



**CITY OF SAMMAMISH
PLANNING COMMISSION, REGULAR MEETING**

October 06, 2016 6:30 – 8:30pm

SAMMAMISH CITY HALL 801 228th Ave. SE

AGENDA

	<u>Approx Start Time</u>
CALL TO ORDER	6:30pm
ROLL CALL	6:31pm
APPROVAL OF THE AGENDA	6:32pm
APPROVAL OF THE MINUTES: No minutes submitted for approval.	6:33pm
PUBLIC COMMENT – Non Agenda (3 minutes per person / 5 if representing an organization)	6:35pm
<u>OLD BUSINESS</u>	6:45pm
<u>Surface Water Design Manual Update</u>	
➤ Public Hearing	
➤ Deliberation	
<u>OLD BUSINESS</u>	7:30pm
<u>Low Impact Development (LID) Code Amendments</u>	
➤ Work Session	
PUBLIC COMMENT – Agenda (7 minutes per person)	8:15pm
ADJOURN	8:30pm

Note: This is an opportunity for the public to address the Planning Commission. For non-agenda items, three (3) minutes are granted per person, or five (5) minutes if representing the official position of a recognized community organization. Seven (7) minutes are granted per person for agenda items.

If you are submitting written material, please supply 8 copies (7 for Planning Commission; 1 for the record). If you would like to show a video or PowerPoint, it must be submitted or emailed by 5pm the day of the meeting to Tammy Mueller at tmueller@sammamish.us. Please be aware that Planning Commission meetings are videotaped and available to the public.

The City of Sammamish Planning Commission is appointed and is the advisory board to the City Council on the preparation and amendment of land use plans and implementing ordinances such as zoning. Planning Commissioners are selected to represent all areas of the City and as many "walks of life" as possible. The actions of the Planning Commission are not final decisions; they are in the form of recommendations to City Council who must ultimately make the final decision.

THE COMMISSION MAY ADD OR TAKE ACTION ON ITEMS NOT LISTED ON THIS AGENDA.

Planning Commission meetings are wheelchair accessible. American Sign Language (ASL) interpretation is available upon request. Please phone (425) 295-0500 at least 48 hours in advance. Assisted Listening Devices are also available upon request.



Memorandum

Date: October 6, 2016

To: Planning Commission

From: Tawni Dalziel, P.E,
Sr. Stormwater Program Manager

Re: Update of Surface Water Design Manual to meet 2013-2018 NPDES
Stormwater Permit Requirements

Overview

The Public Works Department intends to provide assistance in the Planning Commission deliberation for the update to the Surface Water Design Manual. On July 7, 2016, we presented an overview of the options to meet the NPDES Permit requirement for the Surface Water Design Manual adoption. The Planning Commission indicated to staff that adopting the *2016 King County Surface Water Design Manual* (KCSWDM) is appropriate to meet Permit requirements. On September 1, 2016, staff presented the draft *2016 Sammamish Addendum* to the *2016 KCSWDM* and amendments to Title 13. On September 15, 2016, staff discussed with the Planning Commission significant comments from the public, the stakeholder group, and the City Council. The Public Hearing was opened on this date. Additional public comment is expected during the October 6, 2016 Planning Commission meeting.

Needed Direction

The goal of the October 6, 2016 meeting is to close the Public Hearing and conduct deliberation on the updates to the Surface Water Design Manual.

Please feel free to contact me with any questions you may have. I can be reached at 425-295-0567 or at tdalziel@sammamish.us.

CITY OF SAMMAMISH SURFACE WATER DESIGN MANUAL ADDENDUM

PREFACE – How to Use this Document

General Introduction

The City of Sammamish has adopted the 2016 King County Surface Water Design Manual (2016 KCSWDM) in order to be in compliance with the Washington State Department of Ecology Phase II Municipal Stormwater permit. This Addendum to the 2016 KCSWDM defines how the requirements of the KCSWDM are to be implemented within the City of Sammamish. The Addendum specifies all changes, additions, and deletions to the 2016 KCSWDM to make it appropriate for use within the City of Sammamish. The 2016 KCSWDM along with this Addendum define the drainage requirements for development and redevelopment projects within the City.

Purpose of and Need for the Addendum

The City has been issued a Phase II Municipal Stormwater Permit (Permit) effective August 1, 2013. The Permit was issued under the National Pollutant Discharge System (NPDES), as administered by the Washington State Department of Ecology (Ecology) within Washington State. The Permit specifies minimum requirements and technical thresholds for stormwater mitigation needed for construction sites, new developments, and redevelopments.

The City of Sammamish has previously relied upon the earlier versions of the KCSWDM to guide stormwater standards within the City. King County recently updated its manual to be consistent with the 2012 Ecology manual. Ecology has deemed the 2016 KCSWDM and associated requirements to be equivalent to the 2012 Ecology Manual. By adopting the 2016 KCSWDM and addressing the associated requirements, the City will be in compliance with the NPDES requirements that rely on the Ecology manual or approved equivalent.

The purpose of this Addendum is to tailor the 2016 KCSWDM to meet the unique conditions within the City, and be consistent with the City's codes, organization and processes. No substantive changes have been made to the 2016 KCSWDM in order to maintain equivalency in requirements and the level of protection provided by the 2016 KCSWDM.

Relationship of the KCSWDM and the City of Sammamish Development Code to Low Impact Development (LID)

The City of Sammamish recently adopted development code amendments that encourage Low Impact Development (LID) principles to reduce impervious surfaces, retain native vegetation, and reduce runoff from developed sites. The 2016 KCSWDM requires on site flow control best management practices (BMPs) to mitigate the impacts of storm and surface water runoff generated by new impervious surfaces, new pervious surfaces, existing impervious surfaces, and replaced impervious surfaces. Flow control BMPs are methods to disperse, infiltrate, or otherwise reduce or prevent development related increases in runoff at or near the sources of those increases. . The 2016 KCSWDM provides specific design guidance for implementation of the LID measures encouraged in the City's development code. As a result, the 2016 KCSWDM and the City of Sammamish development code complement each other.

How to Use this Document

This Addendum shall be used in coordination with the 2016 KCSWDM for the following:

- To translate specific wording or reference from King County to the City.
- To cross-reference City ordinances and City maps in lieu of King County ordinances and maps.
- To provide a linkage or reference to other City requirements such as more restrictive requirements outlined in basin plans and the City's Critical Areas Ordinances.
- To provide exceptions and additions to the KCSWDM.

The 2016 KCSWDM shall be used in its entirety except as directed in this Addendum. Exceptions and additions to the 2016 KCSWDM are organized and referenced by chapter and section in the same manner as the 2016 KCSWDM. Some global changes are provided in this preface, which shall be applied throughout the entire 2016 KCSWDM. The user shall override the maps and references to other documents as indicated within this Addendum.

Addendum Organization

The information presented in this Addendum is organized as follows:

- **Preface – How to use this Document:** This preface provides instructions for using the City of Sammamish's Addendum to the 2016 KCSWDM. It also defines terms in the 2016 KCSWDM that are used differently for the City of Sammamish; City departments that are equivalent to county departments referred to in the 2016 KCSWDM; and designations from the 2016 KCSWDM that do not apply to proposals in the City of Sammamish.
- **Chapter 1 – Drainage Review and Requirements:** The City of Sammamish has made several changes to Chapter 1 of the 2016 KCSWDM. This Addendum provides replacement and supplemental text for specific sections of Chapter 1. Apart from these changes, the King County version of Chapter 1 applies to proposals in the City of Sammamish.
- **Chapter 2 – Drainage Plan Submittal:** The City of Sammamish has made minor changes to Chapter 2 of the 2016 KCSWDM. Section 2.4.2 has been modified to include an additional

requirement for the inspection of installed LID BMPs. The King County version of Chapter 2 applies to proposals in the City of Sammamish, except that the applicant shall refer to the City of Sammamish documents for technical submittal requirements, project plan requirements, and as-built requirements.

- **Chapter 3 – Hydrologic Analysis and Design:** The City of Sammamish has made no changes to Chapter 3 of the 2016 KCSWDM. The King County version of Chapter 3 applies to proposals in the City of Sammamish.
- **Chapter 4 – Conveyance System Analysis and Design:** The City of Sammamish has made minor changes to Chapter 4 of the 2016 KCSWDM. More stringent requirements for allowable pipe materials, deflection, maximum distance between structures, and other requirements are listed in the City of Sammamish Addendum. Apart from these changes, the King County version of Chapter 4 applies to proposals in the City of Sammamish.
- **Chapter 5 – Flow Control Design:** The City of Sammamish has made very minor changes to Chapter 5 of the 2016 KCSWDM. This addendum to Chapter 5 provides replacement text for the sections that are changed. Design criteria for ponds have been added/modified to address pond aesthetics. Apart from these changes, the King County version of Chapter 5 applies to proposals in the City of Sammamish.

The City of Sammamish has adopted a Low Impact Development Ordinance that encourages the use of LID site planning techniques within the City. LID site planning techniques can help to reduce the size of flow control facilities required in the 2016 KCSWDM.

- **Chapter 6 – Water Quality Design:** The City of Sammamish has made minor changes to Chapter 6 of the 2016 KCSWDM. This addendum to Chapter 6 provides replacement text for the sections that are changed. Apart from these changes, the King County version of Chapter 6 applies to proposals in the City of Sammamish.

The City of Sammamish amends Chapter 6 of the 2016 KCSWDM to allow for bioretention to be utilized as a pretreatment facility.

The City of Sammamish requires higher levels of phosphorus removal for areas that drain to Beaver Lake and Pine Lake. The 2016 KCSWDM Addendum identifies the procedures to follow and the areas that are involved in higher levels of phosphorus removals.

- **Definitions:** The City of Sammamish has made changes to the definitions section of the 2016 KCSWDM. This Addendum to the Definitions section provides replacement text for the definitions that are changed. Apart from these changes, the King County version of the Definitions Section applies to proposals in the City of Sammamish.
- **Appendices:** Appendices A, B, C, and D apply to proposals in the City of Sammamish.
- **References:** King County Reference sections 2, 3, 4B, 7C, 9, and 10 do not apply to the City of Sammamish. King County Reference sections 7B, 8F, 8G, 8I, 8J, 8K, 8L, 8M, 8N, 8O, 8P, 8Q have been replaced by a City of Sammamish reference. The King County version of

Reference section 1, 4A, 4C, 4D, 5, 6, 7A and 8A through 8E, 8I, 11 apply to proposals in the City of Sammamish.

City Equivalents for County Agencies

Unless the context requires otherwise, any reference to “County”, “King County”, or county department, shall refer to the City of Sammamish and any reference to county staff shall refer to the City Manager or designee, unless specifically referring to the Department of Community Development (DCD).

City Equivalents for County Ordinances

For proposals in the City of Sammamish, all reference in the KCSWDM to the following ordinances or municipal codes shall be replaced by reference as indicated in the following table.

King County Code (KCC)	Description	Sammamish Municipal Code (SMC)	Description
KCC 16.82	Clearing and Grading	SMC 16.15	Clearing and Grading
KCC 21A.14	Development Standards Design Requirements	SMC 21A.25	Development Standards – Density and Dimensions
KCC 21A.24	Critical Areas	SMC 21A.50	Development Code – Environmentally Critical Areas
KCC 21A.06	Technical Terms and Land Use Definitions	SMC 21A.15	Definitions
KCC 20.14	Basin Plans	SMC 24.20	Interim Comprehensive Plan – Basin Plans
KCC 25	Shoreline Management	SMC 25	Shoreline Management
KCC 9	Surface Water Management	SMC 13 SMC 15.10	Surface Water Management Flood Damage Prevention

In general, references to the King County Critical Areas Ordinance (KCC 21A) are to be replaced by reference to the Sammamish Municipal Code (SMC 21A), particularly, chapter SMC 21A.50, Environmentally Critical Areas. Definitions for critical areas terminology may be found in SMC 21A.15. The following table provides additional detail on critical areas.

King County Code (KCC)	Description	Sammamish Municipal Code (SMC)	Description
Title 2	Administration	20	Administrative Procedures, Environmental Policy
21A.24.230	Flood hazard area	21A.50.230 15.10	Frequently flooded areas Flood Damage prevention
21A.24.311 – 21A.24.314	Critical Aquifer recharge area	21A.50.280 21A.15.253	Critical aquifer recharge areas – Development standards and permitted alterations Definition
21A.24.220	Erosion hazard area	21A.50.220 21A.50.225 21A.15.415 21A.15.417	Erosion hazard areas – Development standards and permitted alterations. Erosion hazards near sensitive water bodies – Special district overlay. Definition Erosion hazard areas Definition Erosion hazards near sensitive water body overlay
21A.24.280	Landslide hazard area / Landslide hazard drainage area	21A.50.260 21A.15.680	Landslide hazard area – Development standards and permitted alterations Definition
21A.24.290	Seismic hazard areas	21A.50.270 21A.15.1045	Seismic hazard area – Development standards and permitted alterations Definition
21A.24.310	Steep slope hazard areas	21A.15.1230 21A.15.1230	Definition. Steep slope hazard areas now included as part of landslide hazard areas. Definition

King County Code (KCC)	Description	Sammamish Municipal Code (SMC)	Description
21A.24.318 – 21A.24.345	Wetlands areas	21A.50.290 – 21A.15.1415	Wetlands - Development standards and permitted alterations Definition
21A.24.355 – 21A.24.381	Aquatic Areas	21A.50.330 – 21A.50.350	Streams
21A.24.382 - 21A.24.388	Wildlife habitat conservation areas	21A.15.468 21A.50	Wildlife habitat conservation areas

City Equivalents for County Maps

For proposals in the City of Sammamish, all reference in the 2016 KCSWDM to the following maps shall be replaced by reference as indicated in the following table.

King County Map or Designation	City of Sammamish Map*
Flow Control Applications Map	Flow Control Applications Map. Map included in Sammamish Addendum
Landslide Hazard Drainage Areas Map	Landslide Hazard Drainage Area Map. Map included in Sammamish Addendum
Water Quality Applications Map	Water Quality Applications Map. Map included in Sammamish Addendum
Erosion Hazard Near Sensitive Water Bodies Map	Erosion Hazard Near Sensitive Water Bodies Map Map included in Sammamish Addendum
Flood Hazard Area as defined in KCC 21A.06	Environmentally Sensitive Areas Map Frequently flooded areas include all areas of special flood hazards within the jurisdiction of the City of Sammamish as defined in SMC 21A.15.532 and as shown on the Environmentally Sensitive Areas Map.
Erosion Hazard Area	Definition provided in SMC 21A.15.415
Landslide Hazard Area	Definition provided in SMC 21A.15.680
Critical Aquifer Recharge Area*	Definition provided in SMC 21A.5015.280253

City Equivalents for County Plans or Studies

In general, references to county-approved plans or studies in the 2016 KCSWDM are to be replaced by reference to appropriate City-approved plans or studies. If comparable City-approved plans or studies do not exist, then references to County-approved plans or studies shall be retained for proposals in the City of Sammamish.

County Designations that do not Apply in the City

The following designations are used in the 2016 KCSWDM but are not currently used in the City of Sammamish; any reference in the 2016 KCSWDM to the existence of areas with these designation or thresholds or requirements for such areas is to be disregarded for proposals in the City of Sammamish:

- **Agricultural Project**
- **Coal Mine Hazard Area**
- **Forest Production Zone Area**
- **Master Drainage Plans (MDPs)**
- **Rural Residential Development**
- **Sensitive Area Folio** - refer to City of Sammamish Sensitive Areas Maps at <http://www.sammamish.us/departments/publicworks/Maps.aspx#>
- **Stormwater Compliance Plans (SWCPs)**
- **Urban Planned Development**
- **Zoning Classifications:** The 2016 KCSWDM references to Agricultural (A) Zoning, Forest (F) Zoning, or Rural (R) Zoning are intended for areas outside of the Urban Growth Boundary; therefore, the City of Sammamish contains no equivalent zoning. Project proponents should refer to City zoning maps to determine which zoning classifications apply to their projects.

CHAPTER 1 – Drainage Review and Requirements

The City of Sammamish has made several minor changes to Chapter 1 of the 2016 KCSWDM. This chapter provides replacement and supplemental text for specific sections of Chapter 1. Apart from these changes, the King County version of Chapter 1 applies for proposals in the City of Sammamish. The City’s changes to the County document are as follows:

- **Key Terms and Definitions (page 1-1 of the 2016 KCSWDM)** — Replace all references to KCC 21A with SMC 21A. In addition, the following changes to specific terms apply:

Term (page)	Action
Critical aquifer recharge area (p 1-2)	<p><i>Replace as follows per SMC 21A.15.253:</i></p> <p>“Critical aquifer recharge areas” means those areas in the City of Sammamish with a critical recharging effect on aquifers used for potable water as defined by WAC 365-190-030(2). CARAs have prevailing geologic conditions associated with infiltration rates that create a high potential for contamination of groundwater resources or contribute significantly to the replenishment of groundwater. CARAs shall be classified based on the following criteria:</p> <p>(1) Class 1 CARAs include those areas located within the mapped one- or five-year capture zone of a wellhead protection area.</p> <p>(2) Class 2 CARAs include those areas located within the mapped 10-year capture zone of a wellhead protection area.</p> <p>(3) Class 3 CARAs include those areas outside wellhead protection areas that are identified as high aquifer recharge potential areas based on characteristics of surficial geology and soil types. (Ord. O2013-350 § 1 (Att. A); Ord. O2005-193 § 2)</p> <p>Critical aquifer recharge areas are regulated in SMC 21A.50.280 Critical aquifer recharge areas – Development standards.</p> <p>Also mapped. See City’s website</p>
Critical Drainage Area (p 1-2)	<p><i>Replace as follows per SMC 21A.15.255:</i></p> <p>“Critical drainage area” means an area that has been formally determined by the King County Surface Water Management Department to require more restrictive regulation than countywide standards afford in order to mitigate severe flooding, drainage, erosion, or sedimentation problems that result from the cumulative impacts of development and urbanization. (Ord.O2003-132 § 10).</p> <p>Critical drainage areas are defined in SMC 21A.15.255 and are regulated in SMC 21A.50.355 Lake management areas – Special District overlay.</p>
Erosion hazard area (p 1-3)	<p><i>Replace as follows per SMC 21A.15.415:</i></p> <p>“Erosion hazard area” is the critical area designation that is applied to areas underlain by soils that are subject to severe erosion when disturbed. See the “Definitions” section for more details.</p> <p>Erosion hazard areas are regulated in SMC 21A.50.220 Erosion hazard areas – Development standards and permitted alterations.</p>

Term (page)	Action
Flood Hazard Area (p 1-3)	<i>Replace as follows per SMC 15 Flood Damage Prevention:</i> SMC 15 shall be the basis for establishing the areas of special flood hazard.
Landslide Hazard Area (p 1-5)	<i>Replace as follows per SMC 21A 15.680:</i> “Landslide hazard area” is the critical designation that is applied to areas potentially subject to risk of mass movement due to a combination of geologic, topographic, and hydrologic factors. See the “Definitions” section for more details. Landslide hazard areas are regulated in SMC 21A.50.260 Landslide hazard areas – Development standards and permitted alterations.
Landslide Hazard Drainage Area (p 1-5)	<i>Replace as follows:</i> “Landslide hazard drainage area” are areas where overland flows pose a significant threat to health and safety because of their close proximity to a landslide hazard area as defined by SMC 21A.15.680. Mapped Landslide hazard drainage areas are approximate. Public Works may determine that areas not mapped as Landslide hazard drainage areas may meet this definition.

- **Section 1.1.1 PROJECTS REQUIRING DRAINAGE REVIEW (page 1-12 of the 2016 KCSWDM)** — Replace the “King County Permits and Approvals” table with the following table and adding new numbers 7 and 8:

7. Projects located in landslide hazard drainage areas that will result in 500 square feet or more of new impervious surface.
8. Projects as listed in SMC 13.20.020.

City of Sammamish Permits and Approvals
Construction Permits Right of Way Permit Site Development Permits Conditional Use Permits Clear and Grade Permit Shoreline Management Substantial Development Permits Short Subdivision Developments (Short Plat) Subdivision Developments (Plats) Commercial Site Development Permit (CSDP) Unified Zone Development Permit (UZDP) Plat Alterations
Notes: See SMC 20.05 – PROCEDURES FOR LAND USE PERMIT APPLICATIONS, PUBLIC NOTICE, HEARINGS, AND APPEALS for additional information.

- **Figure 1.1.2.A FLOW CHART FOR DETERMINING TYPE OF DRAINAGE REVIEW REQUIRED (page 1-14 of the 2016 KCSWDM)** — Amending Figure 1.1.2.A such that the first box reads:

Is the project a **single family residential** or **agricultural project** that results in $\geq 2,000$ sf of **new plus replaced impervious surface** or $\geq 7,000$ sf of **land disturbing activity**, results in less than 5,000 square

feet of new plus replaced pollution generating impervious surface, results in less than $\frac{3}{4}$ acre of pollution generating pervious surfaces, or is a project that that results in 500 square feet or more of new impervious surface in a landslide hazard drainage area AND meets one of the following criteria:

- **Table 1.1.2.A REQUIREMENTS APPLIED UNDER EACH DRAINAGE REVIEW TYPE (page 1-15 of the 2016 KCSWDM)** — Amending Table 1.1.2.A such that the first box reads:

Single family residential projects and **agricultural projects** that results in $\geq 2,000$ sf of **new plus replaced impervious surface** or $\geq 7,000$ sf of **land disturbing activity** but do not exceed the new plus replaced PGIS, new PGPS, and **new pervious surface** thresholds specified in Sec. 1.1.2.1; OR is an agricultural project that qualifies for the “Impervious Surface Percentage Exemption For Agricultural Projects”; OR is a project that that results in 500 square feet or more of new impervious surface in a landslide hazard drainage area.

- **Section 1.1.2.1 SIMPLIFIED DRAINAGE REVIEW (page 1-16 of the 2016 KCSWDM)** — Amending paragraph four under the title “Threshold” such that it reads as the following:

Simplified Drainage Review is required for any *single family residential project* or *agricultural project* that will result in 2,000 square feet or more of *new impervious surface, replaced impervious surface, or new plus replaced impervious surface*, or 7,000 square feet or more of *land disturbing activity*, OR is a project that results in 500 square feet or more of new impervious surface in a landslide hazard drainage area, AND meets one of the following criteria:

- **Section 1.2 CORE REQUIREMENTS, Downstream Water Quality Problems Requiring Special Attention (page 1-30 of the 2016 KCSWDM)** — The following supplemental information is added to this section:

The 2016 KCSWDM recognizes water quality problems requiring special mitigation measures to protect receiving waters. A water quality problem is defined as a problem documented by the state to exceed the state’s numeric water quality standard. The 2016 KCSWDM references Category 2, 4, and 5 water quality problems as requiring special attention. Within the City of Sammamish, the following water quality problems are currently listed by the Department of Ecology, based on the 2015 Water Quality Assessment, approved by the U.S. Environmental Protection Agency on July 22, 2016. The latest designated impaired waterbodies can be viewed at <http://www.ecy.wa.gov/programs/wq/303d/currentassessmt.html>.

Impaired Water Body	Parameter	Category*
Lake Sammamish	Dissolved oxygen, polychlorinated biphenyls (PCBs), bioassessment	5
Lake Sammamish	Total phosphorus, 2,3,7,8-TCDD TEQ, sediment bioassay	2
Pine Lake Creek	Dissolved oxygen, temperature, bacteria	5
Pine Lake Creek	Mercury	2
Pine Lake	Bacteria	2
Laughing Jacobs Creek	Bacteria, bioassessment, temperature, dissolved oxygen	5
Evans Creek	Temperature	4a
Eden Creek	Bioassessment, temperature, bacteria	5
Eden Creek	Copper, dissolved oxygen	2
Ebright Creek	Bioassessment	5
Ebright Creek	Dissolved oxygen, mercury	2
Beaver Lake No. 2	Total phosphorus	5

* Definition of Categories for impaired waterbodies:

- Category 2: Waters of concern, some evidence of water quality problem.
- Category 4 (a and b): Polluted waters with a plan (TMDL) or pollution control program in place to address the problem.
- Category 5: Polluted waters, a TMDL plan is required.

Projects that discharge to the impaired waterbodies identified above may be required to implement special treatment to address the water quality problem in accordance with the requirements outlined in Section 1.2.2.3, Water Quality Problem Impact Mitigation.

Studies and lake management plans have determined that Beaver and Pine Lakes within the City of Sammamish require a higher level of total phosphorus reduction than that currently required by the 2016 KCSWDM. For projects that drain to Beaver Lake or Pine Lake, the project proponent shall contact the City for specific requirements necessary to attain the desired level of total phosphorus reduction. Sensitive Lake Water Quality Treatment and 80% total phosphorus removal using All Known Available and Reasonable Technology (AKART) shall be provided.

The federal Clean Water Act requires that a Total Maximum Daily Load (TMDL) cleanup plan be developed for each of the waterbodies on the state’s list of impaired waterbodies, known as the “303(d) list.” The TMDL study identifies pollution problems in the watershed, and specifies how much pollution needs to be reduced or eliminated to achieve clean water. Ecology has prepared TMDLs for fecal coliform bacteria, temperature and dissolved oxygen for the Bear-Evans watershed. Strategies identified in the TMDLs to address the water quality impairment in the Bear-Evans watershed are listed below. Development or redevelopment projects within the City of Sammamish that ultimately drain to Evans Creek should incorporate these actions as appropriate.

TMDL – Implementation Strategy for Fecal Coliform Bacteria in the Evans Creek Watershed

- Implement structural (as appropriate) and non-structural stormwater source control best management practices (BMPs).
- Restore riparian vegetation to help filter out stormwater pollutants.

- Properly manage domestic animal and livestock wastes.

TMDL – Implementation Strategy for Temperature and Dissolved Oxygen in the Evans Creek watershed

- Plant new and preserve existing trees in the riparian zone along lengths of the creeks.
- Investigate opportunities to enhance groundwater recharge.
- Restore and protect wetlands in areas that will benefit the stream and enhance habitat.
- Consider a water management strategy that recognizes the benefits of maintaining summer baseflows.
- Minimize human-caused sources of nutrients in the watershed.

- **Section 1.2.3.1 AREA-SPECIFIC FLOW CONTROL FACILITY REQUIREMENT**

- Add new sections following IMPERVIOUS SURFACE PERCENTAGE EXEMPTION FOR AGRICULTURAL PROJECTS (page 1-42 of the 2016 KCSWDM)

- **MAINTENANCE EXEMPTIONS**

The following pavement maintenance practices are exempt:

- a) Pothole and square cut patching
- b) Overlaying existing asphalt or concrete pavement with asphalt or concrete without expanding the area of coverage (overlaying permeable or pervious pavements with traditional (non-permeable) asphalt or pavement is not considered pavement maintenance)
- c) Shoulder grading
- d) Reshaping/regrading drainage systems
- e) Crack Sealing
- f) Resurfacing with in-kind material without expanding the road prism
- g) Pavement preservation activities that do not expand the road prism
- h) Vegetation maintenance
- i) Catch basin and pipe maintenance
- j) Regrading/reshaping/resurfacing of existing ramps or sidewalks to meet ADA requirements
- k) Underground utility projects that replace the ground surface with in-kind material or materials with similar runoff characteristics.
- l) Projects that do not impact the base course are exempt and are not considered “replaced impervious”.

- **MAINTENANCE NON-EXEMPTIONS**

The following pavement maintenance practices are not exempt.

- a) The practices subject to the Core Requirements that are triggered when the thresholds are met or exceeded. The extent to which the manual applies is explained for each circumstance.

- b) Removing and replacing a paved surface and impacting the base course. If impervious surfaces are not expanded, Core Requirements #1, 5, 6, and 9 apply.

- **Section 1.2.8 CORE REQUIREMENT #8: WATER QUALITY**

- Add the following new maintenance exemptions and non-exemptions under the section EXEMPTIONS FROM CORE REQUIREMENT #8 (page 1-69 of the 2016 KCSWDM)

- 4. MAINTENANCE EXEMPTIONS

The following pavement maintenance practices are exempt:

- a) Pothole and square cut patching
- b) Overlaying existing asphalt or concrete pavement with asphalt or concrete without expanding the area of coverage (overlaying permeable or pervious pavements with traditional (non-permeable) asphalt or pavement is not considered pavement maintenance)
- c) Shoulder grading
- d) Reshaping/regrading drainage systems
- e) Crack Sealing
- f) Resurfacing with in-kind material without expanding the road prism
- g) Pavement preservation activities that do not expand the road prism
- h) Vegetation maintenance
- i) Catch basin and pipe maintenance
- j) Regrading/reshaping/resurfacing of existing ramps or sidewalks to meet ADA requirements
- k) Underground utility projects that replace the ground surface with in-kind material or materials with similar runoff characteristics.
- l) Projects that do not impact the base course are exempt and are not considered “replaced impervious”.

- 5. MAINTENANCE NON-EXEMPTIONS

The following pavement maintenance practices are not exempt.

- a) The practices subject to the Core Requirements that are triggered when the thresholds are met or exceeded. The extent to which the manual applies is explained for each circumstance.
- b) Removing and replacing a paved surface and impacting the base course. If impervious surfaces are not expanded, Core Requirements #1, 5, 6, and 9 apply.

- **Section 1.3.1 SPECIAL REQUIREMENT #1: OTHER ADOPTED AREA- SPECIFIC REQUIREMENTS (page 1-99 of the 2016 KCSWDM)** — Replace the table in Section 1.3.1 on page 1-100 with the following:

Threshold	Requirement
If a proposed project is in a basin plan or lake management plan...	THEN the proposed project shall comply as codified by the City of Sammamish Municipal Code.

CHAPTER 2 – Drainage Plan Submittal

The City of Sammamish has added supplemental information and made minor changes to Chapter 2 of the 2016 KCSWDM, as described below. Apart from this information, project proponents should refer to the county document for guidance on drainage plan submittal. All submittal reviews shall be conducted by the Department of Community Development (DCD).

Supplemental Information

As part of our Surface Water Design Manual the applicant shall refer to the following documents for Project Plans and As-BUILTS.

1. Site Development Permit – Technical Submittal Requirements This document is provided on the city website.
2. The applicant shall use the *City of Sammamish Standard Development Project Close-out (M/D Period) PW Administration Items Requirements/Checklist* form (available from the City of Sammamish Department of Community Development as a guide to assembling a *First Submittal Intake* package).

Section 2.4.2 FINAL CORRECTED PLAN SUBMITTAL (page 2-39 of the 2016 KCSWDM) — Replace Section 2.4.2 in entirety as follows:

The applicant shall use the *City of Sammamish Standard Development Project Close-out (M/D Period) PW Administration Items Requirements/Checklist* form (available from DCD) as a guide to assembling a *Second Submittal Intake* package for project closeout.

During the course of construction, special inspections are required for LID and Flow Control BMPs. Once construction is completed, a qualified professional shall provide a signed letter verifying that the BMPs have been inspected, installed correctly, and are functioning as designed. Any as-built deviations from the design shall be explained clearly in the letter.

CHAPTER 3 – Hydrologic Analysis and Design

The City of Sammamish has made no changes to Chapter 3 of the 2016 KCSWDM. Project proponents should refer to the county document for guidance on hydrologic analysis and design.

CHAPTER 4 – Conveyance System Analysis and Design

The City of Sammamish has made minor changes to Chapter 4 of the 2016 KCSWDM. The following stricter requirements apply as applicable in this chapter:

1. Allowed Pipe Types:

Corrugated polyethylene (CPE) pipe, Polypropylene (PP) pipe, and Polyvinyl chloride (PVC) pipe are deleted and shall be replaced with the following allowed pipe and criteria:

WSDOT Section 9-05.24 Polypropylene Culvert Pipe, Polypropylene Storm Sewer Pipe, and Polypropylene Sanitary Sewer Pipe

All joints for polypropylene pipe shall be made with a bell/bell or bell and spigot coupling and shall conform to ASTM D 3212 using elastomeric gaskets conforming to ASTM F 477. All gaskets shall be factory installed on the pipe in accordance with the manufacturer's recommendations.

Qualification for each manufacturer of polypropylene storm sewer pipe requires joint system conformance to ASTM D 3212 using elastomeric gaskets conforming to ASTM F 477 and a formal quality control plan for each plant proposed for consideration.

A Manufacturer's Certificate of Compliance shall be required and shall accompany the materials delivered to the project. The certificate shall clearly identify production lots for all materials represented. The Contracting Agency may conduct verification tests of pipe stiffness or other properties it deems appropriate.

WSDOT Section 9-05.24(1) Polypropylene Culvert Pipe and Storm Sewer Pipe

Polypropylene culvert and storm sewer pipe shall conform to the following requirements:

- For dual wall pipe sizes up to 30 inches: ASTM F2736.
- For triple wall pipe sizes from 30 to 60 inches: ASTM F2764.
- For dual wall profile pipe sizes 36 to 60 inches: AASHTO MP 21, Type S or Type D.
- Fittings shall be factory welded, injection molded or PVC.

(Corrugated polyethylene drainage pipe CPEP pipe will not be allowed as it does not meet minimum standards).

2. Acceptable Pipe Sizes:

12-inch is the minimum diameter pipe to be maintained by the City.

3. Storm Drain Markers:

Storm drain markers are required at every catch basin. Markers are to be placed in locations

approved by Public Works.

4. Pipe Slope:

Minimum pipe slope shall be 0.5%

5. Storm Testing:

All storm system shall be jetted, cleaned, and televised prior to final acceptance into City maintenance.

6. Structure Locations and Appurtenances:

Maximum pipe run between structures shall 300-ft. For maintenance of structures, a truck turnaround shall be provided. Maximum distance between maintenance vehicle access and drainage structure shall be 150-ft. Structures located in non-pavement areas shall include 2-ft wide asphalt ring around structure lid.

7. Pipe Deflections:

Once backfill is complete, the line and grade at pipe flow line leaving standing water greater than ½-inch in depth shall not be accepted and must be repaired prior to acceptance by the City.

8. Pipe Anchors:

Pipe anchor shall include 1" PVC pipe to be installed through the concrete anchor below the pipe to allow passing of ground water.

9. Drainage Structures:

The most updated WSDOT Standard Plans Section B shall be used to determine acceptable design standards.

10. Drainage Structures Ladders:

Ladders required within drainage structures shall not block inlet or outlet pipes and must be accessible from structure opening. Refer to WSDOT Standard Plans for details and specifications.

11. Submerged and Surcharged Pipe:

The 100-year design elevation of downstream stormwater facilities such as stormwater ponds or vaults shall be at or below all pipe inverts. Exception to this standard is the pipe from the first catch basin just upstream of the stormwater facility may be submerged to allow pipe inlet to facility to be submerged.

CHAPTER 5 – Flow Control Design

The City of Sammamish has added supplemental information and made several minor changes to Chapter 5 of the 2016 KCSWDM, as described below. Apart from this information, project proponents should refer to the county document for guidance on flow control design.

Supplemental Information

The City of Sammamish has identified specific areas where the Conservation Flow Control (Level 2) and Flood Problem Flow Control (Level 3) flow control standards described in the 2016 KCSWDM are to be applied within the City. Locations are shown on the City of Sammamish Flow Control Applications map accompanying this Addendum.

The King County Basic Flow Control (Level 1) standard does not apply within the City. There may, however, be circumstances where the Basic Flow Control standard can be applied. The 2016 KCSWDM defines the Basic Flow Control Standard as being appropriate for areas that drain to a closed conveyance system that discharges to a waterbody designated as a major receiving water. Lake Sammamish is designated a major receiving water. Developments that drain to closed drainage systems discharging directly to Lake Sammamish could, by definition, be eligible for the Basic Flow Control Standard. This would be the case where runoff from a new or redevelopment project area discharges to an existing downstream drainage system where downstream capacity issues are likely with an increase in runoff to the system.

Changes to 2016 KCSWDM

- **Section 5.1.1.1 DESIGN CRITERIA, Side Slopes (page 5-4 of the 2016 KCSWDM) —** Amend criteria 2, 3, and 4 to read as follows:

Intent. The design of stormwater ponds and vaults are intended to be attractive site amenities. Open ponds are intended to appear like natural ponds. The physical appearance of vault walls are also intended to be minimized. To achieve the design of ponds and vaults that are more aesthetically compatible with adjacent land uses, standards have been established related to the slope of perimeter side slopes, curvilinear design, and the introduction of active and passive recreational elements. The Director may approve designs that do not meet the numeric standards below, provided the intent of the proposed design is equal to or better than the design that would accrue through strict adherence to these standards (refer to back pages of Sammamish Addendum for illustrations of intent).

- 1) Up to 25% of the pond perimeter interior and exterior side slopes may be steeper than 2H:1V, if analyzed by a geotechnical engineer for stability and approved by the City.
- 2) Pond may contain vertical interior and exterior retaining walls, provided:
 - (a) they are constructed of reinforced concrete per Section 5.1.3 (p. 5-22) and the visible surface has an attractive pattern/finish;
 - (b) a safety handrail is provided meeting SMC Chapter 16 along the top of the wall, is

- not a cyclone or chain link fence, and it is clearly recorded and documented that maintenance and repair is not the responsibility of the City.
- (c) at least 75% of the pond interior and exterior perimeter will be a vegetated soil slope not steeper than 3H:1V; and
 - (d) the design is stamped by a licensed structural engineer.
- 3) For privately owned and maintained facilities, no more than 25% of the pond interior and exterior perimeter may be retaining walls, and building foundations may serve as one or more of the pond walls.
 - 4) Pond interior berms shall be earthen and contain no steeper than 2:1 side slopes.
 - 5) The perimeter of the pond must be designed such that it is curvilinear in design with minimum radius of 25-ft and a maximum radius of 100-ft. Intent: To create a pond that does not appear manmade (not appearing rectangular in shape).
- **Section 5.1.1.1 DESIGN CRITERIA, Embankments (page 5-4 of the 2016 KCSWDM)** — Amend criteria 1 to read as follows:
 - 1) Pond berm embankments higher than 6 feet shall require design by a geotechnical engineer. Pond embankments adjacent to property lines shall be no higher than 6 feet, unless mitigated and approved by the Director. The embankment height measurement includes the freeboard and is measured from the toe of the slope of the top of the embankment. Mitigation measures for exceeding the 6 foot height restriction for berms adjacent to property lines may include:
 - Designed and analyzed by a geotechnical engineer or licensed structural engineer
 - The toe of embankment slope shall be setback at least 10 feet from the property line
 - 10-ft of Type I landscaping shall be provided between toe of berm and property line to provide landscape screening.
 - **Section 5.1.1.1 DESIGN CRITERIA, Setbacks (page 5-7 of the 2016 KCSWDM)** — Amend to include the following criteria after criteria 5 to read as follows:
 - 6) For pond berm embankments higher than 6 feet, the toe of the exterior slope shall be setback 10 feet or more to the tract or from the property line.
 - **Section 5.1.1.1 DESIGN CRITERIA, Landscaping (page 5-8 of the 2016 KCSWDM)** — Amend to include the following criteria:
 - 1) The opening sentence is modified to read “Landscaping for aesthetic purposes is required.”

2) Ponds shall include trails or paths that encourage passive recreation in connection with stormwater facilities. Connect stormwater paths to off-site trail systems where feasible. Trails within tracts of City-maintained ponds in residential subdivision developments shall be designated “to be maintained by the homeowner’s association”. Trails or paths that provide passive recreation may be credited for up to 100 percent of the onsite recreation space requirement for projects that are required to provide onsite recreational space per SMC 21A.30.140 and SMC 21B.30.090. See Section 5.1.1.1, DESIGN CRITERIA, Detention Ponds in Recreation Tracts.

3) Table 5.1.1.A should be expanded to include but not limited to the following:

- Amended Plant List Examples: SMALL TREES AND SHRUBS WITH FIBROUS ROOTS

- Table 5.1.1.A Small Trees/ High Shrubs

Botanical	Common
<i>Acer circinatum</i>	Vine maple
<i>Arbutus unedo</i>	Strawberry Tree
<i>Amalanchier x grandiflora</i>	Serviceberry
<i>Cornus sericea</i>	Red twig dogwood
<i>Corylus cornuta</i>	Filbert
<i>Morella californica</i>	California Wax Myrtle
<i>Holodiscus discolor</i>	Oceanspray
<i>Physocarpus opulifolius</i>	Ninebark
<i>Pinus contora var contorta</i>	Shore pine
<i>Ribes aureum</i>	
<i>Ribes sanguineum 'King Edward VII'</i>	Red-flowering current
<i>Sambucus nigra</i>	Black elderberry
<i>Vaccinium spp.</i>	Blueberry

- Low Shrubs / Ornamental Grasses/ Perennial / Groundcover / Bulbs

Botanical	Common
<i>Achillea millefolium</i>	Western yarrow
<i>Arctostaphylos uva-ursi</i>	Kinnikinnick
<i>Aster oblongifolius 'October Skies'</i>	Aromatic aster
<i>Cammasia quamash</i>	Camas Lily
<i>Cornus sericea</i>	Dwarf red-twig dogwood
<i>Festuca idahoensis</i>	Idaho fescue
<i>Fragaria chiloensis 'Lipstick'</i>	Coastal strawberry
<i>Gaultheria shallon</i>	Salal
<i>Helianthemum nummularium</i>	Sunrose
<i>Helictotrichon sempervirens</i>	Blue oat grass
<i>Iris tenax</i>	Tough-leaf iris
<i>Mahonia aquifolium</i>	Oregon grape-holly
<i>Lonicera pileata</i>	Boxleaf honeysuckle
<i>Lonicera involucrata</i>	Twinberry

Botanical	Common
<i>Mahonia nervosa</i>	Cascade Oregon grape
<i>Mahonia repens</i>	Creeping mahonia
<i>Narcissus sp.</i>	Daffodil
<i>Nassella tenuissima (formerly stipa)</i>	Mexican feather grass
<i>Pennisetum alopecuroides</i>	Fountain grass
<i>Philadelphus lewisii</i>	Mock-orange
<i>Pinus mugo pumilio</i>	Mugho Pine
<i>Polysticum munitum</i>	Sword fern
<i>Potentilla gracilis</i>	Graceful cinquefoil
<i>Prunus laurocerasus 'Mt. Vernon'</i>	Mt. Vernon Dwarf Laurel
<i>Rosa gymnocarpa</i>	Baldhip rose
<i>Rosa 'Hansa'</i>	Double pink old-fashioned rose
<i>Rosemarinus officinalis</i>	Rosemary
<i>Rhododendron 'PJM' hybrids</i>	PJM Hybrid Rhododendrons
<i>Rudbeckia fulgida var. sullivantii</i>	
<i>Salvia 'May Night'</i>	
<i>Solidago rugosa</i>	Goldenrod
<i>Spiraea japonica</i>	Japanese spirea
<i>Vaccinium ovatum</i>	Evergreen huckleberry

- **Section 5.1.1.1 DESIGN CRITERIA, Detention Ponds in Recreational Tracts (page 5-11 of the 2016 KCSWDM)** – Amend section to read as follows:

Projects required to provide onsite recreational space or landscaped open space per SMC 21A.30.140 and SMC 21B.30.090 may combine the detention pond tract with the recreation space tract or landscaped area to receive up to a 100% reduction in required onsite recreational space, less any recreation facilities required pursuant to SMC 21A.30.160. To receive up to the 100% credit, the following criteria must be met as required by SMC 21A.30.140(4) and SMC 21B.30.100(4):

1. The proposed stormwater tract must be dedicated or reserved as a part of a recreational space tract.
2. To receive a 50% credit, the stormwater pond must meet all standards for typical ponds unless modified by the following additional requirements:
 - a. Side slopes shall not exceed 33 percent unless they are existing, natural, and covered with vegetation. Intent: To create ponds that are natural in appearance.
 - b. A bypass system or an emergency overflow pathway shall be designed to handle flow exceeding the facility design and located so that it does not pass through active recreation areas or present a safety hazard.
 - c. The area surrounding the stormwater pond shall be landscaped in a manner to enhance passive recreational opportunities, including a trail or pathway around the pond perimeter. Intent: To create opportunities for passive recreation or wildlife viewing.
 - d. The stormwater pond shall be designed so that it does not require fencing per

the fencing requirements in Chapter 5 of 2016 KCSWDM (page 5-6).

- e. Split rail fencing (3 ft. minimum height) is required around the pond at the emergency overflow elevation of the pond or higher. Wire mesh backing of the fence is encouraged, but not required. Intent: To preserve the functional integrity of the pond while allowing view of facility.
3. To receive a 100% credit, the stormwater pond must meet all the additional requirements in criteria 2 above, and provide three or more of the following amenities;
 - a. Provide seating using walls, benches and/or tables and chairs that view the stormwater pond. Intent: To provide opportunities within the stormwater tract to linger and interact with the stormwater facility.
 - b. Create overlook or destination points using decks or platform with views of the stormwater system. Intent: To provide opportunities to view the stormwater facility and wildlife.
 - c. Provide vertical planes (using stairs, platforms, etc.) that allow stormwater to be interacted with and viewed from different levels. Intent: To provide visual interest and provide ways to interact with the stormwater facility, such as climbing down to the stormwater facility or viewing from above.
 - d. Provide interpretive signage describing the stormwater feature, or the landscape features (such as highlighting the pollinator benefits of plantings incorporated into the stormwater tract). Intent: To provide education opportunities associated with the stormwater facility.
 - e. Stack horizontal and vertical planes to create features such as pools and waterfalls. Intent: To exploit visual interest of stormwater flowing over surfaces, plunging down planes, or falling over edges.
 - f. Provide a fountain feature near the pond center. Intent: To provide visual interest through continuous water movement.
 - g. Provide at least one fitness station located near the pond accessible via a trail or pathway. Intent: To provide active recreation opportunities and encourage the use of the stormwater tract for recreation.
 4. Where a tract is jointly used for recreational space and Sammamish maintained drainage facilities, the City shall only hold responsibility for maintenance of the drainage facilities, and an access easement shall be provided for that purpose. All recreational features such as, but not limited to, landscaping, trails, fences, benches, etc., shall be the responsibility of the Homeowner's Association or jointly by all property owners within the platted development. Recorded documentation of maintenance responsibilities shall be provided.
- **Section 5.1.1.1 DESIGN CRITERIA, Detention Ponds in Open Space (page 5-12 of the 2016 KCSWDM)** — This section does not apply. City of Sammamish does not require this signage.
 - **Section 5.1.1.1 DESIGN CRITERIA, Figure 5.1.1.D Stormwater Facility Signs (page 5-**

16 of the 2016 KCSWDM) — Replace references to King County and the King County logo with City of Sammamish and the City of Sammamish logo, respectively. Also, replace the sign detail with the Sammamish Stormwater Facility sign detail.

CHAPTER 6 – Water Quality Design

The City of Sammamish has added supplemental information and made minor changes to Chapter 6 of the 2016 KCSWDM, as described below. Apart from this information, project proponents should refer to the county document for guidance on water quality design.

Supplemental Information

The City of Sammamish adopts the BMPs and water quality treatment menus in the 2016 KCSWDM. Special treatment requirements for runoff draining to impaired waterbodies are addressed in Chapter 1. An exception to the 2016 KCSWDM is the treatment requirement for runoff discharging to lakes designated to receive a higher level of total phosphorus removal. The Sensitive Lake Protection Menu in the 2016 KCSWDM has a treatment goal of 50 percent reduction of annual average total phosphorus (TP), assuming typical pollutant concentrations in urban runoff. Lake management plans and studies have determined that Beaver Lake and Pine Lake require higher levels of phosphorus removal to protect the lakes from eutrophication brought about by development. Within these areas, a treatment goal of 80 percent reduction of TP is required. Areas requiring the higher level of TP reduction are shown on the Water Quality Treatment Application map accompanying this Addendum. Proponents for projects within these areas shall work with the City to determine the appropriate measures to be taken to achieve the 80 percent TP reduction goal.

Change to 2016 KCSWDM

- **Section 6.4.1.2 DESIGN CRITERIA, Figure 6.4.1.B Waterfowl Sign (page 6-85 of the 2016 KCSWDM)** — This section does not apply. City of Sammamish does not require this signage.
- The City of Sammamish allows bioretention to be used for pretreatment. The bioretention system shall be designed per the requirements in the 2012 Stormwater Management Manual for Western Washington (Ecology Manual).

DEFINITIONS

The City of Sammamish has made the following changes to the Definitions Section of the 2016 KCSWDM. Project proponents should refer to the county document for other definitions.

Term (page)	Action
<p>Critical aquifer recharge area (p 5 of KCSWDM Definitions)</p>	<p><i>Replace as follows (from SMC 21A.15.253):</i></p> <p>Critical aquifer recharge areas (CARAs) means those areas in the City of Sammamish with a critical recharging effect on aquifers used for potable water as defined by WAC 365-190-030(2). CARAs have prevailing geologic conditions associated with infiltration rates that create a high potential for contamination of groundwater resources or contribute significantly to the replenishment of groundwater. CARAs shall be classified based on the following criteria:</p> <p>(1) Class 1 CARAs include those areas located within the mapped one- or five-year capture zone of a wellhead protection area. (2) Class 2 CARAs include those areas located within the mapped 10-year capture zone of a wellhead protection area. (3) Class 3 CARAs include those areas outside wellhead protection areas that are identified as high aquifer recharge potential areas based on characteristics of surficial geology and soil types. (Ord. O2005-193 § 2)</p>
<p>Erosion hazard area</p> <p>(p 9 of KCSWDM Definitions)</p>	<p><i>Replace as follows (from SMC 21A.15.415):</i></p> <p>Erosion hazard areas mean those areas in the City underlain by soils that are subject to severe erosion when disturbed. Such soils include, but are not limited to, those classified as having a severe or very severe erosion hazard according to the USDA Soil Conservation Service, the 1973 King County Soils Survey or any subsequent revisions or addition by or to these sources. These soils include the following when they occur on slopes 15 percent or steeper:</p> <p>(1) The Alderwood gravely sandy loam (AgD); (2) The Alderwood and Kitsap soils (AkF); (3) The Beausite gravely sandy loam (BeD and BeF); (4) The Everett gravelly sandy loam (EvD); (5) The Kitsap silt loam (KpD); (6) The Ovall gravely loam (OvD and OvF); (7) The Ragnar fine sandy loam (RaD); and (8) The Ragnar-Indianola Association (RdE). (Ord. O2005-193 § 2; Ord. O2003-132 § 10)</p>
<p>Flood hazard area</p> <p>(p 1-10 of KCSWDM Definitions)</p>	<p><i>Replace as follows (per SMC 21A.15.680):</i></p> <p>Flood hazard areas means those areas in the City of Sammamish subject to inundation by the base flood and those areas subject to risk from channel relocation or stream meander including, but not limited to, streams, lakes, wetlands, and closed depressions. (Ord. O2003-132 § 10)</p>

Term (page)	Action
<p>Frequently Flooded Area</p> <p>SMC 21A.50.230</p>	<p><i>Add new definition as follows (from SMC 21A.50.230):</i></p> <p>(1) Frequently flooded areas include all areas of special flood hazards within the jurisdiction of the City of Sammamish.</p> <p>(a) The areas of special flood hazard are identified by the Federal Insurance Administration in a scientific and engineering report entitled "the Flood Insurance Study for King County," as amended, as stated in SMC 15.10.060. The flood insurance study is on file at Sammamish City Hall. The best available information for flood hazard area identification as outlined in SMC 15.10.130(2) shall be the basis for regulation until a new FIRM is issued that incorporates the data utilized under SMC 15.10.130(2).</p> <p>(b) The director may use additional flood information that is more restrictive or detailed than that provided in the Flood Insurance Study conducted by the Federal Emergency Management Agency (FEMA) to designate frequently flooded areas, including data on channel migration, historical data, high water marks, photographs of past flooding, location of restrictive floodways, maps showing future build-out conditions, maps that show riparian habitat areas, or similar information.</p> <p>(2) Development in frequently flooded areas shall be subject to the provisions in Chapter 15.10 SMC. (Ord. O2005-193 § 1; Ord. O99-29 § 1)</p>
<p>Landslide Hazard Area (page 15 of KCSWDM <i>Definitions</i>)</p>	<p><i>Replace as follows (per SMC 21A.15.680):</i></p> <p>Landslide hazard areas mean those areas in the City of Sammamish potentially subject to risk of mass movement due to a combination of geologic, topographic, and hydrologic factors. These areas are typically susceptible to landslides because of a combination of factors including: bedrock, soil, slope gradient, slope aspect, geologic structure, groundwater, or other factors. Landslide hazard areas include the following:</p> <p>(1) Areas of historic failures, such as:(a) Those areas delineated by the U.S. Department of Agriculture's Natural Resources Conservation Service as having a "severe" limitation for building site development;</p> <p>(b) Areas designated as quaternary slumps, earthflows, mudflows, or landslides on maps published by the U.S. Geological Survey or Department of Natural Resources;</p> <p>(2) Areas that have shown movement during the Holocene epoch, from 10,000 years ago to the present, or which are underlain by mass wastage debris from that epoch;</p> <p>(3) Any area with all three of the following characteristics:</p> <p>(a) Slopes steeper than 15 percent; and</p> <p>(b) Hillsides intersecting geologic contacts with a relatively permeable sediment overlying a relatively impermeable sediment or bedrock; and</p> <p>(c) Springs or groundwater seepage;</p> <p>(4) Areas with a slope of 40 percent or steeper and with a vertical relief of 10 or more feet except areas composed of consolidated rock. A slope is delineated by establishing its toe and top and measured by averaging the inclination over at least 10 feet of vertical relief;</p> <p>(5) Slopes that are parallel or subparallel to planes of weakness (such as bedding planes, joint systems, and fault planes) in subsurface materials;</p> <p>(6) Slopes having gradients steeper than 80 percent subject to rock fall during seismic shaking;</p> <p>(7) Areas potentially unstable because of rapid stream incision, stream bank erosion or undercutting by wave action; and</p> <p>(8) Landslide hazard areas do not include those areas composed of slopes greater than 40 percent that were created from a previously non-landslide hazard area through legal grading activity and that are confirmed to be stable by a qualified professional. (Ord. O2005-193 § 2; Ord. O2003-132 § 10)</p>
<p>Landslide Hazard Drainage Area (page 15 of KCSWDM)</p>	<p><i>Replace as follows:</i></p> <p>“Landslide hazard drainage area” are areas where overland flows pose a significant threat</p>

Term (page)	Action
<i>Definitions</i>	to health and safety because of their close proximity to a landslide hazard area as defined by SMC 21A.15.680. Mapped Landslide hazard drainage areas are approximate. Public Works may determine that areas not mapped as Landslide hazard drainage areas may meet this definition.

APPENDICES

The City of Sammamish has made the following changes to the Appendices section of the 2016 KCSWDM. Project proponents should refer to the county appendices where referenced below.

Appendix A: Maintenance Requirements for Flow Control, Conveyance, and WQ Facilities – The City of Sammamish has made no changes, and Appendix A applies in its entirety to the City of Sammamish.

Appendix B: Master Drainage Plan Objective, Criteria and Components, and Review Process – This appendix does not apply within the City of Sammamish.

Appendix C: Simplified Drainage Requirements – This is a separately bound document included with the KCSWDM and this appendix applies in its entirety to the City of Sammamish. Appendix C provides guidance for many of the low impact development (LID) techniques referenced in the City of Sammamish LID Ordinance.

Appendix D: Construction Stormwater Pollution Prevention (CSWPP) Standards – This is a separately bound document included with the KCSWDM and this appendix applies in its entirety to the City of Sammamish.

R E F E R E N C E

Table Ref-1 identifies which reference sections in the 2016 KCSWDM apply and those that do not apply to the City of Sammamish. Table Ref-2 lists additional City of Sammamish references that apply.

Table Ref-1. Applicability of KCSWDM References to projects in the City of Sammamish

No.	Description	Action
1	KCC 9.04 Surface Water Runoff Policy	This reference document applies. The King County surface water runoff policy, as adopted by reference in Chapter 9.04 KCC as adopted by SMC 13
2	Adopted Critical Drainage Areas	This reference document shall be deleted in entirety. Project proponents should refer to City codes, ordinances, and sensitive areas maps for description and requirements within sensitive areas.
3	Other Adopted Area Specific Drainage Requirements	This reference document shall be deleted in entirety. Project proponents should refer to City codes, ordinances, and sensitive areas maps for description and requirements within sensitive areas. The project proponent shall also work with the City on additional requirements that may apply to their project.
4	Other Drainage Related Regulations and Guidelines A. Grading Code Soil Amendment Standard B. Clearing & Grading Seasonal Limitations C. Landscape Management Plan Guidelines D. Shared Facility Maintenance Responsibility and Guidance	 A. Not applicable. See SMC 16.15. B. Not applicable. See SMC 16.15 and SMC 21A.50.220. C. Applicable. D. Applicable.
5	Wetland Hydrology Protection Guidelines	These guidelines apply.

No.	Description	Action
6	Hydrologic/Hydraulic Design Methods A. Infiltration Rate Test B. Pond Geometry Equations C. Introduction to Level Pool Routing D. Supplemental Modeling Guidelines	This reference section is applicable.
7	Engineering Plan Support A. King County Standard Map Symbols B. Standard Plan Notes and Example Construction Sequence C. Storm Filter Facility Access and Cartridge Configuration	A. Applicable. B. Replace with City’s standard plan notes. Contact City for most current version of notes. C. Not applicable. Delete this reference subsection in entirety.
8	Forms and Worksheets A. TIR Worksheet B. Offsite Analysis Drainage System Table C. Water Quality Facility Sizing Worksheets D. Flow Control and Water Quality Facility Summary Sheet and Sketch E. CSWPPP Worksheet Forms F. Adjustment Application Form and Process Guidelines G. Dedication and Indemnification Clause H. Bond Quantities Worksheet I. Maintenance and Defect Agreement J. Declaration of Covenant K. Drainage Release Covenant L. Drainage Easement M. Flow Control BMP Covenant (see replacement form name below). N. Impervious Surface Limit Covenant O. Clearing Limit Covenant P. River Protection Easement Q. Leachable Metals Covenant	A. Applicable. B. Applicable. C. Applicable. D. Applicable. E. Applicable. F. Applicable, replace with COS updated form. G. Applicable, replace with COS updated form. H. Applicable. I. Applicable, replace with COS updated form. J. Applicable, replace with COS updated form. K. Applicable, replace with COS updated form. L. Applicable, replace with COS updated form. M. Applicable, replace with COS updated form. N. Applicable, replace with COS updated form. O. Applicable, replace with COS updated form. P. Applicable, replace with COS updated form. Q. Applicable, replace with COS updated form.
9	Interim Changes to Requirements A. Blanket Adjustments B. Administrative Changes	Applicable.
10	King County Identified Water Quality Problems	Delete in entirety

No.	Description	Action
11	Materials A. (VACANT) B. (VACANT) C. Bioretention Soil Media Standard Specifications D. (VACANT) E. Roofing Erodible or Leachable Materials	A. Not applicable. B. Not applicable. C. Applicable. D. Not applicable. E. Applicable.
12	(VACANT)	Not applicable
13	(VACANT)	Not applicable
14	Supplemental Approved Facilities A. Approved Proprietary Facilities B. Approved Public Domain Facilities	A. Applicable. B. Applicable.

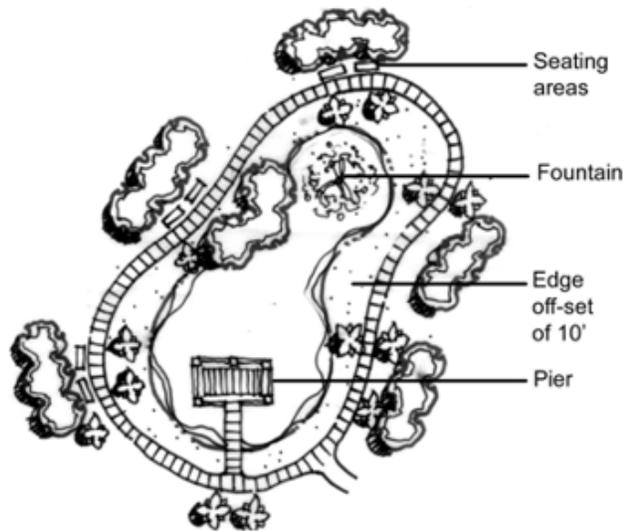
Table Ref-2. City of Sammamish References

No.	Description
1	Area-Specific Drainage Requirements A. Flow Control Applications Map B. Water Quality Applications Map C. Landslide Hazard Drainage Areas Map D. Erosion Hazard Near Sensitive Water Bodies

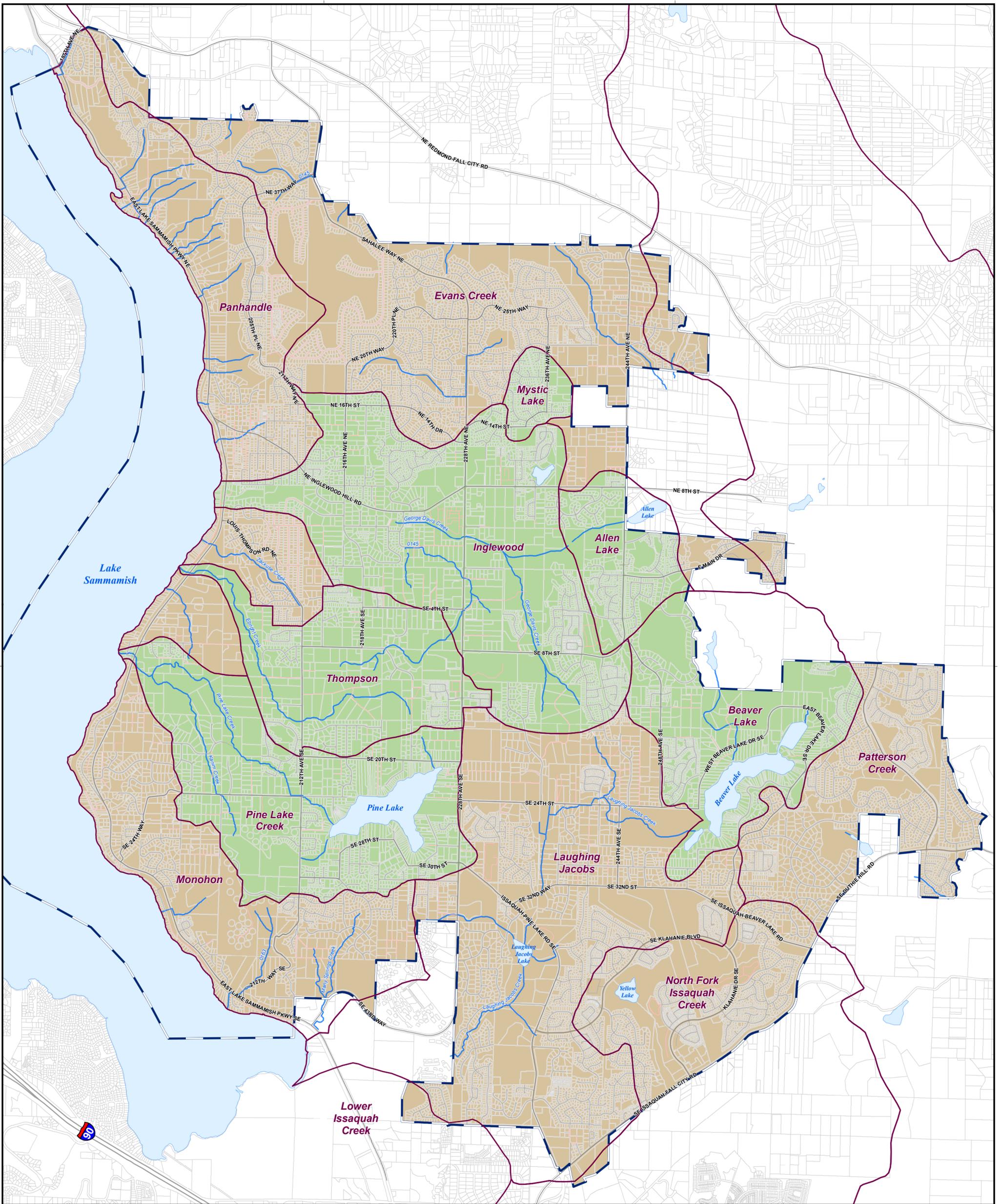
Stormwater Pond Design Intent



POOR POND DESIGN



GOOD POND DESIGN



- Conservation Flow Control (Level 2)
- Flood Problem Flow Control (Level 3)
- Drainage Basins
- Sammamish City Limits
- Streets - Public
- Streets - Private



Basin boundaries expressed on this map are approximate, and will need to be verified during the Downstream Analysis to determine the approximate flow control standard.

0 1,000 2,000 3,000 4,000 5,000 6,000 Feet

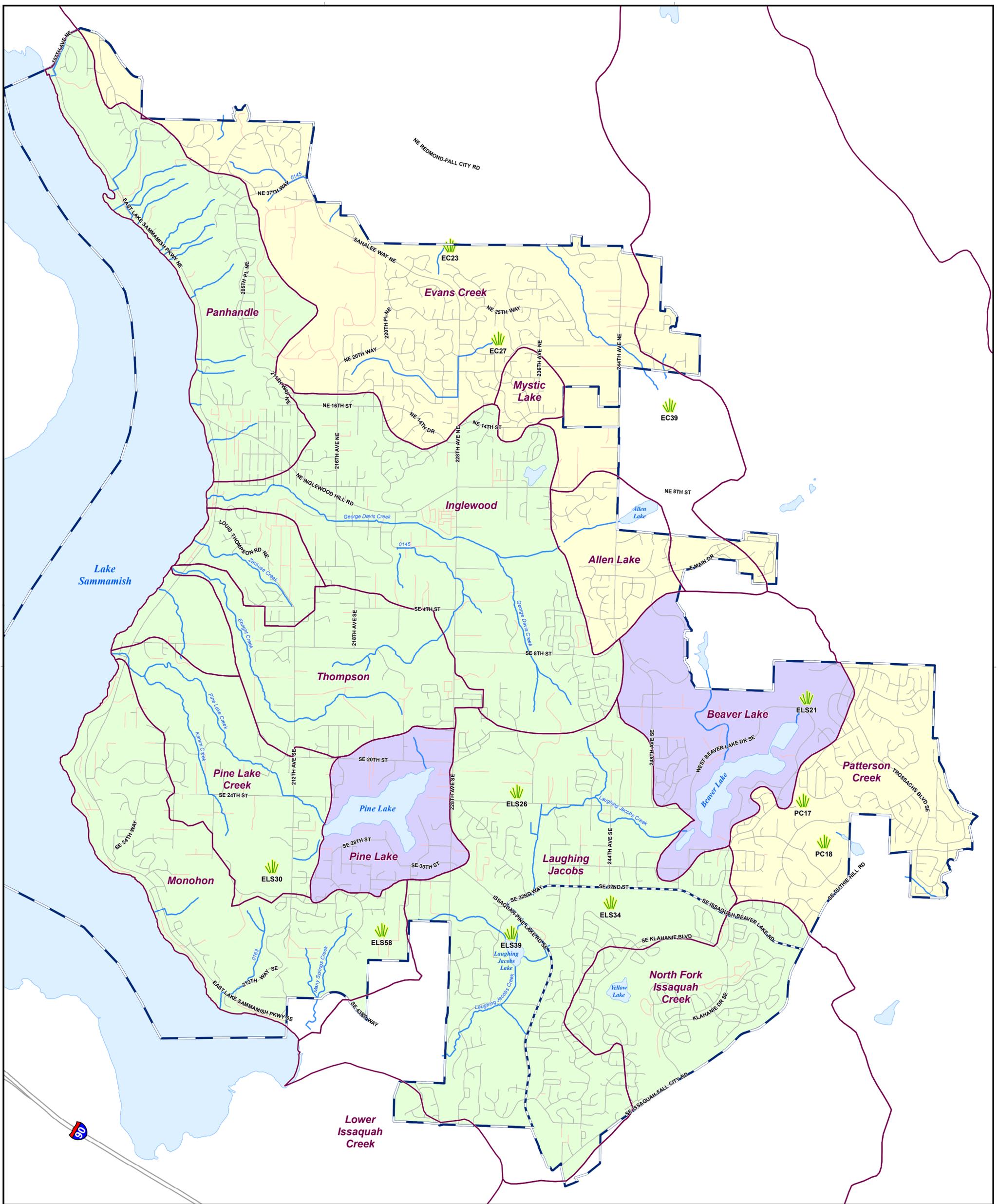
0 0.25 0.5 0.75 1 Miles

Flow Control Map



The information included on this map has been compiled from a variety of sources and is subject to change without notice.

Produced by the City of Sammamish 2014. No warranties of any sort, including but not limited to accuracy, fitness or merchantability, accompany this product.



- Basic Water Quality Treatment Areas
- Sensitive Lake Treatment Areas
- Critical Drainage Areas: Sensitive Lake plus 80% Phosphorus Removal
- Drainage Basins
- Identified Sphagnum Bog Wetlands
- Sammamish City Limits
- Streets - Public
- Streets - Private



Basin boundaries expressed on this map are approximate, and will need to be verified during the Downstream Analysis to determine the approximate water quality standards.

0 1,000 2,000 3,000 4,000 5,000 6,000 Feet

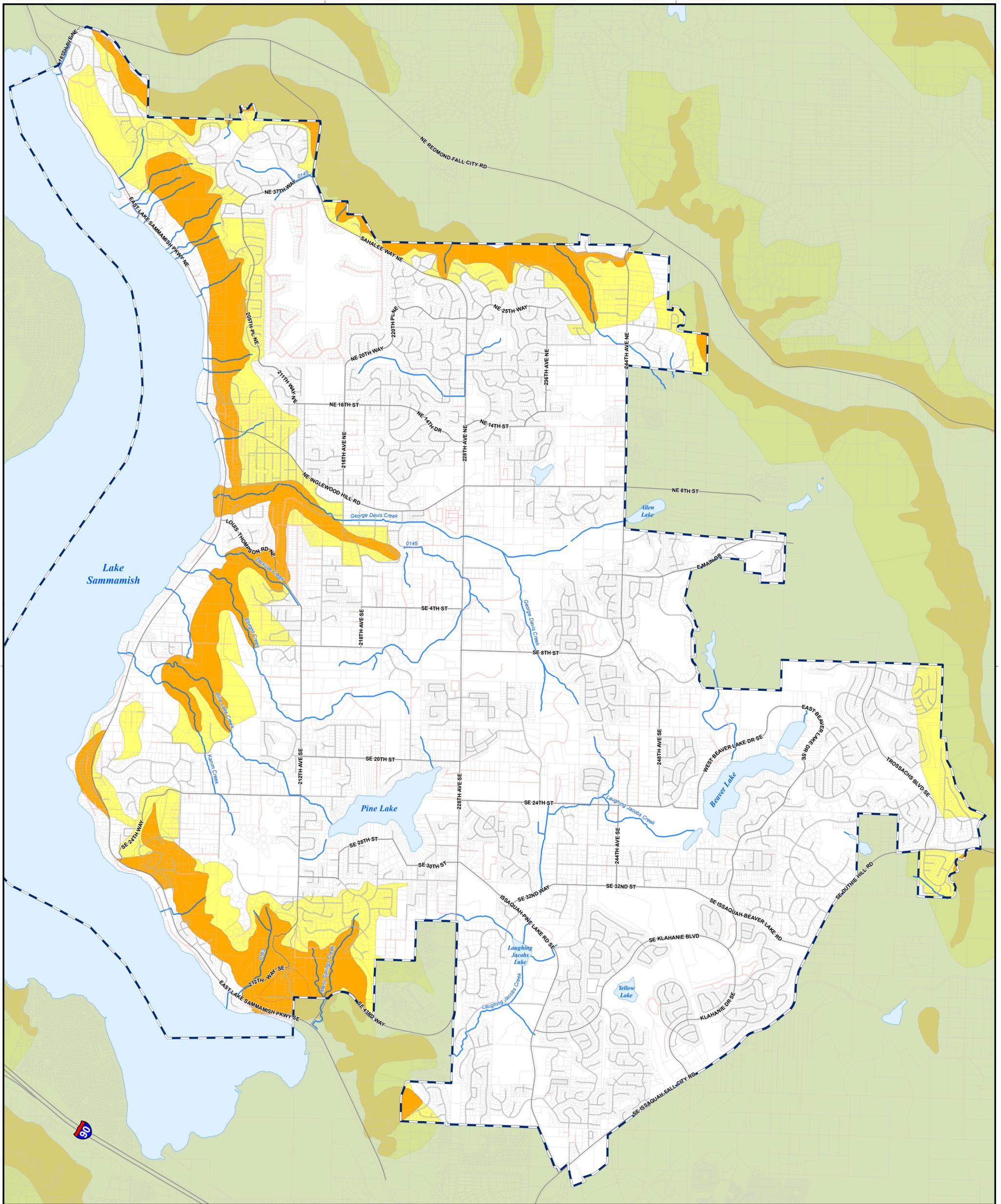
0 0.25 0.5 0.75 1 Miles

Water Quality Map



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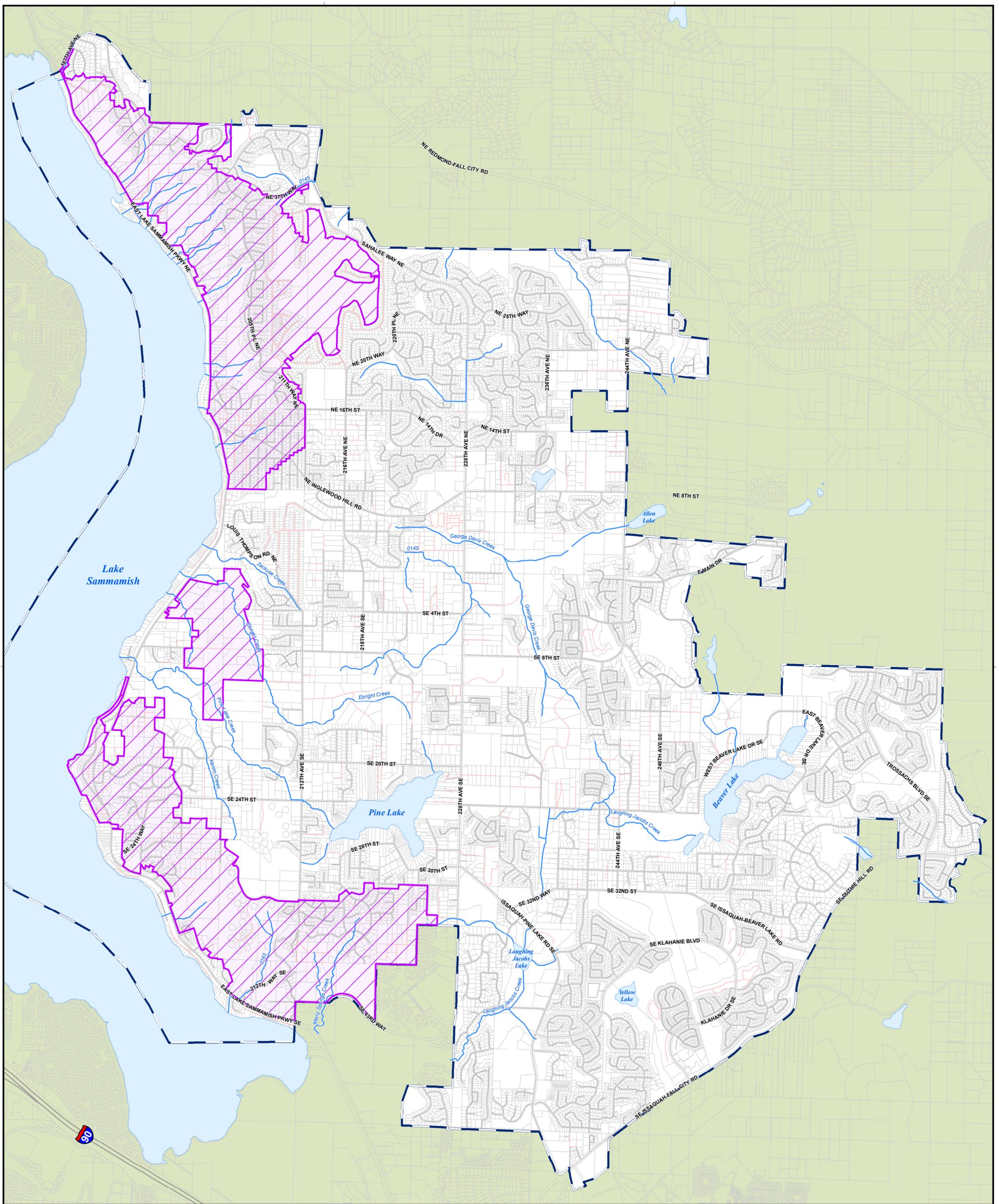
- Landslide Hazard Area
- Landslide Hazard Drainage
- Sammamish City Limits
- Streets - Public
- Streets - Private



Landslide Drainage Hazards Map



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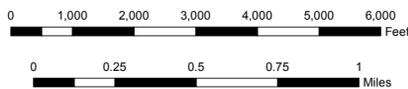


 Erosion Hazards Near Sensitive Water Bodies

-  Sammamish City Limits
-  Streets - Public
-  Streets - Private



Basin boundaries expressed on this map are approximate, and will need to be verified during the Downstream Analysis to determine the approximate flow control standard.



Erosion Hazards Near Sensitive Water Bodies



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Chapter 13.10

DEFINITIONS

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- 13.10.820 Water quality ~~treatment~~ facility.

13.10.010 Scope of chapter.

This chapter contains definitions of technical and procedural terms used throughout this title. (Ord. O2011-304 § 1 (Att. A))

13.10.020 Adjustment.

“Adjustment” means a department-approved variation in the application of the requirements of Chapter 13.20 SMC and the Surface Water Design Manual to a particular project in accordance with SMC 13.20.030. “Adjustment” replaces “variance,” which was used in prior editions of the Surface Water Design Manual. (Ord. O2011-304 § 1 (Att. A))

13.10.030 AKART.

“AKART” means “all known, available and reasonable methods of prevention, control and treatment.” “AKART” represents the most current methodology that can be reasonably required for preventing, controlling or abating the pollutants associated with a discharge. “AKART” applies to both point and nonpoint sources of pollution. (Ord. O2011-304 § 1 (Att. A))

13.10.040 Applicant.

“Applicant” means a property owner or a public agency or public or private utility that owns a right-of-way or other easement or has been adjudicated the right to such an easement under RCW 8.12.090, or any person or entity designated or named in writing by the property or easement owner to be the applicant, in an application for a development proposal, permit or approval. (Ord. O2011-304 § 1 (Att. A))

13.10.050 Basin.

“Basin” means a geographic area that contains and drains to a stream or river named and noted on common maps, such as the Cedar River, Sammamish River, Green River, Snoqualmie River, Skykomish River or White River, or a geographic area that drains to a nonflowing water body named and noted on common maps, such as Lake Washington or Puget Sound. (Ord. O2011-304 § 1 (Att. A))

13.10.060 Basin plan.

“Basin plan” means a plan and all implementing regulations and procedures including, but not limited to, capital projects, public education activities and land use management regulations adopted by ordinance for managing surface and stormwater within the basin. (Ord. O2011-304 § 1 (Att. A))

13.10.070 Best management practices.

“Best management practices” or “BMPs” means any schedule of activities, prohibitions of practices, maintenance procedure or the best available and reasonable physical, structural, and/or managerial or behavioral activities practice approved by King County, that, when used singly or in combination, prevent, eliminate or reduce the release of pollutants and other adverse impacts contamination of ~~both~~ to surface water, stormwater and groundwaters. (Ord. O2011-304 § 1 (Att. A))

13.10.080 City.

“City” means City of Sammamish. (Ord. O2011-304 § 1 (Att. A))

13.10.090 Closed depression.

“Closed depression” means an area greater than 5,000 square feet at overflow elevation that is low-lying and that has no or such a limited surface water outlet that the area acts as a stormwater retention facility. (Ord. O2011-304 § 1 (Att. A))

13.10.100 Clean Water Act.

“Clean Water Act” means 33 U.S.C. 1251 et seq., as amended. (Ord. O2011-304 § 1 (Att. A))

13.10.110 Construct or modify.

“Construct or modify” means to install a new drainage pipe or ditch or make improvements to an existing drainage pipe or ditch, for purposes other than maintenance, that either serves to concentrate previously unconcentrated surface and stormwater runoff or serves to increase, decrease or redirect the conveyance of surface and stormwater runoff. “Construct or modify” does not include installation or maintenance of a driveway culvert installed as part of a single-family residential building permit. (Ord. O2011-304 § 1 (Att. A))

13.10.120 Conveyance system.

“Conveyance system” means the drainage facilities and features, both natural and constructed, that ~~collect, contain and provide for the flow of surface and stormwater from the highest points on the land down to a receiving water~~provide for the collection and transport of surface water or stormwater runoff. The natural elements of the conveyance system include swales and small drainage courses, streams, rivers, lakes and wetlands. The constructed elements of the conveyance system include gutters, ditches, pipes, catch basins, channels and most flow control and water quality treatment facilities. (Ord. O2011-304 § 1 (Att. A))

13.10.130 Department.

“Department” means the department of public works or its successor. (Ord. O2011-304 § 1 (Att. A))

13.10.140 Development.

“Development” means any activity that requires a permit or approval, including, but not limited to, a building permit, grading permit, shoreline substantial development permit, conditional use permit, special use permit, zoning variance or reclassification, subdivision, short subdivision, urban planned development, binding site plan, site development permit or right-of-way use permit. “Development” does not include a Class I, II, III or IV-S forest practice conducted in accordance with Chapter 76.09 RCW and WAC Title 222 or a Class IV-G nonconversion forest practice, as defined in Chapter 21A.15 SMC, conducted in accordance with Chapter 76.09 RCW and WAC Title 222 and a county-approved forest management plan. (Ord. O2011-304 § 1 (Att. A))

13.10.150 Developed parcel.

“Developed parcel” means any parcel altered from the natural state by the construction, creation or addition of impervious surfaces. (Ord. O2011-304 § 1 (Att. A))

13.10.160 Director.

“Director” means the director of the City of Sammamish department of public works, other department directors specified in enforcement procedures established in accordance with the Sammamish Municipal Code, or any designee of those directors. (Ord. O2011-304 § 1 (Att. A))

13.10.170 Division.

“Division” means the department of public works, engineering division or its successor agency. (Ord. O2011-304 § 1 (Att. A))

13.10.180 Discharge.

“Discharge” means runoff, excluding offsite flows, leaving the proposed development through overland flow, built conveyance systems, or infiltration facilities~~throw, drain, release, dump, spill, empty, emit, or pour forth any matter or to cause or allow matter to flow, run or seep from land or be thrown, drained, released, dumped, spilled, emptied, emitted or poured into water~~. (Ord. O2011-304 § 1 (Att. A))

13.10.190 Drainage.

“Drainage” means the collection, conveyance, containment or discharge, or any combination thereof, of surface and stormwater runoff. (Ord. O2011-304 § 1 (Att. A))

13.10.200 Drainage facility.

“Drainage facility” means a constructed or engineered feature that collects, conveys, stores or treats surface and stormwater runoff. “Drainage facility” includes, but is not limited to, a constructed or engineered stream, lake, wetland, or closed depression, or a pipe, channel, ditch, gutter, flow control facility, flow control BMP, water quality facility, erosion and sediment control facility, and any other structure and appurtenance that provides for drainage pipelines, channels, ditches, swamps, lakes, wetlands, closed depressions, infiltration facilities, flow control facilities, erosion/sedimentation control facilities and other drainage structures and appurtenances, both natural and constructed. (Ord. O2011-304 § 1 (Att. A))

13.10.210 Drainage review.

“Drainage review” means an evaluation by City staff of a proposed project’s compliance with the drainage requirements in the Surface Water Design Manual. The types of drainage review include: small-Simplified Drainage Review, Tproject drainage review, targeted dDrainage reviewReview, Directed Drainage Review, full-Full drainage-Drainage review-Review and large-Large project-Project drainage-Drainage reviewReview. (Ord. O2011-304 § 1 (Att. A))

13.10.220 Effective impervious areasurface.

“Those impervious surfaces that are connected via sheet flow or discrete conveyance to a drainage system. Impervious surfaces are considered ineffective if: 1) the runoff is fully dispersed as described in Appendix C of this manual; 2) residential roof runoff is infiltrated in accordance with the full infiltration BMP described in the Surface Water Design Manual; or 3) approved continuous runoff modeling methods indicate that the entire runoff file is infiltrated.Effective impervious area” means the portion of actual impervious area that is connected, or has the effect of being connected as defined in the Surface-Water Design Manual, directly to the stormwater drainage system via surface flow or discrete conveyances such as pipes, gutters or ditches. (Ord. O2011-304 § 1 (Att. A))

13.10.230 Erosion and sediment control.

“Erosion and sediment control” means any temporary or permanent measures taken to reduce erosion, control siltation and sedimentation and ensure that sediment-laden water does not leave the site or enter into wetlands or aquatic areas. (Ord. O2011-304 § 1 (Att. A))

13.10.240 Farm management plan.

“Farm management plan” means a comprehensive site-specific plan developed by the farm owner in cooperation with the King Conservation District taking into consideration the land owners’ objectives while protecting water quality and related natural resources. (Ord. O2011-304 § 1 (Att. A))

13.10.250 Financial guarantee.

“Financial guarantee” means a form of financial security posted to do one or more of the following: ensure timely and proper completion of improvements; ensure compliance with the Sammamish Municipal Code; or provide secured warranty of materials, workmanship of improvements and design. “Financial guarantees” include assignments of funds, cash deposit, surety bonds or other forms of financial security acceptable to the director. “Performance guarantee,” “maintenance guarantee” and “defect guarantee” are considered subcategories of financial guarantee. (Ord. O2011-304 § 1 (Att. A))

13.10.260 Flood hazard reduction plan.

“Flood hazard reduction plan” means a plan and all implementing programs, regulations and procedures including, but not limited to, capital projects, public education activities and enforcement programs for reduction of flood hazards and prepared in accordance with RCW 86.12.200. (Ord. O2011-304 § 1 (Att. A))

13.10.270 Flow control best management practice.

“Flow control best management practice” ~~means a method or design for dispersing, infiltrating or otherwise reducing or preventing development-related increases in surface and stormwater runoff at, or near, the sources of those increases.~~ means a small scale drainage facility or feature that is part of a development site strategy to use processes such as infiltration, dispersion, storage, evaporation, transpiration, forest retention, and reduced impervious surface footprint to mimic pre-developed hydrology and minimize stormwater runoff. “Flow control best management practice” includes the methods and designs specified in the Surface Water Design Manual. (Ord. O2011-304 § 1 (Att. A))

13.10.280 Flow control facility.

“Flow control facility” means a drainage facility designed to mitigate the impacts of increased surface and stormwater runoff generated by site development in accordance with the drainage requirements in this chapter. A flow control facility is designed either to hold water for a considerable length of time and then release it by any combination of evaporation, plant transpiration or infiltration into the ground or to hold runoff for a short period of time and then release it to the conveyance system. (Ord. O2011-304 § 1 (Att. A))

13.10.290 Forest practices.

“Forest practices” means any activity conducted on or directly pertaining to forest land and relating to growing, harvesting, or processing timber, as defined in Chapter 222-16 WAC. (Ord. O2011-304 § 1 (Att. A))

13.10.300 Full drainage review.

“Full drainage review” means the evaluation required by Chapter 13.20 SMC for any proposed project, unless the project is subject to ~~small-simplified project~~ drainage review, targeted drainage review, direct drainage review or large project drainage review, that:

- (1) Would result in 2,000 square feet or more of new plus replaced impervious surface; or
- (2) ~~Would result in 7,000 square feet or more of land disturbing activity.~~ ould result in 35,000 square feet or more of new pervious surface; or
- ~~(3) Is a redevelopment project on one or more parcels where the total of new and replaced impervious surface is 5,000 square feet or more and when the valuation of proposed improvements exceeds 50 percent of the assessed value of the existing site improvements, including interior improvements and excluding required mitigation and frontage improvements. (Ord. O2011-304 § 1 (Att. A))~~

13.10.310 Groundwater.

“Groundwater” means all waters that exist beneath the land surface or beneath the bed of any ~~stream, lake or reservoir or other body of surface water, whatever may be the geological formation or structure in which such water stands or flows, percolates or otherwise moves.~~ (Ord. O2011-304 § 1 (Att. A))

13.10.320 High-use site.

“High-use site” means a commercial, industrial or road intersection site that generates a higher than average number of vehicle turnovers or has other characteristics that generate the potential for chronic oil accumulation. “High-use site” includes:

(1) A commercial or industrial site subject to:

(a) An expected daily traffic count greater than 100 vehicles per 1,000 square feet of gross building area;

(b) Petroleum storage or transfer in excess of 1,000-500 gallons per year, not including routine fuel oil storage or transfer; or

(c) Use, storage or maintenance of a fleet of 25 or more diesel vehicles each weighing over 10 tons; or

(2) A road intersection with average daily traffic counts of 25,000 vehicles or more on the main roadway and 15,000 or more vehicles on any intersecting roadway, excluding pedestrian or bicycle use improvement projects. (Ord. O2011-304 § 1 (Att. A))

13.10.330 Hydraulically connected.

“Hydraulically connected” means connected through surface flow or water features such as wetlands or lakes. (Ord. O2011-304 § 1 (Att. A))

13.10.340 Impervious surface.

“Impervious surface” ~~means a hard surface area that either prevents or retards the entry of water into the soil mantle as under natural conditions before development; or that causes water to run off the surface in greater quantities or at an increased rate of flow compared to the flow present under natural conditions prior to development (see also "new impervious surface"). Common impervious surfaces include, but are not limited to, roof, walkways, patios, driveways, parking lots, or storage areas, areas that are paved, graveled or made of packed or oiled earthen materials or other surfaces that similarly impede the natural infiltration of surface water or stormwater. For the purposes of applying the impervious surface thresholds and exemptions contained in the Surface Water Design Manual, permeable pavement, vegetated roofs, and pervious surfaces with underdrains designed to collect stormwater runoff are considered impervious surface while an open uncovered flow control or water quality facility is not . However, for the purposes of computing runoff, uncovered flow control or water quality facilities shall be modeled as impervious surfaces as specified in Chapter 3 of the Surface Water Design Manual.~~ means a hard surface area which either prevents or retards the entry of water into the soil mantle as it entered under natural conditions prior to development, and/or a hard surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roofs, walkways, patios, driveways, parking lots, storage areas, areas which are paved, graveled or made of packed or oiled earthen materials or other surfaces which similarly impede the natural infiltration of surface and stormwater. Open, uncovered flow control facilities shall not be considered as impervious surfaces for the purpose of this chapter. (Ord. O2011-304 § 1 (Att. A))

13.10.350 Improvement.

“Improvement” means a permanent, human-made, physical change to land or real property including, but not limited to, buildings, streets, driveways, sidewalks, crosswalks, parking lots, water mains, sanitary and storm sewers, drainage facilities and landscaping. (Ord. O2011-304 § 1 (Att. A))

13.10.360 Land disturbing activity.

“Land disturbing activity” means an activity that results in a change in the existing soil cover, both vegetative and nonvegetative, or to the existing soil topography. “Land disturbing activity” includes, but is not limited to, demolition, construction, clearing, grading, filling, excavation and compaction. “Land disturbing activity” does not include tilling conducted as part of agricultural practices, landscape maintenance or gardening. (Ord. O2011-304 § 1 (Att. A))

13.10.370 Land use code.

“Land use code” means restrictions on the type of development for a specific parcel of land as identified by records maintained by the City of Sammamish as modified or supplemented by information resulting from investigation by the division. Land use codes are preliminary indicators of the extent of impervious surface and are used in the initial analysis to assign an appropriate rate category for a specific parcel. (Ord. O2011-304 § 1 (Att. A))

13.10.380 Lake management plan.

“Lake management plan” means a plan describing the lake management recommendations and requirements adopted by public rule for managing water quality within individual lake basins. Adopted lake management plans are available from the department. (Ord. O2011-304 § 1 (Att. A))

13.10.390 Large project drainage review.

“Large project drainage review” means the evaluation required by Chapter 13.20 SMC for any proposed project that:

(1) Has an urban plan development land use designation in the Sammamish comprehensive plan land use map;

(2) Would, at full buildout of the project site, result in 50 acres or more of new impervious surface within a drainage subbasin or a number of subbasins hydraulically connected across subbasin boundaries; or

(3) Has a project site of 50 acres or more within a critical aquifer recharge area, as defined in SMC Title 21A. (Ord. O2011-304 § 1 (Att. A))

13.10.400 Licensed civil engineer.

“Licensed civil engineer” means a person registered with the state of Washington as a professional engineer in civil engineering. (Ord. O2011-304 § 1 (Att. A))

13.10.410 Maintenance.

“Maintenance” means those usual activities taken to prevent a decline, lapse or cessation in the use of currently serviceable structures, facilities, equipment or systems, if there is no expansion of the structure, facilities, equipment or system and there are no significant hydrologic impacts.

“Maintenance” includes the repair or replacement of nonfunctional facilities or the replacement of existing structures with different types of structures, if the repair or replacement is required by one or more environmental permits or to meet current engineering standards and the functioning characteristics of the original facility or structure are not changed. (Ord. O2011-304 § 1 (Att. A))

13.10.420 Master drainage plan.

“Master drainage plan” means a comprehensive drainage control plan [for projects subject to large project drainage review and](#) intended to prevent significant adverse impacts to [surface water and](#)

groundwater, the natural and constructed drainage system, both on and off site. (Ord. O2011-304 § 1 (Att. A))

13.10.430 National Pollutant Discharge Elimination System.

“National Pollutant Discharge Elimination System” or “NPDES” means the national program for controlling pollutants from point source discharges directly into waters of the United States under the Clean Water Act. (Ord. O2011-304 § 1 (Att. A))

13.10.440 National Pollutant Discharge Elimination System permit.

“National Pollutant Discharge Elimination System permit” means an authorization, license or equivalent control document issued by the Environmental Protection Agency or the Washington State Department of Ecology to implement the requirements of the NPDES program. (Ord. O2011-304 § 1 (Att. A))

13.10.450 Native vegetated surface.

“Native vegetated surface” means a surface in which the soil conditions, ground cover and species of vegetation are like those of the original native condition for the site, as more specifically set forth in the Surface Water Design Manual. (Ord. O2011-304 § 1 (Att. A))

13.10.460 Natural discharge location.

“Natural discharge location” means the location where runoff leaves the project site under existing site conditions as defined in the Surface Water Design Manual. (Ord. O2011-304 § 1 (Att. A))

13.10.470 Natural surface water drainage system.

“Natural surface water drainage system” means such landscape features as rivers, streams, lakes and wetlands. This system circulates water in a complex hydrological cycle. (Ord. O2011-304 § 1 (Att. A))

13.10.480 New impervious surface.

“New impervious surface” means the creation of a hard or compacted surface such as roofs, pavement, gravel or dirt or the addition of a more compacted surface such as the paving of existing dirt or gravel. Permeable pavement and vegetated roofs are considered new impervious surface for purposes of determining whether the thresholds for application of minimum requirements are exceeded, as are lawns, landscaping, sports fields, golf courses, and other areas that have modified runoff characteristics resulting from the addition of underdrains designed to collect stormwater runoff. Open, uncovered retention/detention facilities shall not be considered impervious surfaces for purposes of determining whether the thresholds for application of minimum requirements are exceeded. Open, uncovered retention/detention facilities shall be considered impervious surfaces for purposes of runoff modeling. (Ord. O2011-304 § 1 (Att. A))

13.10.490 New pervious surface.

“New pervious surface” means the conversion of a native vegetated surface or other native surface to a nonnative pervious surface, including, but not limited to, pasture land, grassland, cultivated land, lawn, landscaping or bare soil or any alteration of existing nonnative pervious surface that results in increased surface and stormwater runoff as defined in the Surface Water Design Manual. (Ord. O2011-304 § 1 (Att. A))

13.10.500 Open space.

“Open space” means any parcel, property or portion thereof classified for current use taxation under Chapter 20.36 KCC and Chapter 84.34 RCW, or for which the development rights have been sold to King County under Chapter 26.04 KCC. This definition includes lands which have been classified as open

space, agricultural or timber lands under criteria contained in Chapter 20.36 KCC and Chapter 84.34 RCW. (Ord. O2011-304 § 1 (Att. A))

13.10.510 Parcel.

“Parcel” means the smallest separately segregated unit or plot of land having an identified owner, boundaries and surface area which is documented for property tax purposes and given a tax lot number by the King County assessor. (Ord. O2011-304 § 1 (Att. A))

13.10.520 Person.

“Person” means an individual and his or her agent or assign, municipality, political subdivision, government agency, partnership, corporation, business or any other entity. (Ord. O2011-304 § 1 (Att. A))

13.10.525 Pervious surface.

“Pervious surface” means any surface material that allows stormwater to infiltrate into the ground. Examples include lawn, landscape, pasture, and native vegetation areas. Note for purposes of threshold determination and runoff volume modeling for detention and treatment, vegetated roofs and permeable pavements are to be considered impervious surfaces along with lawns, landscaping, sports fields, golf courses, and other areas that have modified runoff characteristics resulting from the addition of underdrains.

13.10.530 Pollution-generating impervious surface.

“Pollution-generating impervious surface” means an impervious surface considered to be a significant source of pollutants in surface and stormwater runoff. “Pollution-generating impervious surface” includes those surfaces subject to vehicular use or storage of erodible or leachable materials, wastes or chemicals and that receive direct rainfall or the run-on or blow-in of rainfall. A covered parking area would be included if runoff from uphill could regularly run through it or if rainfall could regularly blow in and wet the pavement surface. Metal roofs are also considered pollution-generating impervious surfaces unless they are treated to prevent leaching. Pollution-generating impervious surfaces include roofs that are exposed to the venting of significant amounts of dusts, mists, or fumes from manufacturing, commercial, or other indoor activities. They also include vegetated roofs exposed to pesticides, fertilizers, or loss of soil. Lawns, landscaping, sports fields, golf courses, and other areas that have modified runoff characteristics resulting from the addition of underdrains that have the pollution-generating characteristics described under the “pollution-generating pervious surface” definition are also considered PGIS. (Ord. O2011-304 § 1 (Att. A))

13.10.540 Pollution-generating pervious surface.

“Pollution-generating pervious surface” means a nonimpervious surface considered to be a significant source of pollutants in surface and stormwater runoff. “Pollution-generating pervious surfaces” include surfaces subject to the use of pesticides and fertilizers, to the use or storage of erodible or leachable materials, wastes or chemicals or to the loss of soil. “Pollution-generating pervious surface” includes, but is not limited to, the lawn and landscaped areas of a residential or commercial site, golf course, park sports field and City-standard grassed modular grid pavement. (Ord. O2011-304 § 1 (Att. A))

13.10.550 Project.

“Project” means any proposed action to alter or develop a site that may also require drainage review. (Ord. O2011-304 § 1 (Att. A))

13.10.560 Project site.

“Project site” means the portion of a site and any off-site areas subject to proposed project activities, alterations and improvements including those required by this chapter. (Ord. O2011-304 § 1 (Att. A))

13.10.570 Rate category.

“Rate category” means the classification in this chapter given to a parcel in the service area based upon the type of land use on the parcel and the percentage of impervious surface area contained on the parcel. (Ord. O2011-304 § 1 (Att. A))

13.10.580 Redevelopment project.

“Redevelopment project” means a project that proposes to add, replace or modify impervious surface for purposes other than a residential subdivision or maintenance on a site that:

- (1) Is already substantially developed in a manner that is consistent with its current zoning or with a legal nonconforming use; or
- (2) Has an existing impervious surface coverage of 35 percent or more. (Ord. O2011-304 § 1 (Att. A))

13.10.590 Replaced impervious surface.

“Replaced impervious surface” means an existing impervious surface proposed to be removed and reestablished as impervious surface, excluding impervious surface removed for the sole purpose of installing utilities or performing maintenance on underground infrastructure. For structures, removed means the removal of buildings down to the foundation. For other impervious surfaces, removed means the removal down to base course or bare soil. It does not include the removal of pavement material through grinding or other surface modification unless the entire layer of PCC or AC is removed. Replaced impervious surface also includes impervious surface that is moved from one location to another on the project site where the following two conditions are met: (A) the area from which the impervious surface is moved from will be restored to the same or better runoff discharge characteristics as the area being covered by the moved impervious surface, and (B) impervious surface at the new location is either designated as non- pollution generating or the pollution generating characteristics remain unchanged compared to that of the original location. ~~For purposes of this definition, “removed” includes the removal of buildings down to bare soil or the removal of Portland cement concrete slabs or pavement or asphaltic concrete pavement.~~ (Ord. O2011-304 § 1 (Att. A))

13.10.600 Residence.

“Residence” means a building or structure or portion thereof, designed for and used to provide a place of abode for human beings. The term residence includes the term “residential” or “residential unit” as referring to the type of or intended use of a building or structure. (Ord. O2011-304 § 1 (Att. A))

13.10.610 Residential parcel.

“Residential parcel” means any parcel which contains no more than three residences or three residential units which are within a single structure and is used primarily for residential purposes. (Ord. O2011-304 § 1 (Att. A))

13.10.620 Runoff.

“Runoff” means that portion of water originating from rainfall and other precipitation that flows over the surface or just below the surface from where it fell and is found in drainage facilities, rivers, streams, springs, seeps, ponds, lakes, wetlands and shallow groundwater as well as on ground surfaces. For the purpose of this definition, groundwater means all waters that exist beneath the land surface or beneath the bed of any stream, lake or reservoir, or other body surface water, whatever may be the geological

formation or structure in which such water stands or flows, percolates or otherwise moves. (Ord. O2011-304 § 1 (Att. A))

13.10.630 Salmon conservation plan.

“Salmon conservation plan” means a plan and all implementing regulations and procedures including, but not limited to, land use management adopted by ordinance, capital projects, public education activities and enforcement programs for conservation and recovery of salmon within a water resource inventory area designated by the state under WAC 173-500-040. (Ord. O2011-304 § 1 (Att. A))

13.10.640 Shared facility.

“Shared facility” means a drainage facility designed to meet one or more of the requirements of Chapter 13.20 SMC for two or more separate projects contained within a basin. Shared facilities usually include shared financial commitments for those drainage facilities. (Ord. O2011-304 § 1 (Att. A))

13.10.650 Service area.

“Service area” means the incorporated City of Sammamish. (Ord. O2011-304 § 1 (Att. A))

13.10.655 Simplified drainage review.

“Simplified drainage review” means the drainage review for a proposed single family residential project or agricultural project that: results in less than 5,000 square feet of new plus replaced pollution generating impervious surface, results in less than ¼ acre of pollution generating pervious surface, limits target impervious and pervious surface as specified in the Surface Water Design Manual, and meets the simplified drainage requirements specified in Appendix C of the Surface Water Design Manual, including flow control best management practices, erosion and sediment control measures, and drainage plan submittal requirements.

13.10.660 Site.

“Site” means a single parcel, or two or more contiguous parcels that are under common ownership or documented legal control, used as a single parcel for a proposed project for purposes of applying for authority from the City of Sammamish to carry out a proposed project. For projects located primarily within dedicated rights-of-way, “site” includes the entire width of right-of-way subject to improvements proposed by the project. (Ord. O2011-304 § 1 (Att. A))

~~13.10.670 Small project drainage review.~~

~~“Small project drainage review” means the drainage review for a proposed single family residential project or agricultural project that:-~~

~~(1) Would result in:-~~

~~(a) Ten thousand square feet or less of total impervious surface added on or after January 8, 2001;-
or-~~

~~(b) Four percent or less of total impervious surface on a site as specified in the Surface Water Design Manual; and-~~

~~(2) Meets the small project drainage requirements specified in the Surface Water Design Manual, including flow control best management practices, erosion and sediment control measures and drainage plan submittal requirement; and-~~

~~(3) Limits new pervious surface as specified in the Surface Water Design Manual. (Ord. O2011-304 § 1 (Att. A))~~

13.10.680 Source control BMP.

“Source control BMP” means a BMP intended to prevent contaminants from entering surface and stormwater or groundwater including the modification of processes to eliminate the production or use of contaminants. “Source control BMPs” can be either structural or nonstructural. Structural source control BMPs involve the construction of a physical structure on site, or other type of physical modification to a site. An example of a structural source control BMP is building a covered storage area. A nonstructural source control BMP involves the modification or addition of managerial or behavioral practices. An example of a nonstructural source control BMP is using less toxic alternatives to current products or sweeping parking lots. (Ord. O2011-304 § 1 (Att. A))

13.10.690 State Waste Discharge Permit.

“State Waste Discharge Permit” means an authorization, license, or equivalent control document issued by the Washington State Department of Ecology in accordance with Chapter 173-216 WAC. (Ord. O2011-304 § 1 (Att. A))

13.10.700 Stormwater compliance plan.

“Stormwater compliance plan” means a plan or study and all regulations and procedures that have been adopted by the City to implement the plan or study, including, but not limited to, capital projects, public education activities and enforcement programs for managing stormwater quantity and quality discharged from the City’s municipal separate storm sewer system in compliance with the National Pollutant Discharge Elimination System permit program under the Clean Water Act. (Ord. O2011-304 § 1 (Att. A))

13.10.710 Stormwater plan.

“Stormwater plan” means a City of Sammamish ordinance specifying the stormwater control facilities that will be funded by a bond issue. (Ord. O2011-304 § 1 (Att. A))

13.10.720 Stormwater Pollution Prevention Manual.

“Stormwater Pollution Prevention Manual” means the manual adopted in accordance with Chapter 2.55 SMC, and supporting documentation referenced or incorporated in the manual, describing best management practices and procedures for existing facilities and existing and new activities not covered by the Surface Water Design Manual. (Ord. O2011-304 § 1 (Att. A))

13.10.730 Subbasin.

“Subbasin” means a geographic area that:

- (1) Drains to a stream or water body named and noted on common maps; and
- (2) Is contained within the basin of the stream or water body. (Ord. O2011-304 § 1 (Att. A))

13.10.740 Surface and stormwater.

“Surface and stormwater” means water originating from rainfall and other precipitation that is found on ground surfaces and in drainage facilities, rivers, streams, springs, seeps, ponds, lakes, wetlands, as well as shallow groundwater. (Ord. O2011-304 § 1 (Att. A))

13.10.750 Surface and stormwater management services.

“Surface and stormwater management services” means the services provided by the surface water management program, including but not limited to basin planning, facilities maintenance, regulation, financial administration, public involvement, drainage investigation and enforcement, aquatic resource restoration, surface and stormwater quality and environmental monitoring, natural surface water drainage system planning, intergovernmental relations and facility design and construction. (Ord. O2011-304 § 1 (Att. A))

13.10.760 Surface and stormwater management system.

“Surface and stormwater management system” means constructed drainage facilities and any natural surface water drainage features that do any combination of collection, storing, controlling, treating or conveying surface and stormwater. (Ord. O2011-304 § 1 (Att. A))

13.10.770 Surface Water Design Manual.

“Surface Water Design Manual” means the manual, and supporting documentation referenced or incorporated in the manual, describing surface and stormwater design and analysis requirements, procedures and guidance that has been formally adopted by rule under the procedures in Chapter 2.55 SMC. The Surface Water Design Manual is available from the department of public works or its successor agency. (Ord. O2011-304 § 1 (Att. A))

13.10.780 Surface water management fee protocols.

“Surface water management fee protocols” or “SWM fee protocols” means the surface water management fee standards and procedures that have been formally adopted by rule under the procedures specified in Chapter 2.55 SMC. The SWM fee protocols are available from the department of public works or its successor agency. (Ord. O2011-304 § 1 (Att. A))

13.10.790 Treatment BMP.

“Treatment BMP” means a BMP intended to remove contaminants once they are already contained in stormwater. Examples of treatment BMPs include oil/water separators, biofiltration swales and wetponds. (Ord. O2011-304 § 1 (Att. A))

13.10.800 Targeted drainage review.

“Targeted drainage review” means an abbreviated evaluation required by Chapter 13.20 SMC for certain types of proposed projects that are not subject to full or large project drainage review. Targeted drainage review may be required for some projects in ~~small-simplified project~~ drainage review. (Ord. O2011-304 § 1 (Att. A))

13.10.810 Undeveloped parcel.

“Undeveloped parcel” means any parcel which has not been altered from its natural state by the construction, creation or addition of impervious surface. (Ord. O2011-304 § 1 (Att. A))

13.10.820 Water quality ~~treatment~~ facility.

“Water quality ~~treatment~~ facility” means a drainage facility designed to mitigate the impacts of increased pollutants in stormwater runoff generated by site development. A water quality facility uses processes that include but are not limited to settling, filtration, adsorption, and absorption to decrease pollutant concentrations and loadings in stormwater runoff.~~means a drainage facility designed to reduce pollutants once they are already contained in surface and stormwater runoff. Water quality treatment facilities are the structural component of best management practices. When used singly or in combination, water quality treatment facilities reduce the potential for contamination of either surface or groundwaters, or both.~~ (Ord. O2011-304 § 1 (Att. A))

Chapter 13.20

SURFACE WATER RUNOFF REGULATIONS

Sections:

- 13.20.010 Purpose.
- 13.20.020 Drainage review – When required – Type.
- 13.20.030 Drainage review – Requirements.
- 13.20.040 Critical drainage and/or critical erosion areas.
- 13.20.050 Engineering plans for the purposes of drainage review.
- 13.20.060 Construction timing and final approval.
- 13.20.070 Liability insurance required.
- 13.20.080 Financial guarantees authorized.
- 13.20.090 Drainage facilities accepted by Sammamish for maintenance.
- 13.20.100 Drainage facilities not accepted by Sammamish for maintenance.
- 13.20.110 Hazards.
- 13.20.120 Administration.
- 13.20.130 Enforcement.
- 13.20.140 Implementation, review and revision.
- 13.20.150 Severability.

13.20.010 Purpose.

The purpose of this chapter is to promote the public health, safety and welfare by providing for the comprehensive management of surface and stormwaters and erosion control, especially that which preserves and utilizes the many values of the City's natural drainage system including open space, fish and wildlife habitat, recreation, and education. By conducting programs to reduce flooding, erosion, and sedimentation; prevent and mitigate habitat loss; enhance groundwater recharge; and prevent water quality degradation through the implementation of comprehensive and thorough permit review, construction inspection, enforcement, and maintenance, the effectiveness of the requirements contained in this chapter will be promoted. (Ord. O2011-304 § 1 (Att. A))

13.20.020 Drainage review – When required – Type.

(1) Drainage review is required when any proposed project is subject to a City of Sammamish development permit or approval and:

(a) Would result in 2,000 square feet or more of new impervious surface, replaced impervious surface or new plus replaced impervious surface; or

(a.1) Would result in 500 square feet or more of new impervious surface, replace impervious surface or new plus replaced impervious surface within an historic plat as defined and mapped in Attachment B at the end of this section; or

~~(a.2) Would result in 500 square feet or more of new impervious surface, replaced impervious surface, or new plus replaced impervious surface within a landslide hazard drainage area as defined in SMC 21A.50.260; or~~ [the adopted Sammamish Addendum to the Surface Water Design Manual.](#)

(b) Would involve 7,000 square feet or more of land disturbing activity; or

(c) Would construct or modify a drainage pipe or ditch that is 12 inches or more in size or depth or receives surface and stormwater runoff from a drainage pipe or ditch that is 12 inches or more in size or depth; or

(d) Contains or is adjacent to a flood hazard area as defined in SMC Title 15 or 21A; or

(e) Is located within a critical drainage area; or

(f) Is a redevelopment project proposing \$100,000 or more of improvements to an existing high-use site; or

(g) Is a redevelopment project on a site in which the total of new plus replaced impervious surface is 5,000 square feet or more and whose valuation of proposed improvements, including interior improvements and excluding required mitigation and frontage improvements, exceeds 50 percent of the assessed value of the existing site improvements.

(2) The drainage review for any proposed project shall be scaled to the scope of the project's size, type of development and potential for impacts to the regional surface water system to facilitate preparation and review of project applications. If drainage review for a proposed project is required under subsection (1) of this section, the City shall determine which of the following drainage reviews apply as specified in the Surface Water Design Manual:

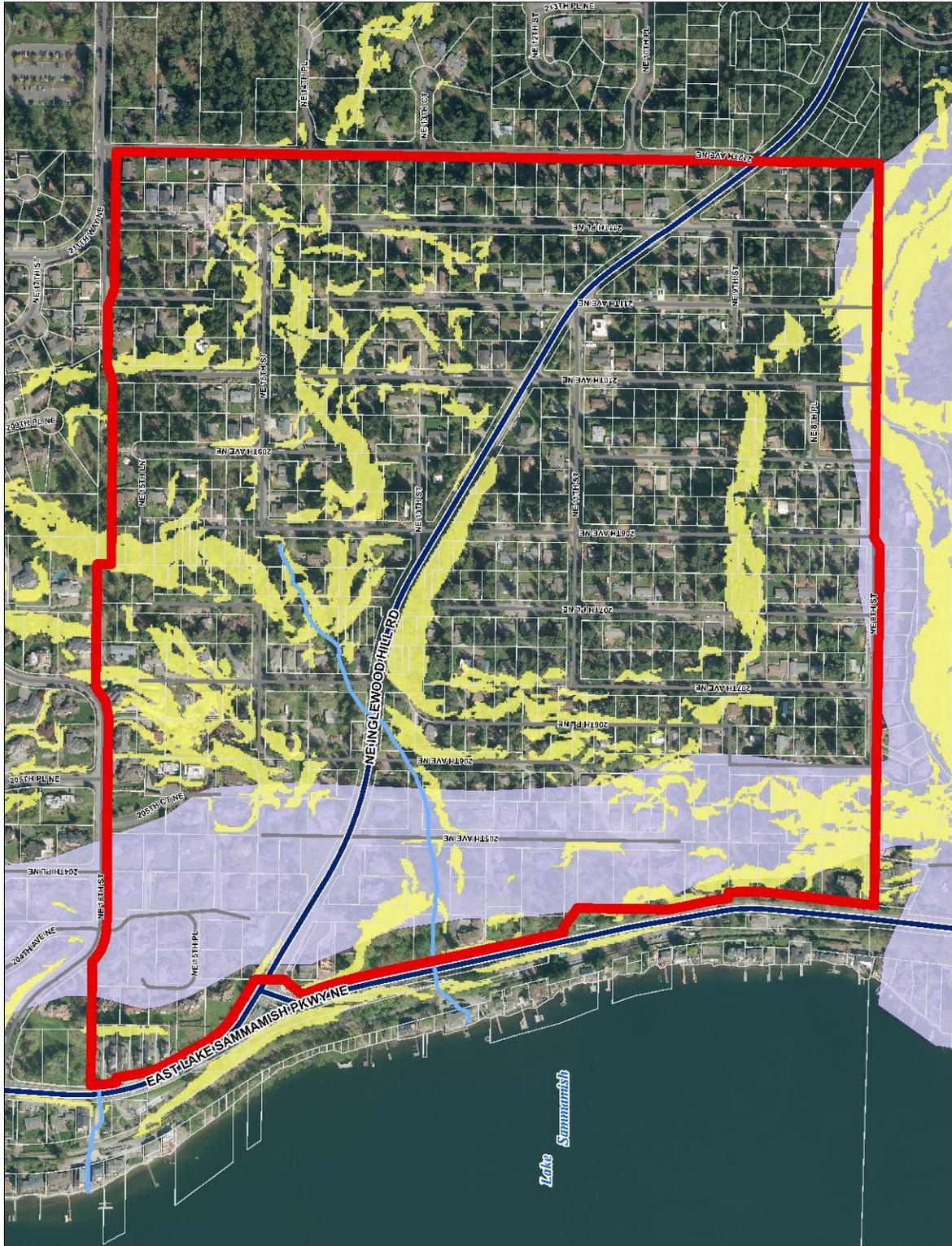
(a) ~~Small project~~Simplified drainage review;

(b) Targeted drainage review;

(c) Full drainage review; or

(d) Large project drainage review.

ATTACHMENT B



13.20.030 Drainage review – Requirements.

(1) A proposed project required to have drainage review by this chapter must meet each of the following core requirements which are described in detail in the Surface Water Design Manual. Projects subject only to ~~small projectsimplified~~ drainage review that meet the ~~small projectsimplified~~ drainage requirements specified in the Surface Water Design Manual, including flow control best management practices, erosion and sediment control measures and drainage plan submittal requirements are deemed to comply with the following core requirements:

(a) Core Requirement 1 – Discharge at the Natural Location. All surface and stormwater runoff from a project shall be discharged at the natural location so as not to be diverted onto, or away from, downstream properties. The manner in which runoff is discharged from the project site shall not create a significant adverse impact to downhill properties or drainage systems as specified in the discharge requirements of the Surface Water Design Manual;

(b) Core Requirement 2 – Off-Site Analysis. The initial application submittal for proposed projects shall include an off-site analysis report that assesses potential off-site drainage and water quality impacts associated with development of the proposed site and proposes appropriate mitigations to those impacts. This initial submittal shall include, at minimum, a level one downstream analysis as described in the Surface Water Design Manual. If impacts are identified, the proposed projects shall meet any applicable problem-specific requirements as specified in the Surface Water Design Manual;

(c) Core Requirement 3 – Flow Control. Proposed projects that would result in ~~25,000 square feet or more of new plus replaced~~ impervious surface or ~~35,000 square feet~~ $3/4$ acre or more of new pervious surface, ~~or that are redevelopment projects that would result in a total of 5,000 square feet or more of new and replaced impervious surface,~~ shall provide flow control facilities or flow control BMPs, or both, to control surface and stormwater runoff generated by new impervious surface, new pervious surface, replaced impervious surface and any existing impervious surface added on or after January 8, 2001, as specified in the Surface Water Design Manual. Flow control facilities shall meet the area-specific flow control facility requirements and the flow control facility implementation requirements applicable to the project site as specified in the Surface Water Design Manual. Flow control BMPs shall also be applied as specified in the Surface Water Design Manual. Projects subject to area-specific flow control facility requirements shall meet one of the flow control facility performance criteria listed in subsections (1)(c)(i) and (ii) of this section, as directed by the Surface Water Design Manual. The Inglewood, Thompson and Pine Lake Creek basins, and areas draining to the Beaver Lake basin, require level three flow control. The remainder of the City requires level two flow control unless downstream problems, as determined by the City of Sammamish, dictate the higher level of protection of level three flow control.

(i) Level two shall meet level one criteria and also match the predeveloped site's discharge durations for the predeveloped peak discharge rates between the 50 percent of the two-year peak flow through the 50-year peak flow; or

(ii) Level three shall meet level two criteria and also match the predeveloped site's peak discharge rate for the 100-year return period;

(d) Core Requirement 4 – Conveyance System. All engineered conveyance system elements for proposed projects shall be analyzed, designed and constructed to provide the minimum level of protection against overtopping, flooding, erosion and structural failure as specified by the

conveyance requirements for new and existing systems and conveyance implementation requirements described in the Surface Water Design Manual;

(e) Core Requirement 5 – Erosion and Sediment Control. All proposed projects that will clear, grade or otherwise disturb the site shall provide erosion and sediment control that prevents, to the maximum extent practicable, the transport of sediment from the site to drainage facilities, water resources and adjacent properties. Erosion and sediment controls shall be applied in accordance with SMC Title 16 as specified by the temporary erosion and sediment control measures and performance criteria and implementation requirements in the City of Sammamish Surface Water Design Manual;

(f) Core Requirement 6 – Maintenance and Operation. Maintenance of all drainage facilities in compliance with Sammamish maintenance standards is the responsibility of the applicant or property owner as described in the Surface Water Design Manual, except those facilities for which Sammamish assumes maintenance and operation as described in this chapter and the Surface Water Design Manual;

(g) Core Requirement 7 – Financial Guarantees and Liability. All drainage facilities constructed or modified for projects, except downspout infiltration and dispersion systems for single-family residential lots, must comply with the liability requirements of this chapter and the financial guarantee requirements of SMC Title 27A;

(h) Core Requirement 8 – Water Quality. Proposed projects that would result in 5,000 square feet or more of new plus replaced pollution generating impervious surface or ~~35,000-square-feet^{3/4} acre~~ or more of new pollution-generating pervious surface, ~~or that are redevelopment projects that would result in a total of 5,000-square-feet-or-more-of-new-and-replaced-pollution-generating-impervious-surface,~~ shall provide water quality treatment facilities to treat polluted surface and stormwater runoff generated by new or replaced pollution-generating impervious surface, new pollution-generating pervious surface and any existing pollution-generating impervious surface added on or after January 8, 2001, as specified in the Surface Water Design Manual. However, pervious surfaces are specifically excluded if there is a good faith agreement with the King Conservation District to implement a farm management plan for agricultural uses, and pervious areas for other uses are specifically excluded if the City of Sammamish approves a landscape management plan that controls pesticides and fertilizers leaving the site. Water quality treatment facilities shall meet the area-specific water quality treatment requirements and the water quality implementation requirements applicable to the project site as specified in the Surface Water Design Manual. The facilities specified by these requirements are designed to reduce pollutant loads according to the applicable annual average performance goals listed in subsections (1)(h)(i) through (iv) of this section for 95 percent of the annual average runoff volume:

(i) For basic water quality: remove 80 percent of the total suspended solids;

(ii) For enhanced basic water quality: remove 50 percent of the total zinc;

(iii) For sensitive lake protection: remove 50 percent of the total phosphorus; and

(iv) For sphagnum bog protection: remove 50 percent of the total phosphorus and 40 percent of the total nitrate plus nitrite. The discharge shall maintain a pH of less than 6.5 and an alkalinity of less than 10 milligrams per liter.

(i) Core Requirement 9 – Flow Control BMPs. Proposed projects that would result in 2,000 square feet or more of new plus replaced impervious surface or 7,000 square feet or more of land disturbing activity shall provide onsite flow control BMPs to mitigate the impacts of surface and stormwater runoff generated by new impervious surface, new pervious surface, existing impervious surfaces, and replaced impervious surface targeted for mitigation as specified in the Surface Water Design Manual.

(2) A proposed project required by this chapter to have drainage review shall meet any of the following special requirements which apply to the site and which are described in detail in the Surface Water Design Manual. The City shall verify if a proposed project is subject to and must meet any of the following special requirements.

(a) Special Requirement 1 – Other Adopted Area-Specific Requirements. If a proposed project is in a designated critical drainage area, or is in an area included in an adopted master drainage plan, basin plan, salmon conservation plan, stormwater compliance plan, flood hazard reduction plan, lake management plan or shared facility plan, then the proposed project shall meet the applicable drainage requirements of the critical drainage area, master drainage plan, basin plan, salmon conservation plan, stormwater compliance plan, flood hazard reduction plan, lake management plan or shared facility plan;

(b) Special Requirement 2 – Floodplain/Floodway Delineation. If a proposed project contains or is adjacent to a stream, lake, wetland or closed depression, or if other City regulations require study of flood hazards relating to the proposed project, the 100-year floodplain boundaries and floodway shall be determined and delineated on the site improvement plans and profiles and any final maps prepared for the proposed project. The flood hazard study shall be prepared for as specified in the Surface Water Design Manual;

(c) Special Requirement 3 – Flood Protection Facilities. If a proposed project contains or is adjacent to a stream that has an existing flood protection facility, such as a levee, revetment or berm, or proposes to either construct a new or modify an existing flood protection facility, then the flood protection facilities shall be analyzed and designed as specified in the Surface Water Design Manual to conform with the Federal Emergency Management Agency regulations as found in 44 C.F.R.;

(d) Special Requirement 4 – Source Control. If a proposed project requires a commercial building or commercial site development permit, then water quality source controls shall be applied to prevent rainfall and runoff from coming into contact with pollutants to the maximum extent practicable. Water quality source controls shall be applied in accordance with this chapter, the Stormwater Pollution Prevention Manual and the Surface Water Design Manual. All structural source controls shall be identified on the site improvement plans and profiles or final maps prepared for the proposed project; and

(e) Special Requirement 5 – Oil Control. If a proposed project is a high-use site or is a redevelopment project proposing \$100,000 or more of improvements to an existing high-use site, then oil control shall be applied to all runoff from the high-use portion of the site as specified in the Surface Water Design Manual.

(3)(a) An adjustment to the requirements contained in this section or other requirements in the Surface Water Design Manual may be proposed. The resulting development shall be subject to all of the remaining terms and conditions of this chapter and the adjustment shall:

- (i) Produce a compensating or comparable result in the public interest; and
- (ii) Meet this chapter's objectives of safety, function, appearance, environmental protection and maintainability based upon sound engineering judgment.

(b) If complying with subsection (3)(a)(i) of this section will deny all reasonable use of a property, the best practicable alternative shall be obtained as determined by the director according to the adjustment process defined in the Surface Water Design Manual.

(c) Requests for adjustments that may conflict with any other City requirement shall require review and concurrence by the applicable City department.

(d) A request for an adjustment is a Type 1 land use decision as provided for in SMC Title 20 and shall be processed in accordance with the procedures specified in the Surface Water Design Manual.

(e) The City may require monitoring of experimental designs and technology or untested applications proposed by the applicant in order to determine compliance with subsection (3)(a) of this section and the approved plans and conditions.

(f) An adjustment decision may be appealed by following the appeal procedures as specified in the Surface Water Design Manual. (Ord. O2011-304 § 1 (Att. A))

13.20.040 Critical drainage and/or critical erosion areas.

Development in areas where the department has determined that the existing flooding, drainage and/or erosion conditions present an imminent likelihood of harm to the welfare and safety of the surrounding community shall meet special drainage requirements set by the director until such time as the community hazard is alleviated. Such conditions may include the limitation of the volume of discharge from the subject property to predevelopment levels, preservation of wetlands or other natural drainage features or other controls necessary to protect against community hazard. Where alternate facility designs or methods will produce a compensating or comparable result in the public interest and which will meet this section's objectives of safety, function, appearance, environmental protection and maintainability, based upon sound engineering judgment, an adjustment to the special drainage requirements promulgated under this section may be proposed; provided, that the resulting development shall be subject to all of the remaining terms and conditions of this chapter. Where application of this section will deny all reasonable use of a property and a facility or design that produces a compensating or comparable result cannot be obtained, then a best practicable alternative may be approved by the director according to the adjustment process defined in the Surface Water Design Manual. These standards are in addition to the applicable standards of Chapter 21A.50 SMC. (Ord. O2011-304 § 1 (Att. A))

13.20.050 Engineering plans for the purposes of drainage review.

(1) These requirements are in addition to the submittal requirements established by Chapter 20.05 SMC.

(a) All engineering plans shall be submitted to the City for review in accordance with the Surface Water Design Manual except those drainage plans developed by, or under the review of, the City of Sammamish department of public works for either surface and stormwater capital improvement, repair, maintenance or restoration projects or other linear government agency projects, such as roadways, railways, pipelines, utility lines and trails.

(b) If engineering plans are returned for any reason, they shall be returned to the applicant.

(c) All master drainage plans, if required, shall be submitted to the City for review in accordance with the specifications in the Surface Water Design Manual. The master drainage plan process should commence at the same time as the State Environmental Policy Act (SEPA) process.

(d) Drainage plans not subject to review by the City under subsection (1)(a) of this section shall be reviewed by the department of public works in accordance with this chapter. Project applicability and compliance with this chapter shall be documented in writing and available for review.

(2) The expiration time frames as specified in the Surface Water Design Manual shall apply to all permit and approval applications.

(3) All plans shall be processed in accordance with the review procedures specified in the Surface Water Design Manual.

(4) Submittal procedures, definitions and specifications for the required contents of engineering plans are presented in the Surface Water Design Manual. (Ord. O2011-304 § 1 (Att. A))

13.20.060 Construction timing and final approval.

(1) No work related to permanent or temporary storm drainage control for a permitted development may proceed without the approval of the director.

(2) Erosion and sediment control measures associated with both the interim and permanent drainage systems shall be:

(a) Constructed in accordance with the approved plan prior to any grading or land clearing other than that associated with an approved erosion and sediment control plan; and

(b) Satisfactorily sequenced and maintained until all improvements, restoration, and landscaping associated with the permit and approvals for the project are completed and the potential for on-site erosion has passed.

(3) The applicant shall have constructed and have in operation those portions of the drainage facilities necessary to accommodate the control of surface and stormwater runoff discharging from the site before the construction of any other improvements or buildings on the site, or in accordance with SMC Title 19A. (Ord. O2011-304 § 1 (Att. A))

13.20.070 Liability insurance required.

The applicant required to construct the drainage facility pursuant to this chapter shall maintain a combined single limit per occurrence liability policy in the amount established annually by the City, which shall name City as an additional insured and protect the City from liability relating to the construction or maintenance of the facility until construction approval or acceptance for maintenance, whichever is last. Proof of this required liability policy shall be provided to the director prior to commencing construction of any drainage facility. If this liability insurance is not kept in effect as required, the City may initiate enforcement action pursuant to SMC Title 23. (Ord. O2011-304 § 1 (Att. A))

13.20.080 Financial guarantees authorized.

The City is authorized to require all applicants issued permits or approvals under the provisions of this title to post financial guarantees consistent with the provisions of SMC Title 27A. (Ord. O2011-304 § 1 (Att. A))

13.20.090 Drainage facilities accepted by Sammamish for maintenance.

(1) The City is responsible for the maintenance, including performance and operation, of drainage facilities which have formally been accepted for maintenance by the director.

(2) The City may assume maintenance of privately maintained drainage facilities only if the following conditions have been met:

(a) All necessary easements or dedications entitling the City to properly maintain the drainage facility have been conveyed to the City;

(b) The director has determined that the facility is in the dedicated public road right-of-way or that maintenance of the facility will contribute to protecting or improving the health, safety and welfare of the community based upon review of the existence of or potential for:

(i) Flooding,

(ii) Downstream erosion,

(iii) Property damage due to improper function of the facility,

(iv) Safety hazard associated with the facility,

(v) Degradation of water quality or in-stream resources, or

(vi) Degradation to the general welfare of the community; and

(c) The director has declared in writing acceptance of maintenance responsibility by the City. Copies of this document will be kept on file in the department of public works.

(3) The director may terminate the department's assumption of maintenance responsibilities in writing after determining that continued maintenance will not significantly contribute to protecting or improving the health, safety and welfare of the community based upon review of the existence of or potential for:

(a) Flooding;

(b) Downstream erosion;

(c) Property damage due to improper function of the facility;

(d) Safety hazard associated with the facility;

(e) Degradation of water quality or in-stream resources; or

(f) Degradation to the general welfare of the community.

Copies of this document will be kept on file in the department of public works.

(4) A drainage facility which does not meet the criteria of this section shall remain the responsibility of the applicant required to construct the facility and persons holding title to the property for which the facility was required. (Ord. O2011-304 § 1 (Att. A))

13.20.100 Drainage facilities not accepted by Sammamish for maintenance.

(1) The person or persons holding title to the property and the applicant required to construct a drainage facility shall remain responsible for the facility's continual performance, operation and maintenance in accordance with the standards and requirements of the department and remain responsible for any liability as a result of these duties. This responsibility includes maintenance of a drainage facility which is:

- (a) Under a maintenance guarantee or defect guarantee;
- (b) A private road conveyance system;
- (c) Released from all required financial guarantees prior to July 7, 1980;
- (d) Located within and serving only one single-family residential lot;
- (e) Located within and serving a multifamily or commercial site unless the facility is part of an approved shared facility plan;
- (f) Located within or associated with a short subdivision or subdivision which handles runoff from an area of which less than two-thirds is designated for detached or townhouse dwelling units located on individual lots unless the facility is part of an approved shared facility plan;
- (g) Previously terminated for assumption of maintenance responsibilities by the department in accordance with this chapter; or
- (h) Not otherwise accepted by the City for maintenance.

(2) Prior to the issuance of any of the permits for any multifamily or commercial project required to have a flow control or water quality treatment facility, the applicant shall record a declaration of covenant as specified in the Surface Water Design Manual. The restrictions set forth in such covenant shall include, but not be limited to, provisions for notice to the persons holding title to the property of a City determination that maintenance and/or repairs are necessary to the facility and a reasonable time limit in which such work is to be completed.

(a) In the event that the titleholders do not effect such maintenance and/or repairs, the City may perform such work upon due notice. The titleholders are required to reimburse the City for any such work. The restrictions set forth in such covenant shall be included in any instrument of conveyance of the subject property and shall be recorded with the records and licensing services division of King County.

(b) The City may enforce the restrictions set forth in the declaration of covenant provided in the Surface Water Design Manual.

(3) Prior to the issuance of any of the permits and/or approvals for the project or the release of financial guarantees posted to guarantee satisfactory completion, the person or persons holding title to the subject property for which a drainage facility was required shall pay a fee established by the director as set forth in the City resolution to reasonably compensate the City for costs relating to inspection of the

facility to ensure that it has been constructed according to plan and applicable specifications and standards.

(4) The duties specified in this section with regard to payment of inspection fees and reimbursement of maintenance costs shall be enforced against the person or persons holding title to the property for which the drainage facility was required.

(5) Where not specifically defined in this section, the responsibility for performance, operation and maintenance of drainage facilities and conveyance systems, both natural and constructed, shall be determined on a case-by-case basis. (Ord. O2011-304 § 1 (Att. A))

13.20.110 Hazards.

Whenever the director determines that any existing construction site, erosion and sedimentation problem and/or drainage facility poses a hazard to life and limb, endangers any property, and/or adversely affects the condition or capacity of other drainage facilities, the safety and operation of City right-of-way, utilities, and/or other property owned or maintained by the City, the applicant/person to whom the permit was issued pursuant to this chapter, the owner of the property within which the drainage facility is located, the applicant/person responsible for maintenance of the facility, and/or other person or agent in control of said property, upon receipt of notice in writing from the director shall within the period specified therein repair or otherwise address the cause of the hazardous situation in conformance with the requirements of this chapter.

Should the director have reasonable cause to believe that the situation is so adverse as to preclude written notice, the director may take the measures necessary to eliminate the hazardous situation; provided, that the director shall first make a reasonable effort to locate the owner before acting. In such instances the applicant of whom a drainage plan was required pursuant to this chapter, the owner of the property and/or the person responsible for the maintenance of the facility shall be obligated for the payment of all costs incurred. If costs are incurred and a financial guarantee pursuant to this chapter or other City requirement has been posted, the director shall have the authority to collect against the financial guarantee to cover costs incurred. (Ord. O2011-304 § 1 (Att. A))

13.20.120 Administration.

(1) Administration.

(a) The director is authorized to promulgate and adopt administrative rules under the procedures specified in Chapter 2.55 SMC, for the purpose of implementing and enforcing the provisions of this chapter. Adopted administrative rules are available to the public from the department of public works. This includes, but is not limited to, the Surface Water Design Manual.

(b) The director is authorized to develop procedures for applying adopted rules and regulations during the review of permit applications for the development of land. These procedures may also be contained in the Surface Water Design Manual.

(2) Inspections. The director is authorized to make such inspections and take such actions as may be required to enforce the provisions of this chapter.

(3) Right of Entry. Whenever necessary to make an inspection to enforce any of the provisions of this chapter, monitor for proper function of drainage facilities or whenever the director has reasonable cause to believe that violations of this chapter are present or operating on a subject property or portion thereof, the director may enter such premises at all reasonable times to inspect the same or perform

any duty imposed upon the director by this chapter; provided, that if such premises or portion thereof is occupied, the director shall first make a reasonable effort to locate the owner or other person having charge or control of the premises or portion thereof and demand entry.

(4) Access. Proper ingress and egress shall be provided to the director to inspect, monitor or perform any duty imposed upon the director by this chapter. The director shall notify the responsible party in writing of failure to comply with this access requirement. Failing to obtain a response within seven days from the receipt of notification, the director may order the work required completed or otherwise address the cause of improper access. The obligation for the payment of all costs that may be incurred or expended by the City in causing such work to be done shall thereby be imposed on the person holding title to the subject property. (Ord. O2011-304 § 1 (Att. A))

13.20.130 Enforcement.

The City is authorized to enforce the provisions of this chapter, the ordinances and resolutions codified in it, and any rules and regulations promulgated thereunder pursuant to the enforcement and penalty provisions of SMC Title 23. (Ord. O2011-304 § 1 (Att. A))

13.20.140 Implementation, review and revision.

The department may administer a training program for users of the Surface Water Design Manual. The department may also conduct an ongoing research program to evaluate the effectiveness of the requirements in meeting the purpose of this chapter. This research program may examine, but not be limited to, hydrologic and hydraulic analysis methods, stream geomorphologic analysis methods, water quality, best management practices and erosion and sediment control measures. (Ord. O2011-304 § 1 (Att. A))

13.20.150 Severability.

If any provision of this chapter or its application to any person or property is held invalid, the remainder of the chapter or the application of the provision to other persons or property shall not be affected. (Ord. O2011-304 § 1 (Att. A))

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Summary proposed through September 15, 2016

"Normal Text" is existing Addendum language

~~"Strikethrough Text"~~ is existing Addendum language that will be deleted

"Underline Text" is draft Addendum language that will be added

"..." indicates that there is additional Addendum language that has been omitted

#	Commenter	Page	Addendum Draft Language	Comments
1	Planning Commissioner Larry Crandall	Page 2	<p>Preface</p> <p>Purpose of and Need for the Addendum</p> <p>Rationale: N/A</p>	<p>Commissioner Crandall Comment: Pg. 2, second full paragraph, first sentence: change "and be consistent with the City codes" to "and be consistent with the City's codes"</p> <p>Staff Response: N/A</p> <p>Staff Recommended Draft Language: The purpose of this Addendum is to tailor the <u>2016</u> KCSWDM to meet the unique conditions within the City, and be consistent with the City's codes, organization and processes.</p>

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#	Commenter	Page	Addendum Draft Language	Comments
2	Planning Commissioner Larry Crandall	Page 4	Chapter 1 – Drainage Review and Requirements City Equivalentents for County Ordinances <i>Rationale:</i> N/A	Commissioner Crandall Comment: Why was “BUILDING AND CONSTRUCTION STANDARDS” changed to “Clearing and Grading”? Staff Response: For consistency with the King County Code. Staff Recommended Draft Language: No changes.
3	Technical Stakeholder Committee (TSC)	Page 5/6	Chapter 1 – Drainage Review and Requirements City Equivalentents for County Ordinances Erosion Hazard Near Sensitive Water Bodies Overlay <i>Rationale:</i> Erosion Hazard Near Sensitive Water Body Overlay definition was removed from King County Manual due to being annexed into the City. Including City code reference into Addendum for definition of overlay.	TSC Comment: The Erosion Hazard Overlay District – this should be addressed in the addendum as it was pulled out of the King County Manual when the City incorporated. Staff Response: Including a reference to the Sammamish Municipal Code that regulates the Erosion Hazard Near Sensitive Water Body Overlay District. Staff Recommended Draft Language:

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#	Commenter	Page	Addendum Draft Language	Comments
				<p>21A.50.220 Erosion hazard areas – Development standards and permitted alterations.</p> <p>21A.50.225 Erosion hazards near sensitive water bodies – Special district overlay.</p> <p>21A.15.415 Definition <u>Erosion hazard areas</u></p> <p>21A.15.417 Definition <u>Erosion hazard near sensitive water body overlay</u></p>
4	<p>Public Comment Ilene Stahl</p> <p>Public Comment Mary Wictor</p>	Page 6	<p>Chapter 1 – Drainage Review and Requirements City Equivalent for County Maps</p> <p>Rationale: N/A</p>	<p>Stahl Public Comment: The maps look old, and do not include any of the commercial development that has occurred in the town center.</p> <p>Wictor Public Comment: New maps have come out of the Erosion Hazard Overlay and the Landslide Hazard area. There are places where these overlap. The Tamarack neighborhood has areas above it that drain to it, but these are not considered erosion hazard or</p>

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				<p>landslide hazard areas so there isn't a drainage review. The new landslide hazard drainage area, though, needs to be mapped above Tamarack so this triggers drainage review. This is the right start but we also need to look at whether targeted drainage review is the appropriate review. The map also needs to be changed to include this area as an area that drains to a landslide hazard area.</p> <p>Staff Response: The definition of "landslide hazard drainage area" is intended to be site specific, and defined similar to how critical areas are defined. Those areas that drain to areas that meet the definition of landslide hazard areas will trigger review with the addition of 500sf or more of new impervious surface.</p> <p>Staff Recommended Draft Language: The Addendum reflects a new definition of Landslide Hazard Drainage Areas as follows: "<i>Landslide hazard drainage area</i>" are areas</p>
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				<p><i>where overland flows pose a significant threat to health and safety because of their close proximity to a landslide hazard area as defined by SMC 21A.15.680. Mapped landslide hazard drainage areas are approximate. Public Works may determine that areas not mapped as landslide hazard drainage areas may meet this definition.</i></p>
5	<p>Technical Stakeholder Committee (TSC)</p> <p>Planning Commission Chair Frank Blau</p> <p>Public Comment Mary Wictor</p> <p>Public Comment Paul Stickney</p>	Page 9	<p>Chapter 1 – Drainage Review and Requirements Projects Requiring Drainage Review</p> <p>Rationale: Projects located in a landslide hazard drainage area that will result in 500 sf of new impervious, not 2,000 sf, will now require drainage review.</p>	<p>TSC Comment: Can there be a simplified downstream analysis that is done to determine if a site is mapped as a landslide hazard drainage area but may not actually drain to a landslide hazard area? What if you have a large parcel where only a portion of it drains to a landslide hazard area? What about vacant lots that already have stormwater controls due to platting?</p> <p>Chair Blau Comment: Are the landslide hazard drainage areas mapped? Are there survey lines</p>

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				<p>to ensure that someone doesn't try to say that they are outside of it?</p> <p>Wictor Public Comment: If you're doing a driveway and repaving, you don't need to do water quality treatment? What if it slopes a different way, though, and changes the path of the runoff?</p> <p>Stickney Public Comment: Does upgrading to a stamped concrete driveway trigger drainage requirements?</p> <p>Staff Response: The approximate locations of Landslide Hazard Drainage Areas have been mapped; however, site specific information will be used to determine if the development meets the definition of Landslide Hazard Drainage Areas. "Project site" is defined as "that portion of a site and any offsite areas subject to proposed project activities, alterations, and improvements including those required by this manual."</p>
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#	Commenter	Page	Addendum Draft Language	Comments
				<p>The definition of replaced impervious surface is defined and maintenance exemptions are identified.</p> <p>Staff Recommended Draft Language: No changes.</p>
6	<p>Planning Commissioner Larry Crandall</p> <p>Planning Commission Chair Frank Blau</p>	Page 11	<p>Chapter 1 – Drainage Review and Requirements Impaired Water Body Table</p> <p>Rationale: N/A</p>	<p>Commissioner Crandall Comment: Why is Laughing Jacobs Creek listed, but not Laughing Jacobs Lake?</p> <p>Chair Blau Comment: Was the Klahanie area considered for development of this list?</p> <p>Staff Comment: The list was created by the Department of Ecology and the state of impaired water bodies was considered statewide, including the Klahanie area. The most recent 303d list does not include Pine Lake as a phosphorus impaired water body which is a sign that the development practices we have implemented in the past may be</p>

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#	Commenter	Page	Addendum Draft Language	Comments
				<p>working. However, Staff recommends keeping Pine Lake as a phosphorus sensitive lake consistent with the 2016 Storm and Surface Water Management Comprehensive Plan recommendations.</p> <p>Staff Recommended Draft Language: No changes</p>
7	Public Comment Mary Wictor	Page 14 of 2009 KCSWDM Addendum	<p>Chapter 1 – Drainage Review and Requirements Soil Amendment Requirement</p> <p>Rationale: N/A</p>	<p>Wictor Public Comment: Soil quality and depth information removed. Soils and compaction standards are important when you are preserving drainage.</p> <p>Staff Response: This information is provided in the 2016 KCSWDM and was removed because it does not need to be repeated in the Addendum as Sammamish is not revised this from the standard.</p> <p>Staff Recommended Draft Language: No changes.</p>

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#	Commenter	Page	Addendum Draft Language	Comments
8	<p>Technical Stakeholder Committee (TSC)</p> <p>Planning Commissioner Nancy Anderson</p> <p>Public Comment Mary Wictor</p>	<p>Formerly Page 16/17 of Draft 2016 KCSWDM Addendum</p>	<p>Chapter 1 – Drainage Review and Requirements Exemptions from Core Requirements In Lieu of Payment Exemption</p> <p>Rationale: When a regional facility program is in place, allow developers to pay a “fee-in-lieu” to contribute to the system.</p>	<p>TSC Comment: Are the operation and maintenance costs included in the fee-in-lieu, or are these still covered by the stormwater impact fee?</p> <p>Commissioner Anderson Comment: Does the City have a regional facility program? What would this entail? Is this a solution to a problem, or why are we considering this? Is it putting the cart before the horse, could we amend the Addendum in the future when we have this program?</p> <p>Wictor Public Comment: The fee-in-lieu is a good idea for regional facilities, but if you pay into this, though, and it doesn’t get built, how is the stormwater for this managed? Is there a latecomers agreement?</p> <p>Staff Response: The fee-in-lieu would cover all property acquisition, design, permitting, and construction costs, the</p>

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				<p>stormwater impact fee would likely cover operation and maintenance. This is something the City is just starting to explore. The idea is to reduce the number of stormwater facilities in the City and give developers options for paying into a stormwater facility and not require them to create their own facilities. This could be useful for the Town Center. The City may amend Title 13 once a regional facility program has been established.</p> <p>Staff Recommended Draft Language: Removing the proposed fee-in-lieu language from the Addendum until a regional facility program is established.</p> <ul style="list-style-type: none"> ● <u>In Lieu of Payment Exemption</u> <ul style="list-style-type: none"> ○ <u>In lieu of constructing stormwater flow control facilities and at the discretion of the director, applicants may pay a fee to the City of Sammamish. The payment will offset construction of City</u>
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				<p>owned and maintained regional stormwater facilities. Program requirements, fees, and feasibility criteria are maintained by the Public Works Department.</p>
9	<p>Technical Stakeholder Committee (TSC)</p> <p>Planning Commissioner Eric Brooks</p> <p>Planning Commission Chair Frank Blau</p>	Page 12	<p>Chapter 1 – Drainage Review and Requirements</p> <p>Exemptions from Core Requirements</p> <p>Maintenance Exemption</p> <p>Rationale: Clarifying what is routine maintenance and exempt from drainage review. Clarifying the definition of a replaced impervious surface such that it is clear when drainage review is triggered, and replacing an impervious surface without impacting the base course is exempt.</p>	<p>TSC Comment: Is pipe trenching maintenance?</p> <p>Commissioner Brooks Comment: What about concrete driveways?</p> <p>Chair Blau Comment: Or change the square footage?</p> <p>Staff Response: As long as you do not impact the base course, these are exempt. Yes, but we are talking about replaced only, not new impervious.</p> <p>Staff Recommended Draft Language: No changes.</p>

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#	Commenter	Page	Addendum Draft Language	Comments
10	<p>Technical Stakeholder Committee (TSC)</p> <p>Planning Commission Chair Frank Blau</p> <p>Planning Commissioner Nancy Anderson</p> <p>Planning Commissioner Eric Brooks</p> <p>Planning Commissioner Shanna Collins</p> <p>Planning Commissioner Larry Crandall</p> <p>Public Comment Mary Wictor</p>	<p>Formerly Page 18 of Draft 2016 KCSWDM Addendum</p>	<p>Chapter 1 – Drainage Review and Requirements Flow Control BMP Facility Sizing Credits</p> <p>Rationale: 2016 KCSWDM allows designers to model LID BMP area as 90% impervious and 10% pervious, reduces size of detention facility required.</p>	<p>TSC Comment: Individual lot BMPs – if they are placed into a tract, do they still get credit for facility sizing? What about joint driveways with permeable pavement? Some of the BMPs don't require maintenance or inspection of the BMP on an ongoing basis.</p> <p>Chair Blau Comment: How is the credit given? Is there a model or software that determines how much detention you must provide? Would we consider a bond for LID facilities to ensure they are put in place correctly? Not opposed to the credits entirely, but need to be limited to infiltration and dispersion and only if you bond and they are correctly installed. Who is on the hook for the LID BMPs that fail after a few years? If they are required to do this anyway, why do we give a credit for it? The backyard habitat program could be a model for educating homeowners</p>

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#	Commenter	Page	Addendum Draft Language	Comments
	Department of Ecology			<p>about incorporating LID into their property.</p> <p>Commissioner Anderson Comment: What are the pros and cons to having the city inspect vs. having the homeowner do the inspection themselves? Will the public education relate to redevelopment? Homes are aging, if there is reconstruction of a home, are we reaching out to get them to incorporate LID?</p> <p>Commissioner Brooks Comment: What if the LID BMPs, being dispersed throughout the site, fail? What is the failsafe if they fail, where does the stormwater go? Education of these facilities could help to encourage property owners to take care of their own facilities.</p> <p>Commissioner Collins Comment: Inspections are important. If we need more staff to ensure these facilities are actually working, then we should</p>

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				<p>consider that. Should we provide partial credit for all LID BMPs?</p> <p>Commissioner Crandall Comment: Maybe the stakeholders will all see the stormwater requirements are, and manage their stormwater correctly . The idea is that this is our land, and we need to manage our stormwater correctly.</p> <p>Wictor Public Comment: What if someone infiltrates 100% to not build a detention pond, but it doesn't work? These systems don't start failing until 5, 6, 7 years down the line. LID Covenants should be recorded on the title.</p> <p>Staff Response: The City is wary of giving credit for BMPs such as reduced building footprint, etc. because it might mean lots would need to be inspected annually to ensure no additional impervious surfaces were added. The model is a piece of software, the WWHM. The City would need</p>
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				<p>additional staff to do the inspections, but the biggest issue is the ongoing maintenance and ensuring that the maintenance is actually getting done. A covenant would be recorded that requires maintenance, but enforcing would be difficult. This would likely be covered by our other bonding mechanisms. The LID BMPS would be connected to the system, so the overflow would go to the pond. If an LID BMP fails, the City would likely get a call that there is stormwater on the property and would go out to maintain. There are covenants in place so that the City can inspect and ensure long term maintenance. You can actually provide full infiltration on a development site as a flow control facility. A large infiltration pond would meet your flow control requirements; you wouldn't need to provide a detention pond.</p> <p>Department of Ecology Comment: Eliminating these credits may be a work-around of the NPDES permit requirements. The credits should be</p>
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				<p>allowed as specified in the King County SWDM.</p> <p>Staff Recommended Draft Language: Staff proposes allowing the credits as stated in the KCSWDM. As such, the following proposed code language will be stricken:</p> <ul style="list-style-type: none"> • Table 1.2.9.A FLOW CONTROL BMP FACILITY SIZING CREDITS (page 1 95 of the 2016 KCSWDM) <ul style="list-style-type: none"> ○ Add fourth footnote, Note (4): These credits do not apply to subdivision implementation of BMPs on individual lots. • Section 1.2.9.4.1 USE OF CREDITS BY SUBDIVISION PROJECTS (page 1 97 of the 2016 KCSWDM) <ul style="list-style-type: none"> ○ Replace C. Subdivision Implementation of BMPs on Individual Lots in entirety as follows: These are flow control BMPs installed on a subdivision's proposed
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				<p>lots as part of the subdivision project. For example, the subdivision developer may elect to pre-install some or all of the flow control BMPs required by the individual lot BMP requirements in Section 1.2.9.2.</p> <p>1. Credits are not allowed.</p> <p>○ Replace D. Subdivision Future Implementation of BMPs on Individual Lots in entirety as follows: These are flow control BMPs stipulated to be installed on some or all of a subdivision's proposed lots by a declaration of covenant recorded for each such lot.</p> <p>1. Credits are not allowed.</p>

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#	Commenter	Page	Addendum Draft Language	Comments
11	N/A	Page 14	<p>Chapter 2 – Drainage Plan Submittal Special Inspection of LID BMPs</p> <p>Rationale: Require a special inspector to ensure LID BMPs are constructed correctly.</p>	<p>Comment: N/A</p> <p>Staff Response: N/A</p> <p>Staff Recommended Draft Language: No changes.</p>
12	Public Comment Mary Wictor	Page 16	<p>Chapter 4 – Conveyance System Analysis and Design</p> <p>Rationale: N/A</p>	<p>Wictor Public Comment: 0.05% minimum slope for pipe flow?</p> <p>Staff Response: This was a typo and should have been 0.5%.</p> <p>Staff Recommended Draft Language: Minimum pipe slope <u>0.5%</u></p>
13	Public Comment Mary Wictor	Page 18	<p>Chapter 5 – Flow Control Design</p> <p>Rationale: N/A</p>	<p>Wictor Public Comment: Basic flow control standard level 1 is possible – everything that flows to</p>

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				<p>Lake Sammamish should be level 2 so why include?</p> <p>Staff Response: The 2016 KCSWDM allows for Level 1 flow control to be used when discharging to Lake Sammamish when there is a closed conveyance system. Level 1 flow control sets the peaks for the 2 and 10 year storms so the conveyance system is not inundated.</p> <p>Staff Recommended Draft Language: No changes.</p>
14	Technical Stakeholder Committee (TSC)	Page 18	<p>Chapter 5 – Flow Control Design Criteria, Side Slopes</p> <p>Rationale: To create natural appearing ponds with gentle side slopes suitable for passive recreation.</p>	<p>TSC Comment: This type of design criteria will be hard to accommodate in a smaller development with a smaller pond, will be forced to use a vault. If you have an interior wall in a pond, require gentle slopes outside and landscaping that makes it appear natural. Does the split rail fence meet building code requirements for fall protection? What types of concrete walls may be</p>

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				<p>used? Redirock, stamped concrete, etc.?</p> <p>Staff Response: Added an "intent statement" for ponds to appear like natural ponds that provides more flexibility. 25% of the pond perimeter may be steeper than 3H:1V.</p> <p>Staff Recommended Draft Language: Numerical standards have been clarified on page 18 and 19 of Sammamish Addendum.</p>
15	Technical Stakeholder Committee (TSC)	Page 19	<p>Chapter 5 – Flow Control Design Criteria, Embankments</p> <p>Rationale: To minimize impacts from pond embankments located adjacent to property lines.</p>	<p>TSC Comment: How can deviations from the height limit be processed? What if you have a steep slope and have to go higher than 6'?</p> <p>Staff Response: Revising to be less restrictive and provide mitigation measures for pond</p>

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				<p>embankments that must be higher than 6'.</p> <p>Staff Recommended Draft Language:</p> <p><u>1) Pond berm embankments higher than 6 feet shall require design by a geotechnical engineer. Pond embankments adjacent to property lines shall be no higher than 6 feet, unless mitigated and approved by the Director. The embankment height measurement includes the freeboard and is measured from the toe of the slope of the top of the embankment. Mitigation measures for exceeding the 6 foot height restriction for berms adjacent to property lines may include:</u></p> <ul style="list-style-type: none"> • <u>Designed and analyzed by a geotechnical engineer or licensed structural engineer</u> • <u>The toe of embankment slope shall be setback at least 10 feet from the property line</u> • <u>10-ft of Type I landscaping shall be provided between toe of berm and property line to provide landscape screening.</u>
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16	<p>Planning Commissioner Larry Crandall</p> <p>Public Comment Mary Wictor</p>	Page 19	<p>Chapter 5 – Flow Control Design Criteria, Landscaping</p> <p>Rationale: Ensure ponds and vaults are more aesthetically pleasing and contribute to the community character.</p>	<p>Commissioner Crandall Comment: Lists of plants which are not recommended or are disallowed should be included, specifically non-native or invasive plants such as blackberries.</p> <p>Wictor Public Comment: Curvilinear is good, also native plantings. Views are important of mountains. Trails should provide connections to areas where you have views.</p> <p>Staff Response: We have a list of allowed plants that are not invasive.</p> <p>Staff Recommended Draft Language: No changes.</p>
17	<p>Technical Stakeholder Committee (TSC)</p>	Page 22	<p>Chapter 5 – Flow Control Design Design Criteria, Detention Ponds in Recreational Tracts</p> <p>Rationale: Provide credits towards recreation requirements for stormwater tracts that meet certain aesthetic criteria.</p>	<p>TSC Comment: Land is a resource, if you want aesthetically designed ponds, 100% credit should be provided, otherwise you will get a vault with a tot lot on top which takes up significantly less</p>

Proposed Sammamish Specific Requirements for Inclusion in the City's Addendum to the 2016 King County Surface Water Design Manual

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	Planning Commission Chair Frank Blau Planning Commissioner Shanna Collins Public Comment Mary Wictor Public Comment Ilene Stahl			<p>space. Also concerned about safety, if pond is to be used for recreation, should be fenced.</p> <p>Chair Blau Comment: What is a tot lot?</p> <p>Commissioner Collins Comment: Not in favor of having play facilities near a stormwater facility.</p> <p>Wictor Public Comment: Having places to recreate in developments is important, should have in addition to stormwater pond. Wildlife friendly fencing should be required so that animals can get through.</p> <p>Stahl Public Comment: To give incentives to developers not to provide recreation areas in return for</p>

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				<p>aesthetic ponds that may give them an extra lot is in contrast with LID.</p> <p>Staff Response: Options for 100% recreational credit for a pond are provided when the pond is designed to a higher aesthetic level. A tot lot is included in residential developments not located within a certain distance from other City parks. The play facilities don't need to be located near the stormwater pond, and we are including language to require fencing pond slopes.</p> <p>Staff Recommended Draft Language: No changes.</p>
18	<p>Public Comment Mary Wictor</p> <p>Planning Commission Chair Frank Blau</p>	N/A	<p>Planting on Steep Slopes</p> <p>Rationale: N/A</p>	<p>Wictor Public Comment: Bellevue has some good planting examples for planting on steep slopes.</p> <p>Chair Blau Comment: Could use Bellevue material to help create a "do this, not that" type of educational material.</p>

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				<p>Staff Response: We have included examples of pond “do this not that” in the Addendum.</p> <p>Staff Recommended Draft Language: See end of Addendum for examples.</p>
19	<p>Public Comment Mary Wictor</p> <p>Planning Commission Chair Frank Blau</p> <p>Planning Commissioner Brooks</p> <p>Planning Commissioner Crandall</p>	N/A	<p>Clearing and Grading/Abandonment of Clearing and Grading Sites</p> <p>Rationale: Process for pursuing bonds and/or abating abandoned clearing and grading sites should not require code amendments, just a new process.</p>	<p>Wictor Public Comment: Clearing and grading of vegetation and soils prior to development. Ms. Wictor wants the City to ensure that developments have something to preserve. Tamarack neighborhood is experiencing this. In 1998 KC Manual, Zackuse Creek had requirements for clearing and grading that are good and should be looked at. Clearing limits should be marked early like wetland delineation is done.</p> <p>Chair Blau Comment: This is horrible. Would the end result of this be that the City finishes the project for them, or restore it back to its natural state? What is the legal</p>

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				<p>process for determining if they are abandoned?</p> <p>Commissioner Brooks Comment: Would the bond cover the long term stabilization of the site, stormwater, erosion, re-landscaping, etc.?</p> <p>Commissioner Crandall Comment: Would the City contract out to have the restoration done? Or would City staff take this on?</p> <p>Staff Response: The 2016 KCSWDM has Core Requirement 7 Financial Guarantees and Liability and the SMC has Chapter 27A which has language for bonding. Staff is working with our attorney on provisions to revise in Chapter 27A that would make bonding and enforcement more straight forward.</p> <p>Staff Recommended Draft Language: No changes to Addendum.</p>

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20	<p>Planning Commission Chair Frank Blau</p> <p>Planning Commissioner Nancy Anderson</p> <p>Public Comment Paul Stickney</p>	N/A	<p>Inglewood Basin flow control and water quality standards</p> <p>The Inglewood basin requires Level 3 Flood Problem flow control standard and Sensitive Lake Water Quality treatment. A portion of the Town Center is located in the Inglewood Basin.</p> <p>Rationale: N/A</p>	<p>Chair Blau comment: What is the scope of this basin, does it include the Town Center? Does it include all of the basin? Is this an appropriate approach, to wait until the study is done? Are the standards sufficient, as they exist, or would the City continue to evaluate this area to determine if a change is necessary?</p> <p>Commissioner Anderson Comment: Is the level 3 flow control requirement unique to Inglewood or is it required in other areas?</p> <p>Stickey Comment: Why is Level 3 Flow Control required in Inglewood Basin if much of the area infiltrates east of 216th Ave NE and there are no flooding problems?</p> <p>Staff Response: The 2016 Stormwater Comp Plan, the Inglewood Basin study, and the Town Center Comp Plan all recommend that the City maintain Level 3 flow control in the Inglewood basin. Level 3 flow</p>

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				<p>control is required in other areas of the City.</p> <p>Staff Recommended Draft Language: No changes.</p>
21	<p>Planning Commissioner Shanna Collins</p> <p>Planning Commissioner Larry Crandall</p> <p>Planning Commissioner Eric Brooks</p> <p>Planning Commission Chair Frank Blau</p> <p>Planning Commissioner Nancy Anderson</p>	N/A	<p>Ponds vs. vaults</p> <p>Rationale: The City desires aesthetically designed ponds over vaults.</p>	<p>Commissioner Collins Comments: Like ponds, over vaults, but they need to be designed better. Would you get a credit regardless, or only if you meet certain requirements above the minimum design requirements?</p> <p>Commissioner Crandall Comments: Ponds can be redesigned or refigured more easily than a vault. Ponds mirror nature more than a vault does.</p> <p>Commissioner Brooks Comment: What are the long term maintenance requirements of a pond, removing sediment, etc.? Vaults are appropriate in some situations, they can provide for the ability to do rain water capture and reuse. Is there any change that developments could share</p>

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				<p>stormwater facilities? Buildable lands survey doesn't seem to cover sites that are encumbered by critical areas, etc.</p> <p>Chair Blau Comment: Would like to encourage the rethinking of pond design from the current design to a more aesthetic design. That is what the public wants. They should also have multi-use, for stormwater and for recreation. This is the direction we'd like to take to Council. What about educational material that gets at the perceptions of ponds that may be wrong? There should be a high incentive to collaborate on these ponds. Is there any inventory of sites that might be good for this? Additional GIS services are being added, this would be a good thing to add to the list of maps/analyses.</p> <p>Commissioner Anderson Comment: What is the best stormwater management strategy? The</p>

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				<p>environmental benefits should be weighed too. And costs of ponds versus vaults.</p> <p>Staff Response: You get a credit for recreation requirements but a bigger credit when you go above and beyond the design requirements. There are some long term costs associated with ponds. Removing sediment, this is the same for vaults. The long term structural integrity of vaults can be more costly than a pond. And in the Town Center, we wouldn't expect ponds unless it is contributing towards a regional facility. We're actively looking at ways we can create regional facilities. That is something staff has been directed to look at. The Parks Department is working with a consultant to look at good properties for parks, which we are leverage to have them look for good sites for stormwater. Vaults and ponds are both designed to manage stormwater the same way. However ponds, provide additional treatment</p>

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				<p>due to the biological functions in them that vaults do not have. We're looking mostly at an aesthetic quality, though, in our recommendation of ponds over vaults.</p> <p>Staff Recommended Draft Language: No changes.</p>
22	<p>Planning Commission Chair Frank Blau</p> <p>Planning Commissioner Eric Brooks</p> <p>Planning Commissioner Larry Crandal</p>	N/A	<p>Pond mowing</p> <p>Rationale: Mowing ponds on an annual basis, or at all, may be less aesthetically pleasing than not mowing ponds.</p>	<p>Chair Blau Comment: What does the science tell us about the function of mowing? This should be site specific, where some ponds are mowed, others might not need it if it does not impact function. What about a grading system to assign when ponds need to be mowed? If the pond is being used for recreation, may need to be mowed.</p> <p>Commissioner Brooks Comment: The storage capacity and the aesthetics of the site are two different issues. Perhaps not mow the</p>

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				<p>perimeter where there is no storage, but maintain where it affects function.</p> <p>Commissioner Crandall Comment: When they mow, do they leave the scraps there? If you leave the grass clippings, they dry out and may be more susceptible to fire.</p> <p>Staff Response: Staff will be pursuing this topic as we work on the Stormwater Retrofit Strategy. We recommend keeping current language for vegetation control in the 2016 KCSWDM until we can develop strategy for vegetation maintenance.</p> <p>Staff Recommended Draft Language: No changes.</p>
23	Planning Commission Chair Frank Blau	N/A	<p>Town Center Standards</p> <p>Rationale: Interim standards prior to clear LID definition and standard. New KCSWDM and Sammamish Addendum would be the standards for the Town Center, and new Town Center Regional Stormwater Standards coming.</p>	<p>Chair Blau Comment: Are the old standards of Appendix G not attainable in the urban core? The new criteria are based on science, not</p>

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	Planning Commissioner Eric Brooks			<p>economic feasibility, which is good. What about variances from this?</p> <p>Commissioner Brooks Comment: If LID can work in the Town Center, shows that it can work anywhere.</p> <p>Staff Response: The new KCSWDM has feasibility criteria clearly defined. This was not in place previously. The King County SWDM has a process clearly defined for equivalent designs. These have typically been used for emerging technologies.</p> <p>Staff Recommended Draft Language: No changes.</p>