TOWN OF WINDSOR

Town of Windsor
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MEMORANDUM

DATE: June 7, 2023

TO: All Concerned Parties

FROM: Shannon Cotulla, Public Works Director/Town Engineer

RE: Flood Design Criteria and Hydraulic Analysis Requirements for Development Projects within the Town of Windsor.

The purpose of this memo is to detail the flood design criteria which are required to be incorporated into the design of all projects in the Town of Windsor to the satisfaction of the Town Engineer. The current Storm Drain Master Plan is available on the Town's website as a reference document.

1. No surface drainage crossing property lines shall be allowed, all drainage must be contained within a drainage conveyance system.

2. Any drainage system crossing property lines shall be contained within an easement and approved by the Town Engineer. Subsurface drainage systems crossing property lines may be subject to additional requirements per the Town Engineer to ensure unimpeded drainage from neighboring affected properties.

3. Stormwater discharge must remain in the same watershed as pre-construction conditions unless otherwise approved by the Town Engineer.

4. The stormdrain conveyance system shall be designed to convey the Design storm event without exceeding 80% of the diameter of the stormdrain pipes.

5. The lowest adjacent grade (LAG), to be used in determining freeboard from the 100-year flood elevations, shall be the lowest finished grade touching a proposed structure. The LAG shall be a minimum of 12" above the 100-year flood elevation. The 100-year flood elevation shall be determined from the Overland Release analysis described below.

6. An Overland Release routing analysis shall be prepared by Designer. For the purposes of the Overland Release routing analysis the stormdrain system shall be modeled as if it is full and/or not functioning.

   All Overland Releases shall be designed such that they can be contained within public Right-of Ways unless otherwise approved by the Town Engineer.

Project-specific hydraulic analyses conforming to the following requirements shall be prepared and submitted for all development applications within the Town of Windsor.

7. Projects subject to the Low Impact Development requirements as set forth in the Phase I MS4 permit shall submit a separate report per the guidelines in the Storm Water Low Impact Development Technical Design Manual in addition to the hydraulic analysis.

8. Hydraulic analyses shall be prepared, signed, and stamped by a Civil Engineer duly licensed in the State of California.

9. Hydraulic analyses shall be performed per the guidelines set forth in Sonoma Water's Flood Management Design Manual.

10. Hydraulic analyses shall be in all respects subject to the review and approval of the Town Engineer and Sonoma Water.

11. All hydraulic analyses shall be based upon flow values reflecting conditions of full development of the applicable watershed in accordance with the Town of Windsor General Plan (within the Town's Sphere of Influence) and the Sonoma County General Plan (outside the Town's Sphere of Influence). Flow values, or the acceptable basis thereof, shall be approved by the Town Engineer.

12. The basis of downstream starting water surface elevations shall be approved by the Town Engineer.

13. The limits of hydraulic analysis shall extend from a minimum of 500 feet downstream of the project limit to the upstream limit of the project.

14. Sufficient detention or inlet control shall be provided on site in order for the project to show that there is no post-development increase in peak flow from the site for the design storm. Deviations from this requirement shall be approved by the Town Engineer.

    a. The peak flows shall be determined for each location where stormwater leaves the project area (point of concentrations, POC) and connects to existing Town stormwater infrastructure. The hydraulic analysis submittal shall include calculations demonstrating the peak flow mitigation.

In addition to the requirements above project-specific hydraulic analyses, for projects that discharge or are adjacent to a creek or open channel, shall include the following requirements:

15. Baseline 10-year, 25-year, and 100-year hydraulic analyses shall be performed, based upon current field cross sections (without proposed fill or improvements) at intervals of no greater than 100 feet along the drainageway centerline.

16. Should any fill or improvements be proposed within the inundation limits of the 100-year baseline analysis, additional 10-year, 25-year, and 100-year analyses reflecting all fill and improvements proposed along the applicable creek corridor shall be performed, and a

comparison showing the impacts of the proposed fill and improvements to the baseline water surface elevations shall be provided.

17. Manning n values shall reflect the most conservative of reasonably foreseeable channel and overbank conditions, including consideration of future vegetative growth and environmental and other limitations on channel and corridor maintenance practices.

- The hydraulic analysis submittal shall include the Federal Emergency Management Agency (FEMA) Flood Insurance Study (FIS) mapping with the project site delineated. For projects that are proposed within limits of FEMA designated Floodplains for Floodways, applicants shall demonstrate compliance with current FEMA guidelines.