SKETCH MAP TO SHOW LOT REDUCTION DUE TO WIDER RIGHT-OF-WAY

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DATE OF PLOT: 5-19-25

25-000-sketch.dwg

Section 3.2.6 Ponds

There are two facility types which can be installed to meet the centralized facility requirements for water quality and/or detention – dry detention ponds with a swale bottom, or wet ponds.

I have designed a submerged gravel pond in Gresham that is do an excellent job at treating the water. The pond is located West of SE 190th Drive and South of SE Richey Road. I recommend allowing “other” pond designs as “approved by City Engineer”. Don’t limit it to just two designs. I urge you to go visit the pond and look in the outfall structure, you will see that the water leaving the pond is crystal clear. If this code is adopted as is, I will not be able to do another design like this one.



The vegetated shelf shall be a minimum of 20-feet wide for ponds draining more than 30 acres. This will increase the pond footprint by 40' in each direction, thus decreasing the number of homes that can be built. The existing wet pond standards meet the water quality requirements so there is no reason to do this. I recommend removing this requirement.

Retaining walls: Retaining walls are not allowed below the freeboard level of a pond. Walls must be a minimum distance of 5-feet horizontally beyond the freeboard elevation, and must be set back from the nearest property line at least the distance equal to the horizontal length of any wall restraints plus the height of the tallest part of the wall.

The restrictions established in this section will basically eliminate any advantage of using walls to minimize pond tracts. For example, if you were to build a 10' tall wall with 10' of wall restraints plus another 10', your wall is setback 20' from the pond tract line. You can accomplish the same by allowing a 2:1 slope. No one would choose to do a wall if you can just slope the grade. Walls are used when you don't have sufficient room to do grading. I recommend two things here, 1) allow 2:1 slopes starting 5' from the pond freeboard line, just like the starting point of retaining walls. 2) If you need to build a wall due to limited area, I recommend allowing easements on adjacent lots for the wall restraints. This is how we are currently doing it. If you leave this section as is, I estimate that the size of pond tracts are going to double, thus deleting homes.

Walls shall not exceed one-third the perimeter of the pond; This is an arbitrary requirement and should be removed. This restriction provides no additional water quality or detention benefit. If this section is left as is it will reduce the number of homes on sites where there are grades, (most all sites have grades that require walls).

Detail GS-114

The check dam spacing is too close, I recommend doubling the minimum spacing as shown in GS-105. This detail was originally created for the use of planters not swales. Swales will not need this many check dams.

Detail GS-115

As discussed above, allow 8' wide swales and allow the sidewalks to be in an easement. A thickened curb is not needed next to swales, please change the curb callout to refer to Detail 620, not GS-103

Details 416 and 418

As discussed above, allow 2:1 max slopes starting 5' from the freeboard line inside of the pond tract. Remove the shelf requirement in detail 418.

Detail 419

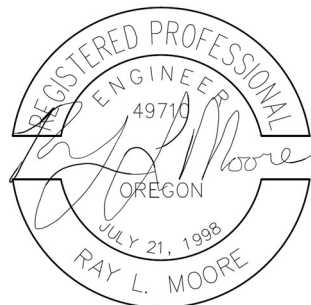
As discussed above, allow the wall restraints inside of easements on adjacent property.

Thank you for the opportunity to comment on the proposed code revisions. Feel free to give me a call if you have any questions.

Sincerely,
All County Surveyors & Planners, Inc.



Ray L. Moore, PE, PLS
Engineering Division



RENEWAL DATE: 12/31/2024