

**PUBLIC WORKS**

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Jennifer D. Walker, Director

MEMORANDUM

DATE: January 26, 2023
March 13, 2023

TO: Arthur Saint, PE, Development Review

FROM: Zach Severs, PE, Public Works Water Resources

SUBJECT: Scoping Report Review Comments – Sienna Phase 1 Subdivision,
Thurston County Project #2022103527, Parcel #09090009000

THURSTON COUNTY
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BUILDING DEVELOPMENT CENTER

Thurston County Public Works staff have reviewed the Scoping Reports and Plans prepared/provided by LDC, Inc. (Tyrell Bradley, PE) dated June 30, 2022 for the above referenced project. The plan of action outlined in the scoping report is generally acceptable subject to addressing the following comments; however, please be aware additional comments may need to be addressed if changes are made to the plans and/or reports or, if other information is discovered during the review of the Drainage Report and Plans.

Findings:Submittal Requirements

1. Due to the nature of the project and with portions of the project already constructed under the 'Sienna Phase 2' project, a meeting may be scheduled to further discuss how the existing stormwater runoff and treatment into Tract 'D' pond can accommodate and treat new pollution generating impervious surfaces (PGIS) and pollution generating pervious surfaces (PGPS) and meet the 2022 DDECM requirements.
 - a. Tract 'D' pond satisfying 2022 DDECM requirements addressed in new drainage report.
2. Applicant shall conduct a thorough review of their submitted materials to ensure they are accurate.
 - a. Noted – thorough review of materials was performed prior to submittal.
3. Applicant shall complete an Engineered Drainage & Erosion Control Plan (DECP) addressing Core Requirements #1-11 of the 2022 Drainage Design and Erosion Control Manual (DDECM) prepared by a civil engineer licensed in the state of Washington. As of now, the drainage report indicates the project was designed to meet the 2016 DDECM. The plans/report will need to be updated to meet the 2022 DDECM requirements.
 - a. Plans/drainage report have been modified to meet the 2022 DDECM requirements.

4. Applicant shall submit an electronic copy of the WWHM2012 model with their DECP. Applicant shall also use the most current version of WWHM. Most recent version can be found at: <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Stormwater-manuals/Western-Washington-Hydrology-Model>
 - a. Electronic copy of WWHM2012 model will be submitted with the DECP.
5. All projects using infiltration facilities (other than single family residential drywells) shall submit a verification testing plan and contingency plan for under performance. The plan shall include a reasonable "worst-case" projection of long-term infiltration performance and describe methods and costs for improving/restoring performance and/or expanding facility size. See Sections 3.1.5 & 3.1.6, Volume V of the DDECM.
 - a. The initial geotechnical investigation was performed by Insight Geologic in 2004 which was used to inform the pond design. Infiltration verification test was completed on-site on December 28, 2022 as part of Sienna II, and used to back check the original design to confirm capacity. The results have been included in submittal package as a stormwater memorandum. Worst-case scenario, facility underperformance, and potential increasing of facility capacity have been included in the drainage report.
6. Thurston County has been collecting data on rainfall and water levels at various locations within the county. This information may be used for planning purposes only and can be found in the following link: <https://www.thurstoncountywa.gov/sw/Pages/monitoring-dashboard.aspx>.
 - a. Noted
7. Applicant shall submit completed Drainage Report Checklists including, but not limited to:
 - a. Project Elements Submission Completeness
 - b. Drainage Report Required Elements
 - c. Construction Plan Required Elements
 - d. Any checklists relevant to planned Best Management Practices (BMP's)
 - e. LID.02 Soil Preservation and Amendment Checklist

Checklists are available on the Thurston County Website:

<https://www.thurstoncountywa.gov/sw/Pages/dm-2022-docs.aspx>

Drainage Report Checklists have been filled out and included with submittal.

8. Landscape & Irrigation Plans shall be submitted for review.
 - a. Preliminary landscape plan has been submitted, Irrigation Plan to be provided at final design.
9. No trees or shrubs shall be planted within 25-feet of catch basins, manholes, inlet/outlet of pipes, spillways, or level spreaders. The Landscaping Plans shall reflect this.
 - a. Noted – To be issued as a condition of approval in the hearing recommendation(s) per Zach Sever's allowance
10. See Table 3.5, Volume III for maximum spacing for inlet structures on paved roadway surfaces.
 - a. Noted – maximum spacing for inlet structures has been adhered to in site design.

Drainage Report

11. In Section 9: Facility Sizing and Downstream Analysis, it states infiltration drywells will be utilized for the proposed lot roof and backyard runoff. Please include in the Construction Documents a typical lot layout and typical drywell sizing to ensure that proper horizontal setbacks and vertical separation from groundwater/restrictive layer will be achieved. If minimum setbacks are not a possible, a variance(s) will be required for reducing said setbacks.
 - a. Typical lot layout and typical drywell sizing will be provided at the time of construction document submittal.
12. From the submitted drainage report, the WWHM calculations indicates there is more than 15,000-square feet of impervious area contributing to the project's basin. From this, the project is required to perform Infiltration Receptor Characterization. See Section 2.3, Volume III of the DDECM for additional information and requirements.
 - a. Geotechnical report was completed along with the installation of six groundwater monitoring wells. A mounding analysis was conducted on-site at the location of pond G (located within Tract D). This work was completed as part of the Sienna II plat and findings have been provided within this report. The monitoring wells were removed (except for Well 2 located in the SW corner of Sienna I) during the construction of the Sienna II plat, including the wells that were drilled for the design of pond G within Tract D. Results and findings are attached in the Drainage Report submittal.

Core Requirement #1: Stormwater Site Planning

13. A complete Engineered DECP and Construction Stormwater Pollution Prevention Plan (SWPPP) is required to meet Core Requirement #1.
 - a. SWPPP has been completed and included with this submittal within the Drainage Report in Appendix 4.

Core Requirement #2: Construction Stormwater Pollution Prevention Plan

14. A Construction Stormwater Pollution Prevention Plan (SWPPP) is required to meet Core Requirement #2. Note that the Construction SWPPP shall be submitted and accepted prior to permit issuance.
 - a. Construction SWPPP has been provided within the Drainage Report in Appendix 4.

Core Requirement #3: Source Control of Pollution

15. Applicant shall submit a completed Source Control Plan with their Drainage and Erosion Control Plan. A template Source Control Plan is available on the Thurston County website at <https://www.thurstoncountywa.gov/sw/Pages/dm-2022-docs.aspx>.
 - a. A Source Control Plan has been completed and included with the Drainage Report as Appendix 5.

Core Requirement #4: Preservation of Natural Drainage Systems and Outfall

16. Existing drainage patterns shall be shown on the plans and preserved to the maximum extent practicable.
 - a. Noted – existing drainage patterns have been preserved to the maximum extent feasible and discussed in the drainage report.

Core Requirement #5: On-site Stormwater Management

17. Per Table 2-1 in Section 2.4.6, Volume I of the DDECM, the project is located inside the City of Tumwater Urban Growth Area (UGA) on a 16.28-acres parcel. Therefore, the project shall meet LID Performance Standards and BMP LID.02, or List #2 located in Section 2.4.6.2, Volume I of the DDECM.
- a. Project meets LID List #2 standards from the 2022 DDECM.
18. BMP LID.02 is required for lawn and landscaped areas. The extent of BMP LID.02 Post Construction Soil Quality and Depth must be shown on the plans. Note, all lawn/landscape areas subject to BMP LID.02 may be modeled as pasture in WWHM.
- a. The extent of BMP LID.02 Post Construction Soil Quality and Depth is shown on the plans. A Soil Management plan has been prepared along the supporting documentation.
19. Applicant shall submit a site-specific Soil Management Plan with their application. Refer to the Design Guide for Post-Construction Soils Quality and Depth for the submittal requirements. Please see link for additional information: <https://www.thurstoncountywa.gov/sw/swdocuments/DG-4%20POST-CONSTR%20SOILS.pdf>
- a. A Soil Management Plan has been prepared and provided within the Drainage Report submittal as Appendix 9.

Core Requirement #6: Runoff Treatment

20. Pollution generating hard surfaces exceed 5,000-square feet within a single threshold discharge area and the proposed project will be classified as residential. Therefore, basic runoff treatment is required.
- a. Basic stormwater runoff treatment is being provided as part of the project design.
21. Originally, Sienna Phase 1 received preliminary plat that was vested under the 1994 DDECM. The preliminary plat expired and thus, this project will need to meet the latest 2022 DDECM requirements. As of now, the stormwater pond in Tract 'D' was constructed under Phase 2 and utilized Filter Strips for Runoff Treatment for PGIS and PGPS, which was designed to meet the 1994 DDECM. With adding new pollution generating surfaces to the existing pond, calculations/modifications may be necessary to ensure all new runoff is treated per the 2022 DDECM.
- a. Design stormwater facilities have been analyzed to ensure all new runoff generated from the PGIS and PGPS will be treated per the 2022 DDECM.

Core Requirement #7: Flow Control

22. Flow control is required for this site. Applicant must submit WWHM2012 modeling which shows the proposed BMP'S meeting the flow control requirements.
- a. Flow control has been provided as part of the project design and the WWHM2012 models will be included in the submittal. Submittal package includes two WWHM models, one for the field-verified 0.92 in/hr infiltration rate and one for the design infiltration rate of 4 in/hr. The pond facility passes in both cases.
23. Verify horizontal setbacks to property lines, buildings, septic systems, drinking water wells and other on-site (and off-site) features are met. See Appendix V-E, Volume V for setback requirements.
- a. All required site setbacks have been met in the proposed site design.
24. The Tract 'D' pond will need to propose vehicular access meeting the requirements of Appendix V-E, Volume V of the 2022 DDECM. As of now, the plans do not show an access road or access ramp.
- a. A vehicular access road located on Tract 'E' has been provided for Tract 'D' pond and meets

the requirements of Appendix V-E Volume V. Access Road is now clearly shown on plans.

Core Requirement #8: Wetland Protection

25. Per Thurston County Geodata, no wetlands or wetland buffers are mapped on-site. No wetland protection is required at this time.

- a. Noted – no wetland protection required at this time.

Core Requirement #9: Operations and Maintenance

26. Applicant must develop and record with the Thurston County Auditor an agreement to maintain stormwater facilities and implement a pollution source control plan for all those facilities to be maintained by the property owner. The Operations Plan and Source Control Plan shall be included as attachments to any recorded document(s).

- a. A Maintenance Agreement for the stormwater facilities will be provided at the time of civil permit submittal.

Core Requirement #10: Financial Liability

27. The applicant shall provide a financial guarantee to the DDECM Administrator to ensure satisfactory maintenance of drainage facilities (i.e. Infiltration facilities) for a minimum of 2 years from final acceptance of the project.

- a. Noted

Core Requirement #11: Off-site Analysis and Mitigation

28. A qualitative downstream analysis shall be performed for any potential runoff from the site, even if 100-percent infiltration is proposed. The downstream analysis will include the flow path from the site to the receiving water or up to one mile, whichever is less, even if all runoff will be full dispersed on site. See section 2.4.12, Volume I of the DDECM for requirements.

- a. A qualitative downstream analysis has been performed and discussed in the drainage report.