Aurora Oaks PRD Drainage Core Requirement #5 Compliance Justification

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Thurston County Community Planning and Economic Development (CPED)
3000 Pacific Ave Se, STE. 100
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**Subject:** **Aurora Oaks PRD (Project# 2023102411) Drainage Core Requirement #5 Compliance Justification**

The Aurora Oaks PRD proposal meets the stormwater management requirements of the 2022 Thurston County Drainage Design & Erosion Control Manual. The Preliminary Drainage Report 5-12-2023, as included in the initial preliminary plat submittal to Thurston County on 5-18-2023, describes the proposed stormwater management approach and how the project meets all applicable requirements.

A public comment was received stating that the project does not meet the requirements of Low Impact Development (LID) and Core Requirement #5 – On-Site Stormwater Management, therefore this memorandum is provided to specifically outline how the project meets that Core Requirement.

Core Requirement #5 – On-Site Stormwater Management is triggered with this project due to the project proposing more that 5,000 square feet of new plus replaced hard surface area as identified in the Drainage Manual's Flow Chart for Determining Requirements for New Development included as Attachment #1.

The requirements of Core Requirement #5 are included in Attachment #2. The Drainage Manual identifies options for meeting Core Requirement #5 as identified in the Manual's Flow Chart for Determining Core Requirements #5 Requirements included as Attachment #3. The flow chart identifies that Core Requirement #5 will be addressed by meeting the LID performance standard by the use of any Flow Control BMP in the manual. In addition, the project must also apply BMP LID.02 Post-Construction Quality and Depth to all disturbed areas that are not proposed to be stabilized with hardscape or structures (homes).

As identified in section 2.4.6.1 of the Drainage Manual, the LID performance standard is:

> *Stormwater discharges shall match developed discharge durations to pre-developed durations for the range of pre-developed discharge rates from 8% of the 2-year peak flow to 50% of the 2-year peak flow. Refer to the Standard Flow Control Requirement section in Core Requirement #7: Flow Control for information about the assignment of the pre-developed condition. Project sites that must also meet Core Requirement #7 must match flow durations between 8% of the 2-year flow through the full 50-year flow.*
>
> *Rain Gardens cannot be used to achieve the LID Performance Standard. Bioretention (BMP LID.08) may be chosen to achieve the LID Performance Standard.*
>
> *Designers may use any Flow Control BMP in this Manual to meet the LID Performance Standard. There are no specific Flow Control BMPs that must be used to meet the LID Performance Standards.*

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The LID performance standard is met by use of bioretention facilities treating and infiltrating the proposed stormwater runoff. Bioretention is an approved LID and flow control BMP as identified in the Drainage Manual in section 2.2.6 LID.08 Bioretention.

The proposed bioretention facilities are sized and modelled in the approved hydraulic modelling software, WWHM2012. Modelling output reports are included in the Preliminary Drainage Report in Appendix D and I which confirm adequate sizing and design of the facilities. Adequate sizing/design of bioretention facilities within WWHM2012 confirms the design matches the developed discharge durations to pre-developed durations for the range of pre-developed discharge rates from 8% of the 2-year peak flow to 50% of the 2-year peak flow and meets Core Requirement #7 by matching flow durations between 8% of the 2-year flow through the full 50-year flow. Therefore, the project meets the LID performance standard.

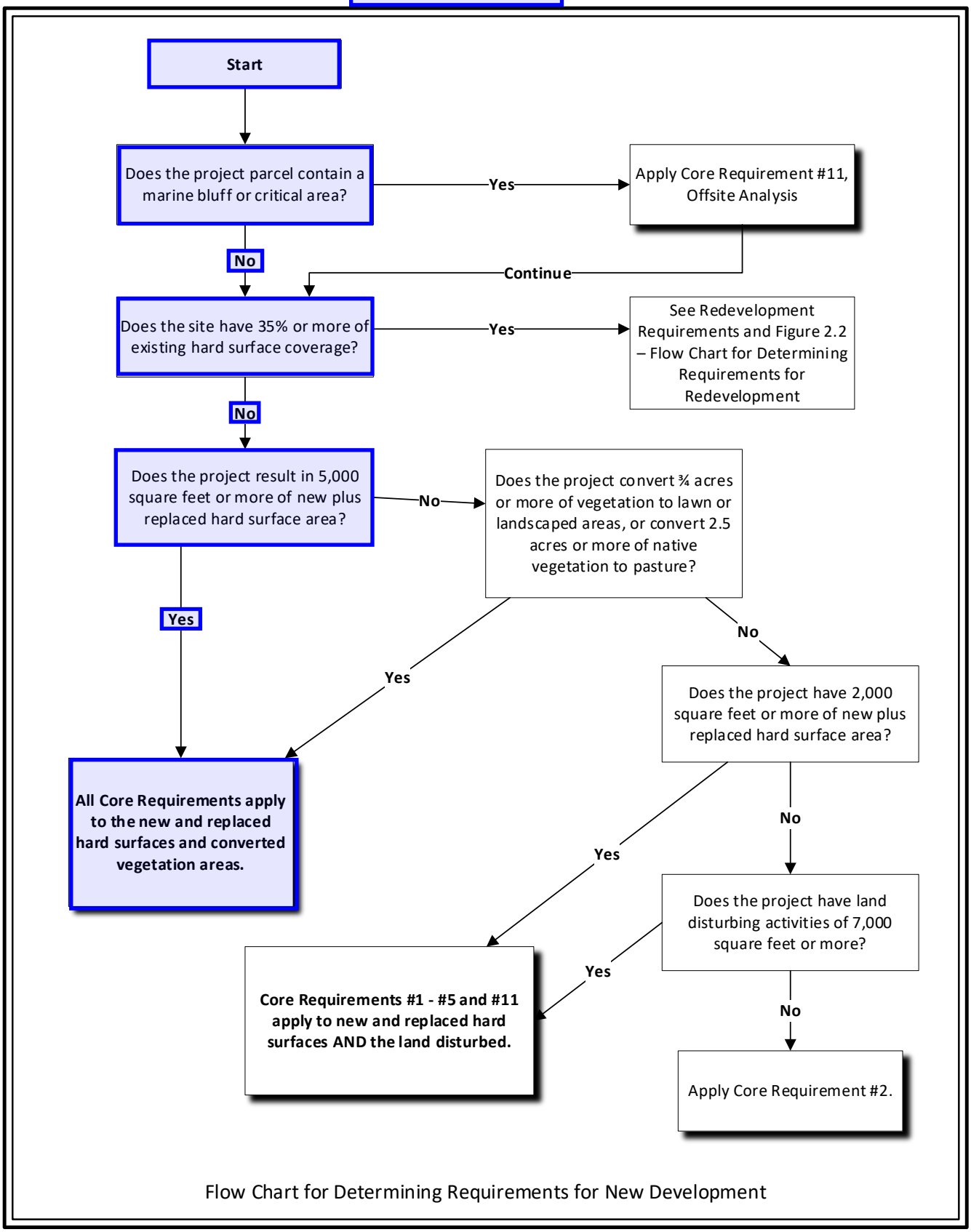
In addition, the project must also apply BMP LID.02 Post-Construction Quality and Depth to all disturbed areas that are not proposed to be stabilized with hardscape or structures (homes). This is being addressed/met as identified in the Preliminary Drainage Report and included in the Stormwater Management Notes on Civil Plan Sheet C3.0.

No Core Requirements require bioretention facilities to be small and spread out as mentioned in the public comment. Therefore, Core Requirement #5 is being fully addressed and met by the proposed Aurora Oaks PRD project. Thurston County has reviewed the proposed stormwater management plan and the Preliminary Drainage Report and did not require any revisions or adjustments to the plan or report.

Mark R. Steepy, PE
Principal

Blake A. Lord, PE
Associate

ATTACHMENT #1




Flow Chart for Determining Requirements for New Development

**Figure I - 2.1 Flow Chart for Determining Requirements for New Development.**

ATTACHMENT #2

### 2.4.6 Core Requirement #5: Onsite Stormwater Management

Projects shall employ stormwater management BMPs in accordance with the following project thresholds, standards, and lists to infiltrate, disperse, and retain stormwater runoff on-site to the maximum extent feasible without causing flooding or erosion impacts.

All projects that require Core Requirement #5 (as described in Chapter 2) must employ stormwater management BMPs as described below. The compliance options for the project depend on the amount of improvements proposed, the location of the project, the size of the parcel the project is on, and whether or not the project is flow control exempt. All projects, including those not meeting the thresholds of Chapter 2, shall use on-site measures to the maximum extent practicable for the control of stormwater.

Projects qualifying as flow control exempt in accordance with Section 2.4.8 Core Requirement #7: Flow Control, do not have to achieve the LID performance standard,

nor consider bioretention, rain gardens, permeable pavement, and full dispersion BMPs. However, these projects must implement the following LID BMPs if feasible:

- Post-Construction Soil Quality and Depth (BMP LID.02) – All disturbed areas of the project to be landscaped shall implement BMP LID.02 to restore soil quality and depth.

- Downspout dispersion or infiltration, and/or perforated stub-out connections (BMP LID.05, LID.06, and/or LID.04A)

- Concentrated flow dispersion (BMP LID.07) or sheet flow dispersion (BMP LID.06)

The use of Low Impact Development BMPs is more effective in reducing disruptions to the site's natural hydrologic characteristics and preferable to more traditional BMPs such as detention ponds. In some cases, the application of on-site measures can result in reducing post-development flows or reducing the effective impervious surface and/or effective pollution generating impervious surface within a threshold discharge area to the extent that additional flow control or water quality treatment facilities (Core Requirements #6 and #7) are not required.

Use Figure I - 2.4 and the subsequent text to determine the project requirements for Core Requirement #5.

ATTACHMENT #3

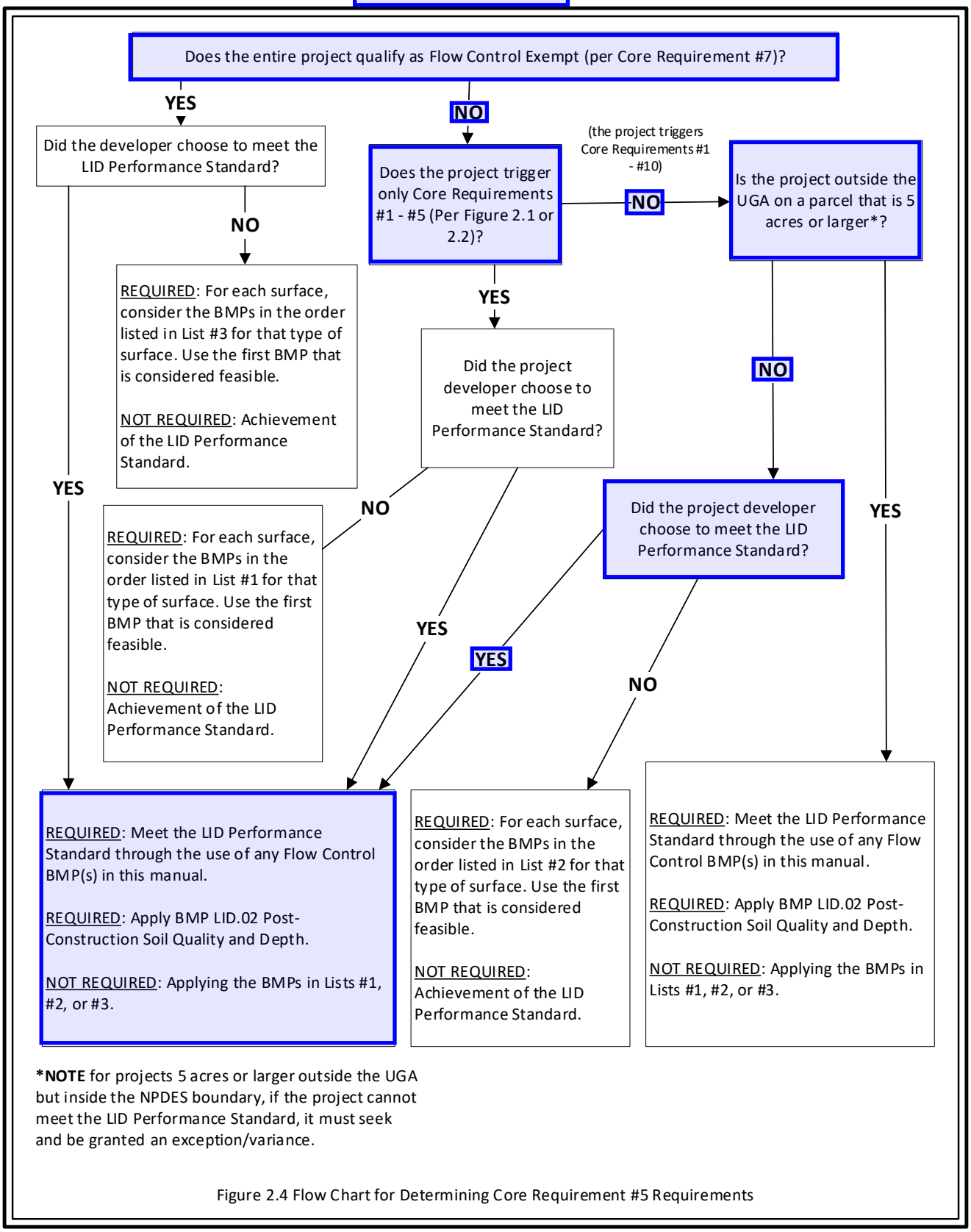



Figure 2.4 Flow Chart for Determining Core Requirement #5 Requirements

**Figure I - 2.4 Flow Chart for Determining Core Requirement #5 Requirements**