

MEMORANDUM

TO: Mark Noble, Senior Planner

FROM: Kirby Templin, Water Resources Engineer, PE

SUBJECT: The Willows – Stormwater Review Comments - 1

DATE: March 27, 2018

This memo summarizes the stormwater review comments for The Willows.

The following documents were submitted for review:

- The Willows Stormwater Management Plan, Dated March 8, 2018
- The Willows City Submission Drawings Part 1, Dated March 8, 2018

General

1. Provide a comment response memo.
2. There was one boring provided for the project site. Other borings in the area (from Windemere and Windemere South) all show borings in the area with clay layers and SM soils present. Provide additional geotechnical information at the proposed BMP locations to support the infiltration rate of 0.8 in/hr. Or design to the limiting SM soil present in the area (infiltration rate of 0.45 in/hr). In addition, due to the clay layers in the area, add a soil correction note to the plans at all the infiltration areas.
3. Add a typical detail for the proposed rain gardens, and a separate typical detail for the depressed islands.
4. The watershed boundaries do not follow the grading/drainage boundaries. There are areas in all watersheds that do not flow to the proposed BMPs. Also, breakdown watersheds for each island swale.
5. The SWMP identifies that there is an additional 23,804 sf of impervious area that needs to be infiltrated on site which equates to 2,182 cf. It does not appear that enough impervious area is routed to the proposed BMPs with necessary volume to treat this additional area. Include a summary in the SWMP that identifies the impervious area routed to each BMP, the 1-inch over impervious volume to be treated, and the proposed storage available at the BMP to show that the volume reduction requirement is met.
6. There is a concern that the island swales are significantly undersized for the contributing impervious area and that they will not function as intended. It does not appear that there is any pretreatment provided. In addition, there is not enough information in the grading plan (or details) to verify that there is depression storage to provide the water quality volume (calculated as an instantaneous volume).
7. Include a runoff volume summary to compare the “originally assumed” and proposed conditions for the 2-, 10-, and 100-year events. Also include an area routing summary, and a rate comparison summary. These summaries should be for all discharge points.

Modeling

8. Change the routing calculation setting to Dyn-Stor-Ind.
9. Change the advanced calculation setting to calculate separate Pervious/Impervious runoff.
10. Include HydroCAD reports for the 2-, 10-, 100-year, and 100-year 10-Day Snowmelt Condition.
11. Include the Node Listing information in the HydroCAD report.
12. Include 2D hydrographs in the HydroCAD report.

Storm Sewer

13. Provide storm sewer sizing calculations