

EXHIBIT A

**CITY OF SNOQUALMIE
ADDENDUM TO
2009 KING COUNTY SURFACE WATER DESIGN MANUAL
Draft July 19, 2011**

I. INTRODUCTION

The City of Snoqualmie has adopted Surface and Stormwater Regulations in chapter 15.18 of the Snoqualmie Municipal Code that establish a hierarchy of controlling documents, which are (from highest to lowest) as follows:

- Appendix 1 of the Western Washington Phase II Municipal Storm Water Permit;
- Appendix I-E, Flow Control Exempt Surface Waters, of the Washington State Department of Ecology Stormwater Management Manual for Western Washington, February 2005;
- This City of Snoqualmie Addendum to the 2009 King County Surface Water Design Manual; and
- The 2009 King County Surface Water Design Manual.

The purpose of this Addendum is to guide applicants and City reviewers in harmonizing the various requirements of the controlling documents. The fundamental principle is that if a project meets the thresholds, definitions, minimum requirements and variance/exception criteria of a higher priority controlling document, any conflicting thresholds, definitions, minimum requirements and variance/exception criteria of a lower priority document shall not apply. Furthermore, if any provision of the 2009 King County Surface Water Design Manual is in conflict with a requirement of Appendix I of the Western Washington Phase II Municipal Storm Water Permit, either directly or by implication, it shall not apply.

In addition, the controlling documents use different terminology and the 2009 King County Surface Water Design Manual contains many references to King County code sections, maps and other references. Therefore, this Addendum also provides tables identifying the equivalent City code provision, reference or map where applicable. If there is no equivalent City code provision, reference or map, the provisions citing King County code provisions, references or maps do not apply within the City of Snoqualmie.

Addendum Organization

The information presented in this addendum is organized as follows:

- I. Introduction:
- II. Terminology: At times King County and City of Snoqualmie use different terminology to describe or to refer to equivalent subject matter. This section identifies these terms and the City of Snoqualmie's equivalent terminology.
- III. Definitions:
- IV. Key Revisions: This section specifically identifies the revisions the City has made to the KCSWDM
- V. Code Reference Tables: King County code is referenced in many places throughout the KCSWDM. This section identifies these code references and equivalent City code where applicable.

- VI. Reference Materials: This section identifies which reference materials provided in the KCSWDM are applicable and which are not. It also identifies if equivalent City of Snoqualmie reference materials are available.
- VII. City of Snoqualmie equivalents to the maps referenced in the KCSWDM are included in this section.

II. TERMINOLOGY

Certain terminology in the 2009 King County Surface Water Design Manual is specific to King County. The following Table 1 lists King County terminology and the City of Snoqualmie equivalent.

Table 1: King County Terminology and City of Snoqualmie Equivalents	
King County 2009 Surface Water Design Manual	City of Snoqualmie Equivalent
Critical Drainage Area	No direct equivalent; not applicable in City of Snoqualmie
Department of Development and Environmental Services (DDES)	City of Snoqualmie Public Works and Planning Departments
Department of Natural Resources and Parks (DNRP) [including the Water and Land Resources (WLR) Division]	City of Snoqualmie Planning Department
Director	City of Snoqualmie Director of Public Works
King County	City of Snoqualmie
King County Code (KCC)	Snoqualmie Municipal Code
King County Designated/Identified Water Quality Problem	This determination is made on a case by case basis in the City of Snoqualmie
King County Road Standards	City of Snoqualmie Street and Utility Design and Construction Standards, Chapter 12.16 of the Snoqualmie Municipal Code
Sensitive Areas Folio	City of Snoqualmie Sensitive Areas Map
King County 2007 NPDES permit	City of Snoqualmie is not yet a NPDES Phase II Community

III. DEFINITIONS

“Ecology Appendix 1”

Appendix I of the Western Washington Phase II Municipal Storm Water Permit

“KCSWDM”

The 2009 King County Surface Water Design Manual

IV. KCSWDM REVISIONS

This section includes revisions to the KCSWDM to address the differences between King County's and the City's organization and processes, as well as to ensure equivalency with Ecology Appendix 1.

1.1 Drainage Review

1.1.2. Drainage Review Types and Requirements

Modifications to KCSWDM Figure 1.1.2.A, presented with modifications as Figure 1 below.

This figure provides a flow chart for determining what type of drainage review is required.

The revised requirements are intended to be consistent with Ecology Appendix 1.

KCSWDM FIGURE 1.1.2.A FLOW CHART FOR DETERMINING TYPE OF DRAINAGE REVIEW REQUIRED

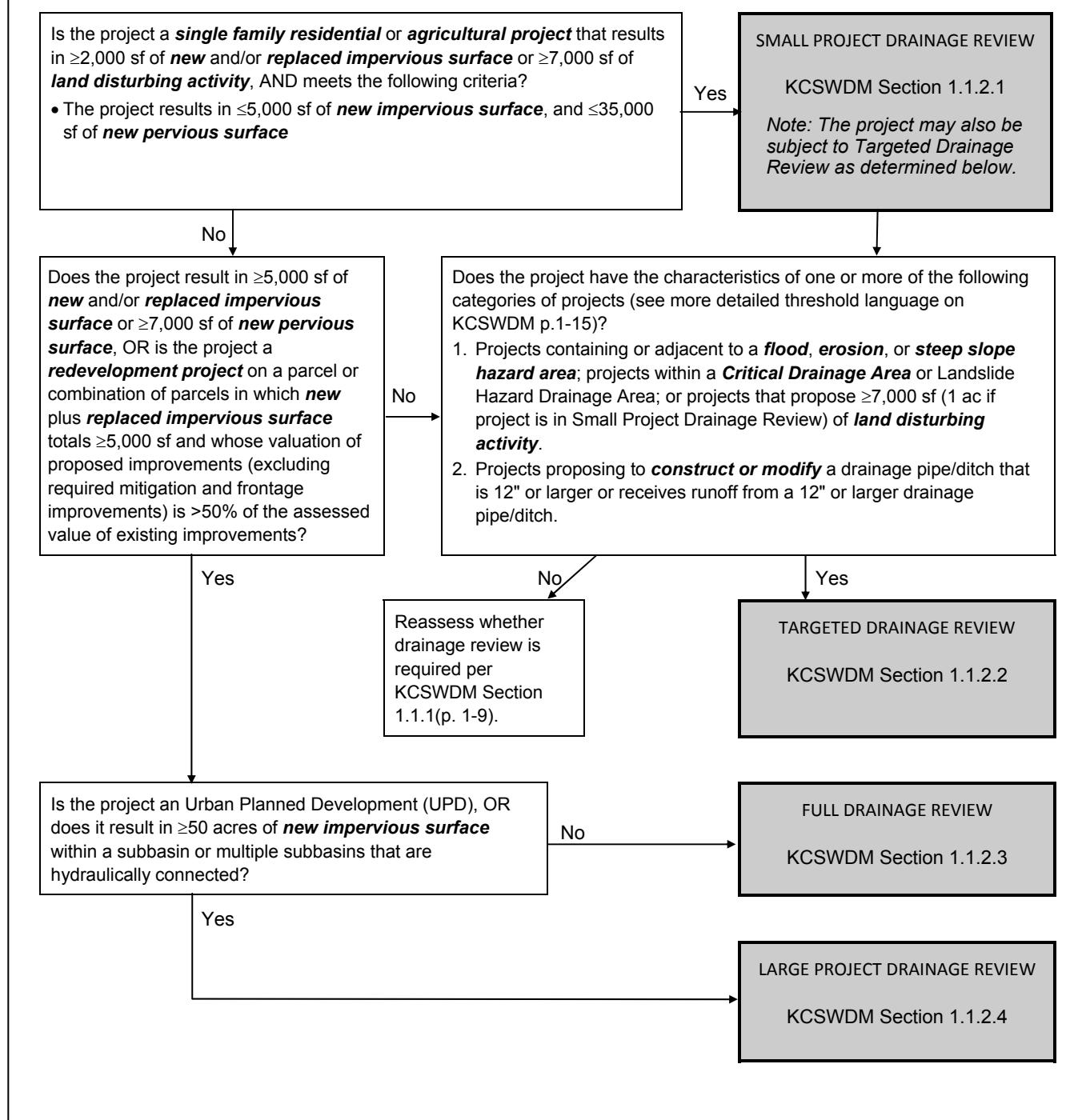


Figure 1: Flow Chart for Determining Type of Drainage Review Required

1.2 Core Requirements

1.2.2 Core Requirement #2: Offsite Analysis

1.2.2.1 Downstream Water Quality Problems

Exclude the section titled Downstream Water Quality Problems Requiring Special Attention.

1.2.3.3 Downstream Water Quality Mitigations

Exclude the section titled Downstream Water Quality Mitigations

1.2.3 Core Requirement #3: Flow Control

Consistent with the 2005 Ecology Stormwater Management Manual for Western Washington:

The threshold for the Basic Flow Control Exemption is:

- a) Less than 5,000ft² of new plus replaced impervious surface will be created, AND
- b) Less than 35,000ft² of new pervious surface will be added, AND

The threshold for the Impervious Surface Exemption for Transportation Redevelopment Projects is:

- a) Less than 5,000ft² of new impervious surface will be added, AND
- b) Less than 35,000ft² of new pervious surface will be added, AND
- c) The total new impervious surface within the project limit is less than 50% of the existing impervious surface.

The cost exemption for Parcel Redevelopment Projects is:

- a) Less than 5,000ft² of new impervious surface will be added, AND
- b) Less than 35,000ft² of new pervious surface will be added, AND
- c) The valuation of the projects proposed improvements (including interior improvements and excluding required mitigation improvements) is less than 50% of the assessed value of the existing site improvements.

1.2.3.1 Area-Specific Flow Control Facility Requirement

The Impervious Surface Percentage Exemption stated on page 1-38 is not allowed in order to maintain equivalency with the 2005 Stormwater Management Manual for Western Washington.

1.2.3.2 Flow Control Facility Implementation Requirements

1.2.3.2.B Methods of Analysis and Design

In addition to HSPF and KCRTS the Western Washington Hydrology Model is also an acceptable tool for continuous hydrology modeling.

1.2.3.2.D Sizing Credits for use for Flow Control BMPs

Flow control (LID) BMP technologies from the 2005 Ecology Western Washington Stormwater Design Manual and the 2005 Low Impact Development Technical Guidance Manual created by the Puget Sound Action Team, or as

hereafter amended, or others accepted by Ecology or King County are acceptable for use within the City of Snoqualmie.

1.2.5 Core Requirement #5: Erosion and Sediment Control

1.2.5.1 ESC Measures

Amended Soil (BMP T5.13, 2005 Ecology Stormwater Management Manual for Western Washington) is required for all landscaped areas on all project sites 1 acre or larger. Amended soil is recommended for all landscaped areas on project sites smaller than 1 acre.

1.2.5.2 ESC Performance and Compliance Provisions

B. Monitoring of Discharges

For projects that clear 2,000ft² or greater, the City may require the ESC Supervisor to have a turbidity meter onsite and use it to monitor surface and stormwater discharges from the project site and into onsite wetlands, streams, or lakes whenever runoff occurs from onsite activities and during storm events.

1.2.6 Core Requirement #6: Maintenance and Operations

KCSWDM maintenance and operations procedures should be used for guidance but City specific requirements may be applied on a case by case basis.

1.2.7 Core Requirement #7: Financial Guarantees and Liability

In addition to the KCSWDM requirements under Core Requirement #7 City of Snoqualmie specific requirements for financial guarantees and liability are included in SMC 15.16.170.

1.2.8 Core Requirement #8: Water Quality

1.2.8.1 A. Basic WQ Treatment Areas

Consistent with the 2005 Ecology Stormwater Management Manual for Western Washington requirements for use of the enhanced basic water quality treatment menu are:

- Industrial, commercial, and multi-family project sites 1 acre or larger. Road related project sites 1 acre or larger, with an AADT of 7,500 or greater, AND
- Single family residential subdivisions will not be required to implement enhanced basic water quality treatment, AND
- For projects less than 1 acre in size meeting the land use criteria for Enhanced Basic WQ Treatment, apply the enhanced treatment requirement unless it can be shown as not feasible.

The City will accept all water quality treatment facility-types identified in the 2005 Ecology Stormwater Management Manual for Western Washington with the following additions and alterations: Emerging technologies will be considered on

a case-by-case basis, provided the product has received a level of use designation from WA State Dept. of Ecology's TAPE program (<http://www.ecy.wa.gov/programs/wq/stormwater/newtech/technologies.html>)

For a rain garden to meet enhanced basic water quality treatment, it must be designed, using an approved continuous runoff model, to infiltrate 91% of the influent runoff (2005 Ecology Stormwater Management Manual for Western Washington Volume V, pg 3-8).

1.2.8.1 B. Sensitive Lake WQ Treatment Areas

These areas are not currently mapped within the City so requirements will be applied on a case by case basis.

1.2.8.1 C. Sphagnum Bog WQ Treatment Areas

These areas are not currently mapped within the City so requirements will be applied on a case by case basis.

1.4 Adjustment Process

An adjustment process specific to the City of Snoqualmie can be obtained through coordination with the Public Works Director.

5 Flow Control Design

5.3 Detention Facilities

5.3.4 Control Structures

5.3.4.1 Design Criteria

The minimum allowable orifice diameter has been increased from 0.25 to 0.5 inches.

V. Code Reference Tables

The King County Code is referenced in many places throughout the KCSWDM. The following tables identify these code references and equivalent City code where applicable.

Table 2: King County Code Reference and Snoqualmie Equivalents			
King County Code Reference	Subject of Reference	Snoqualmie Municipal Code Equivalent	Comment
KCC 2.98	Adoption Procedures	2.05	
KCC 2.98	Critical Drainage Areas (CDAs)	No equivalent	There are no critical drainage areas within the City of Snoqualmie
Title 9	Surface Water Management	15.18	
KCC 9.04	Surface Water Run-off Policy	No equivalent	Included within SMC 15.18
9.04.030	Drainage review - when	15.18.050	Thresholds are

	required - type.		identified in Figure 1 above
9.04.050	Drainage review requirements.	no equivalent	see Figure 1 above and the KCSWDM for requirements specific to each type of drainage review
9.04.070	Engineering plans for the purposes of drainage review.	no equivalent	see KCSWDM for description of engineering plans required for drainage review
9.04.090	Construction timing and final approval.	15.18.080	
9.04.115	Drainage facilities accepted by King County for maintenance.	15.18.110	
9.04.120	Drainage facilities not accepted by King County for maintenance.	15.18.120	
KCC 9.12	Water Quality	no equivalent	Refer to the King County Stormwater Pollution Prevention Manual and SMC 15.18.150 for Illicit discharge regulations
KCC 16.82	Clearing and Grading Code	15.20	
16.82.100 (F)	Retain duff layer of top soil	15.20.060 (B.2.a)	
16.82.100 (G)	Restore native soil moisture holding capacity	15.20.060 (B.2.b)	
16.82.150	Clearing standards for individual lots in the rural zone.	no equivalent	does not apply
16.82.150 (C)	Rural stewardship plan or the farm management plan	no equivalent	does not apply
KCC 20.20	Land use review procedures	no equivalent	
KCC 20.70.020	Critical aquifer recharge area	19.12.200	
KCC 21.A12	Urban Residential Development	no equivalent	
KCC 21A	Zoning		KCC 21A is covered under multiple SMC chapters
KCC 21A.06	Critical Areas Code: Definitions	19.12.020	

21A.08	Permitted uses	17.55	
21A.12.030	Densities and dimensions - residential zones.	17.15	
21A.14.180	On site recreation - space required.	no equivalent	
KCC 21A.14.180.D	Indoor recreation space requirements	no equivalent	
KCC 21A.24	Critical Areas	19.12	
KCC 21A.24	Critical Areas: Flood Hazard Area regulations	15.12	
KCC 21A.24	Critical Areas: zero-rise and compensatory storage provisions	no equivalent	The City does not require zero-rise or compensatory storage
KCC 21A.24.100	Critical area review	19.12.060	
KCC 21A.24.110	Critical area report requirement	no equivalent	
KCC 21A.24.170	Notice of critical areas	no equivalent	
KCC 21A.24.230	Flood hazard areas — components	no equivalent	
KCC 21A.24.270	Flood hazard areas — certification by engineer or surveyor	no equivalent	
KCC 21A.24.275	Channel migration zones — development standards and alterations	19.12.160	
KCC 25	Shoreline Management	19.08	

VI. Reference Materials

This section identifies which reference materials in the 2009 KCSWDM are applicable and which are not.

Table 3: King County Reference Material and Snoqualmie Equivalent		
2009 King County Surface Water Design Manual Reference Material Document	King County Reference Document Applicability	Equivalent City of Snoqualmie Reference Document
1. KCC 9.04 Surface Water Runoff Policy	No	SMC 15.16
2. Adopted Critical Drainage Areas	No	SMC 19.12
3.A. Other Adopted Area Specific Drainage Requirements	No	
4. Other Drainage Related Regulations and Guidelines	No	
4.A. Grading Code Soil Amendment Standard	Yes	

4.B. Clearing and Grading Seasonal Limitations	Yes	
4.C. Landscape Management Plan Guidelines	Yes	
4.D. Shared Facility Maintenance Guidance	Yes	
5. Wetland Hydrology Protection Guidelines	Yes	
6. Hydrologic/Hydraulic Design Methods	Yes	
6.A. EPA Infiltration Rate Test	Yes	
6.B. Pond Geometry Equations	Yes	
7. Engineering Plan Support	Yes	
7.A. King County Map Symbols	Yes	
7.B. Standard Plan Notes and Example Construction Sequence	Yes	
7.C. Stormfilter Access and Cartridge Configuration	Yes	
8.0 Forms and Worksheets	Yes	
8.A. Technical Information Report (TIR) Worksheet	Yes	
8.B. Offsite Analysis Drainage System Table	Yes	
8.C. Water Quality Facility Sizing Worksheets	Yes	
8.D. Flow Control and Water Quality Facility Summary Sheet and Sketch	Yes	
8.E. CSWPPP Worksheet Forms	Yes	
8.F. Adjustment Application and Process Guidelines	Yes	
8.G. Dedication and Indemnification Clause Final Reporting	No	
8.H. Bond Quantities Worksheet	Yes	
8.I. Maintenance and Defect Agreement	No	Case by case
8.J. Drainage Facility Covenant	No	Case by case
8.K. Drainage Release Covenant	No	Case by case
8.L. Drainage Easement	No	Case by case
8.M. Flow Control BMP Covenant	No	Case by case
8.N. Impervious Surface Limit Covenant	No	Case by case
8.O. Clearing Limit Covenant	No	Case by case
8.P. River Protection Easement	No	Case by case
8.Q. Leachable Metals Covenant	No	Case by case
9. Interim Changes to Requirements	No	Case by case
10. King County Identified Water Quality Problem	No	

VII. Mapping

City of Snoqualmie equivalents to the maps referenced in the KCSWDM are included in this section.

Table 4: City of Snoqualmie Map Equivalents Referenced by KCSWDM

2009 King County Surface Water Design Manual Maps	City of Snoqualmie Map Equivalent
Flow Control Applications Map	Under development, see Public Works Director for guidance

Landslide Hazard Drainage Areas Map	None available
Water Quality Applications Map	None available
Flood Hazard area as defined in KCC 21A.07	See FEMA FIRM Maps
Erosion Hazard Area	None available