1.2.3.1 AREA-SPECIFIC FLOW CONTROL FACILITY REQUIREMENT

REQMT

Projects subject to Core Requirement #3 must provide flow control facilities as specified by the area-specific facility requirements and exceptions for the **designated flow control area** in which the proposed project or ***threshold discharge area*** of the proposed project is located as described in Subsections A, B, and C below.

Guide to Applying the Area-Specific Flow Control Facility Requirement

The flow control facility requirement varies across the county landscape according to the *flow control area* within which the project or a ***threshold discharge area*** of the project is located. Flow control areas are designated by the county to target the level of flow control performance to the broad protection needs of specific basins or subbasins. There are currently three such flow control areas, which are depicted on the Flow Control Applications Map adopted with this manual (see map pocket on inside of back cover). These are the **Basic Flow Control Areas**, **Conservation Flow Control Areas**, and **Flood Problem Flow Control Areas**. Each flow control area has an area-specific set of minimum flow control facility performance criteria, design assumptions, surfaces that must be mitigated, and exceptions. These provisions all comprise what is referred to as the "area-specific flow control facility requirement."

Note that the minimum required performance of the facility as specified by this requirement may need to be increased to ensure that downstream drainage problems are not created or significantly aggravated as set forth in Section 1.2.2.2, "Drainage Problem-Specific Mitigation Requirements" (p. 1-30). Table 1.2.3.A (p. 1-36) provides a quick guide for selecting the flow control performance criteria necessary to meet both the area-specific flow control facility requirement and the problem-specific mitigation requirement. This is further explained in Step 4 below.

For efficient application of the flow control facility requirement, the following steps are recommended:

1. Check the Direct Discharge Exemption on Page 1-37 ~~and the Impervious Surface Exemption on Page 1-38~~ to determine if and/or which portions of your project are exempt from the flow control facility requirement. If exempt from the flow control facility requirement, proceed to Step 6.
2. Use the Flow Control Applications Map to determine the flow control area in which your project is located. If this determination cannot be made from the map, a more detailed delineation of flow control areas is available on King County's Geographic Information System (GIS).
3. Consult the detailed requirement and exception language for the identified flow control area to determine if and how the flow control facility requirement applies to your project. This requirement and exception language is detailed on subsequent pages for each of the three flow control areas depicted on the Flow Control Applications Map. If a flow control facility is not applicable per the area-specific exceptions, proceed to Step 6.
4. If downstream drainage problems were identified through offsite analysis per Core Requirement #2 and are proposed to be addressed through onsite flow control, use Table 1.2.3.A (p. 1-36) to determine if and what additional flow control performance is necessary to mitigate impacts (i.e., to prevent creation or aggravation of the identified problems).
5. Use Section 1.2.3.2 (p. 1-45) to identify the applicable requirements for implementing the flow control facility requirement. These requirements cover facility siting, analysis and design, unusual situations, and other site-specific considerations.
6. Use Section 1.2.3.3 (p. 1-50) to identify the flow control BMPs that must be applied to your ***project site*** regardless of whether a flow control facility is required.

TABLE 1.2.3.A
SUMMARY OF FLOW CONTROL PERFORMANCE CRITERIA ACCEPTABLE FOR IMPACT MITIGATION[1]

IDENTIFIED PROBLEM DOWNSTREAM	AREA-SPECIFIC FLOW CONTROL FACILITY REQUIREMENT		
	Basic Flow Control (FC) Areas	**Conservation FC Areas**	**Flood Problem FC Areas**
No Problem Identified Apply the minimum area-specific flow control performance criteria.	Apply the Level 1 flow control standard, which matches ***existing site conditions*** 2- and 10-year peaks	Apply the ***historic site conditions*** Level 2 flow control standard, which matches historic durations for 50% of 2-yr through 50-year peaks AND matches historic 2- and 10-year peaks	Apply the ***existing*** or ***historic site conditions*** Level 2 flow control standard (whichever is appropriate based on downstream flow control area) AND match ***existing site conditions*** 100-year peaks
Type 1 Drainage Problem ***Conveyance System Nuisance Problem***	Additional Flow Control Hold 10-year peak to overflow T_r peak[2][3]	*No additional flow control or other mitigation is needed*	*No additional flow control or other mitigation is needed*
Type 2 Drainage Problem ***Severe Erosion Problem***	Additional Flow Control Apply the ***existing site conditions*** Level 2 flow control standard[3][4]	*No additional flow control is needed, but other mitigation may be required*[4]	*No additional flow control is needed, but other mitigation may be required*[4]
Type 3 Drainage Problem ***Severe Flooding Problem***	Additional Flow Control Apply the ***existing site conditions*** Level 3 flow control standard to peak flows above the overflow T_r peak. If flooding is from a closed depression, make design adjustments as needed to meet the "special provision for closed depressions"[3][5]	Additional Flow Control Apply the ***historic site conditions*** Level 3 flow control standard. If flooding is from a closed depression, make design adjustments as needed to meet the "special provision for closed depressions"[3][5]	Additional Flow Control If flooding is from a closed depression, make design adjustments as needed to meet the "special provision for closed depressions" [3][5]
Potential Impact to Wetland Hydrology as Determined through a Critical Area Review per KCC 21A.24.100	Additional Flow Control DDES may require design adjustments per the wetland hydrology protection guidelines in Reference Section 5	Additional Flow Control DDES may require design adjustments per the wetland hydrology protection guidelines in Reference Section 5	Additional Flow Control DDES may require design adjustments per the wetland hydrology protection guide-lines in Reference Section 5

Notes:

(1) More than one set of problem-specific performance criteria may apply if two or more downstream drainage problems are identified through offsite analysis per Core Requirement #2. If this happens, the performance goals of each applicable problem-specific criteria must be met. This can require extensive, time-consuming analysis to implement multiple sets of outflow performance criteria if additional onsite flow control is the only viable option for mitigating impacts to these problems. In these cases, it may be easier and more prudent to implement the ***historic site conditions*** Level 3 flow control standard in place of the otherwise required area-specific standard. Use of the historic Level 3 flow control standard satisfies the specified performance criteria for all the area-specific and problem-specific requirements except if adjustments are required per the special provision for closed depressions described below in Note 5.

(2) Overflow T_r is the return period of conveyance system overflow. To determine T_r requires a minimum Level 2 downstream analysis as detailed in Section 2.3.1.1. To avoid this analysis, a T_r of 2 years may be assumed.

(3) Offsite improvements may be implemented in lieu of or in combination with additional flow control as allowed in Section 1.2.2.2 (p. 1-28) and detailed in Section 3.3.5.

(4) A tightline system may be required regardless of the flow control standard being applied if needed to meet the discharge requirements of Core Requirement #1 (p. 1-21) or the outfall requirements of Core Requirement #4 (p. 1-54), or if deemed necessary by DDES where the risk of severe damage is high.

(5) **Special Provision for Closed Depressions with a Severe Flooding Problem:**
IF the proposed project discharges by overland flow or conveyance system to a closed depression experiencing a ***severe flooding problem*** AND the amount of ***new impervious surface*** area proposed by the project is greater than or equal to 10% of the 100-year water surface area of the closed depression, THEN use the "point of compliance analysis technique" described in Section 3.3.6 to verify that water surface levels are not increasing for the return frequencies at which flooding occurs, up to and including the 100-year frequency. If necessary, iteratively adjust onsite flow control performance to prevent increases. *Note: The point of compliance analysis relies on certain field measurements taken directly at the closed depression (e.g., soils tests, topography, etc.). If permission to enter private property for such measurements is denied, DDES may waive this provision and apply the* ***existing site conditions*** *Level 3 flow control standard with a mandatory 20% safety factor on the storage volume.*