

A landscape photograph of a river or stream flowing through a grassy field with trees in the background. The text is overlaid on the image.

# **New Surface Water Design Standards**

## **OVERVIEW**

# Scope of Presentation

- **Purpose**
- **Manual Organization**
- **Drainage Review Thresholds and Types (Chapter 1)**
- **Introduction to Core and Special Requirements (Chapter 1)**
- **Adjustment Process**
- **Reference Section Overview**
- **Questions and Answers**

## Purpose:

### **NPDES Phase II Permit Requirement And Mitigation Measure**

#### **PERMIT REQUIREMENT:**

- **Renton is required to adopt, by ordinance,**
  - The surface water design standards contained in ecology's 2005 stormwater management manual, OR
  - An equivalent NPDES phase I permit jurisdiction's manual that has been approved by ecology.

# Purpose:

## NPDES Phase II Permit Requirement And Mitigation Measure

- ▶ **HOW IS THE CITY MEETING THIS REQUIREMENT?**
  - ▶ The City of Renton adopted the [2009 King County Surface Water Design Manual](#) (King County Manual) for:
    - ▶ The design
    - ▶ Construction, and
    - ▶ Maintenance of stormwater management systems and facilities.
  - ▶ Included in the adoption of the King County Manual is the [City of Renton Amendments to the 2009 King County Surface Water Design Manual](#).
    - ▶ The amendments:
      - ▶ Replace Chapters 1 and 2 in their entirety, and
      - ▶ Identifies changes to the remainder of the King County Manual to reflect City of Renton specific requirements.

# New Surface Water Design Standards Effective Date

- February 1, 2010, the Renton City Council adopted Ordinance 5526 amending the City's surface water regulations for:
  - New developments,
  - Redevelopments and
  - Construction site activities
- The new Surface Water Design Standards became effective February 10, 2010.

# Manual Availability

- **Q:\drive AT:**
  - Q:\2009 Surface Water Design Manual
- **CITY WEBSITE:**
  - [http://rentonwa.gov/uploadedFiles/Government/PW/UTILITIES/Surface\\_Water/City%20Amendments%20to%20the%20King%20County%20Surface%20Water%20Design%20Manual.pdf?n=6791](http://rentonwa.gov/uploadedFiles/Government/PW/UTILITIES/Surface_Water/City%20Amendments%20to%20the%20King%20County%20Surface%20Water%20Design%20Manual.pdf?n=6791)

A landscape photograph of a pond surrounded by green grass and trees under a blue sky. The text "Manual Organization" is overlaid in the center in a bold, blue font.

# Manual Organization

# How the King County Manual is Structured

- **CHAPTER 1 DRAINAGE REVIEW AND REQUIREMENTS** - REJECTED by the City
- **CHAPTER 2 DRAINAGE PLAN SUBMITTAL** - REJECTED by the City
- **CHAPTER 3 HYDROLOGIC ANALYSIS & DESIGN** - AMENDED by the City
- **CHAPTER 4 CONVEYANCE SYSTEM ANALYSIS & DESIGN** - AMENDED by the City
- **CHAPTER 5 FLOW CONTROL DESIGN** - AMENDED by the City
- **CHAPTER 6 WATER QUALITY DESIGN** - AMENDED by the City

# How the King County Manual is Structured

- **APPENDICES:**
  - **A Maintenance Standards** - **INCORPORATED** by reference
  - **B Master Drainage Plans** - **REJECTED** by the City
  - **C Small Project Drainage Requirements** - **AMENDED** by the City
  - **D Erosion and Sediment Control Standards** - **INCORPORATED** by reference
- **REFERENCE MATERIALS** - **AMENDED** by the City

# How the City of Renton Amendments to the King County Manual is Structured

- **CHAPTER 1: DRAINAGE REVIEW AND REQUIREMENTS** – REPLACES Chapter 1 of the King County Manual entirely
- **CHAPTER 2: DRAINAGE PLAN SUBMITTAL** - REPLACES Chapter 2 of the King County Manual entirely
- **CHAPTER 3: HYDROLOGIC ANALYSIS & DESIGN** – AMENDED to reflect Renton’s specific flow control requirements
- **CHAPTER 4: CONVEYANCE SYSTEM ANALYSIS & DESIGN** – AMENDED to reflect Renton’s specific requirements
- **CHAPTER 5: FLOW CONTROL DESIGN** – AMENDED to reflect Renton’s specific requirements
- **CHAPTER 6: WATER QUALITY DESIGN** – AMENDED to reflect Renton’s specific requirements

# How the City of Renton Amendments to the King County Manual is Structured

- **APPENDICES:**
  - **C: Small Project Drainage Requirements** – **AMENDED to reflect Renton's specific requirements**
  - **E: City of Renton Standard Details**
- **REFERENCE MATERIALS** – **AMENDED to reflect Renton's specific requirements**

A landscape photograph showing a river or stream with a rocky bank and green vegetation. The text is overlaid on the image.

# **Drainage Review Thresholds and Types**

# CHAPTER 1: DRAINAGE REVIEW AND REQUIREMENTS

## When is drainage review required?



# City of Renton Permits and Approvals

- Building Permits/Combination Building Permits
- Construction Permits
- Demolitions Permit
- Flood Control Zone Permits
- Grading/Filling Permit
- Land Use Permit
- Mining, Excavation or Grading permit or license
- Planned Urban Development
- Rezones
- Right-of-Way Use Application
- Site Plan Approvals
- Shoreline Permits
- Short Subdivision Developments (Short Plat)
- Special Permits
- Subdivision Developments (Plats)
- Temporary Permits when involving land disturbance

# Drainage Review - THRESHOLDS

- **The new or redevelopment project will result in 2,000 square feet or more of new plus replaced impervious surface, OR**
- **The project proposes 7,000 square feet or more of land disturbing activity, OR**
- **The project:**
  - **Proposes to construct or modify a drainage pipe/ditch that is 12 inches or more in size/depth, or**
  - **Receives surface and storm water runoff from a drainage pipe/ditch that is 12 inches or more in size/depth, OR**
- **The project contains or is adjacent to a:**
  - **Flood hazard area,**
  - **Erosion hazard area,**
  - **Steep slope hazard area,**
  - **Landslide hazard area,**
  - **Projects located within a landslide hazard drainage area, OR**

# Types of Drainage Review

- Small Project Drainage Review
- Targeted Drainage Review
- Full Drainage Review
- Large Project Drainage Review

# Drainage Review Thresholds and Types - Small Project Drainage Review

- **REQUIRED FOR ANY SINGLE FAMILY RESIDENTIAL PROJECT THAT:**
  - Will result in 2,000 square feet or more new plus replaced impervious surface, or
  - 7,000 square feet or more of land disturbing activity
  - The project results in  $\leq 5,000$  sf of new impervious surface, and  $\leq 35,000$  sf of new pervious surface. 17

# Drainage Review Thresholds and Types - Small Project Drainage Review

- **IF SMALL PROJECT DRAINAGE REVIEW IS REQUIRED, THEN**
  - The proposed project must comply with the simplified small project submittal and drainage design requirements detailed in Small Project Drainage Requirements adopted as Appendix C of the 2009 Surface Water Design Manual.
    - These requirements include simplified BMPs/measures for flow control and erosion and sediment control.

# Drainage Review Thresholds and Types – Targeted Drainage Review

## **TDR PROJECT CATEGORY #1: REQUIRED FOR PROJECTS THAT**

- Contain or are adjacent to:
  - A flood hazard area;
  - Erosion hazard area;
  - Steep slope hazard area;
  - Landslide hazard area
- Propose 7,000 square feet (1 acre if in Small Project Drainage Review) or more of land disturbing activity.

# Drainage Review Thresholds and Types – Targeted Drainage Review

## **TDR PROJECT CATEGORY #2: REQUIRED FOR PROJECTS THAT**

- Propose to construct or modify a drainage pipe/ditch that is 12 inches or more in size/depth or
- Receives surface and storm water runoff from a drainage pipe/ditch that is 12 inches or more in size/depth.

# Drainage Review Thresholds and Types – Full Drainage Review

## ➤ **REQUIRED FOR:**

– Any proposed project, including a redevelopment project, that meets one or more of the following criteria:

- Will result in 2,000 square feet or more of new plus replaced impervious surface but is not subject to Small Project Drainage Review, OR
- The project will result in 35,000 square feet or more of new pervious surface is not subject to Small Project Drainage Review

# Drainage Review Thresholds and Types – Large Project Drainage Review

## **REQUIRED FOR ANY PROPOSED PROJECT THAT**

- At full buildout, result in 50 acres or more of new impervious surface within a single subbasin or multiple subbasins that are hydraulically connected across subbasin boundaries.
- Large Project Drainage Review entails preparation of a **master drainage plan (MDP)** or limited scope MDP.

A landscape photograph of a pond surrounded by green vegetation and trees under a blue sky. The pond is in the middle ground, with a line of trees in the background and more vegetation in the foreground. The sky is a clear, light blue.

# **Introduction to Core and Special Requirements**

# Core Requirement # 1

# Core Requirements-

## Core Requirement #1: Discharge at the Natural Location

### **REQUIREMENT**

- All surface and storm water runoff from a project must be discharged at the natural location so as not to be diverted onto or away from downstream properties.

# Core Requirements-

## Core Requirement #1: Discharge at the Natural Location

- The manner in which runoff is discharged from the project site must not create a significant adverse impact to downhill properties or drainage systems.
- If a proposed project or any natural discharge area within a project is located within Hazard Drainage Area and drains over the erodible soils of a landslide hazard area with slopes steeper than 15%, THEN
  - A tightline system must be provided through the landslide hazard area to an acceptable discharge point
    - Tightline systems are not required provided certain conditions are met

# Core Requirement # 2

# Core Requirements-

## Core Requirement #2: Offsite Analysis

### **THRESHOLD**

- All proposed projects must submit an offsite analysis report that:
  - Assesses potential offsite drainage and water quality impacts associated with development of the project site
  - Proposes appropriate mitigation of those impacts

# Core Requirements-

## Core Requirement #2: Offsite Analysis

### **DOWNSTREAM ANALYSIS**

- Each project submittal must include at least a Level 1 downstream analysis.

### **Extent of Downstream Analysis**

- The downstream analysis must consider the existing conveyance system(s) for:
  - A minimum flowpath distance downstream of one-quarter mile and beyond that, as needed, to reach a point where the project site area constitutes less than 15% of the tributary area.

# Core Requirements-

## Core Requirement #2: Offsite Analysis

### **DOWNSTREAM DRAINAGE PROBLEMS REQUIRING SPECIAL ATTENTION**

- There are three types of downstream drainage problems for which the City has determined that the nature and/or severity of the problem warrants additional attention through the downstream analysis:
  - Conveyance system nuisance problem
  - Severe erosion problem
  - Severe flooding problem

# Core Requirement # 3

# Core Requirements-

## Core Requirement #3: Flow Control

### REQUIREMENT

- All proposed projects, including redevelopment projects, must provide onsite flow control facilities or flow control BMPs or both to mitigate the impacts of storm and surface water runoff generated by new impervious surface, new pervious surface, and replaced impervious surface targeted for flow mitigation.
  - Flow control facilities
    - Must be provided and designed in accordance with the area-specific flow control facility requirements
  - Flow control BMPs
    - Must be provided as specified by the flow control BMP requirements

# Core Requirements-

## Core Requirement #3: Flow Control

### EXEMPTIONS FROM CORE REQUIREMENT #3

- **Basic Exemption – the project results in:**
  - **Less than 2,000 square feet of new plus replaced impervious surface will be created, AND**
  - **Less than 35,000 square feet of new pervious surface will be added.**
  
- **Impervious Surface Exemption for Transportation Redevelopment Projects – the project results in:**
  - **Less than 2,000 square feet of new impervious surface will be added, AND**
  - **Less than 35,000 square feet of new pervious surface will be added, AND**
  - **The total new impervious surface within the project limits is less than 50% of the existing impervious surface.**
  
- **Cost Exemption for Parcel Redevelopment Projects – the project results in**
  - **Less than 2,000 square feet of new plus replaced impervious surface will be created, AND**
  - **Less than 35,000 square feet of new pervious surface will be added, AND**
  - **The valuation of the project's proposed improvements (including interior improvements and excluding required mitigation improvements) is less than 50% of the assessed value of the existing site improvements.**

# Core Requirements-

## Core Requirement #3: Flow Control

### **DIRECT DISCHARGE EXEMPTION**

- Any onsite natural drainage area is exempt from the flow control facility requirement if :
  - The area drains to one of the **major receiving waters** , AND
  - Meets the **criteria for direct discharge** to that receiving water

# Core Requirements-

## Core Requirement #3: Flow Control

### **DIRECT DISCHARGE EXEMPTION**

- **Major Receiving Waters**

- Cedar River downstream of Taylor Creek confluence;
- Lake Washington;
- Johns Creek downstream of Interstate-405 (I-405) east right-of-way

# Core Requirements-

## Core Requirement #3: Flow Control

### DIRECT DISCHARGE EXEMPTION

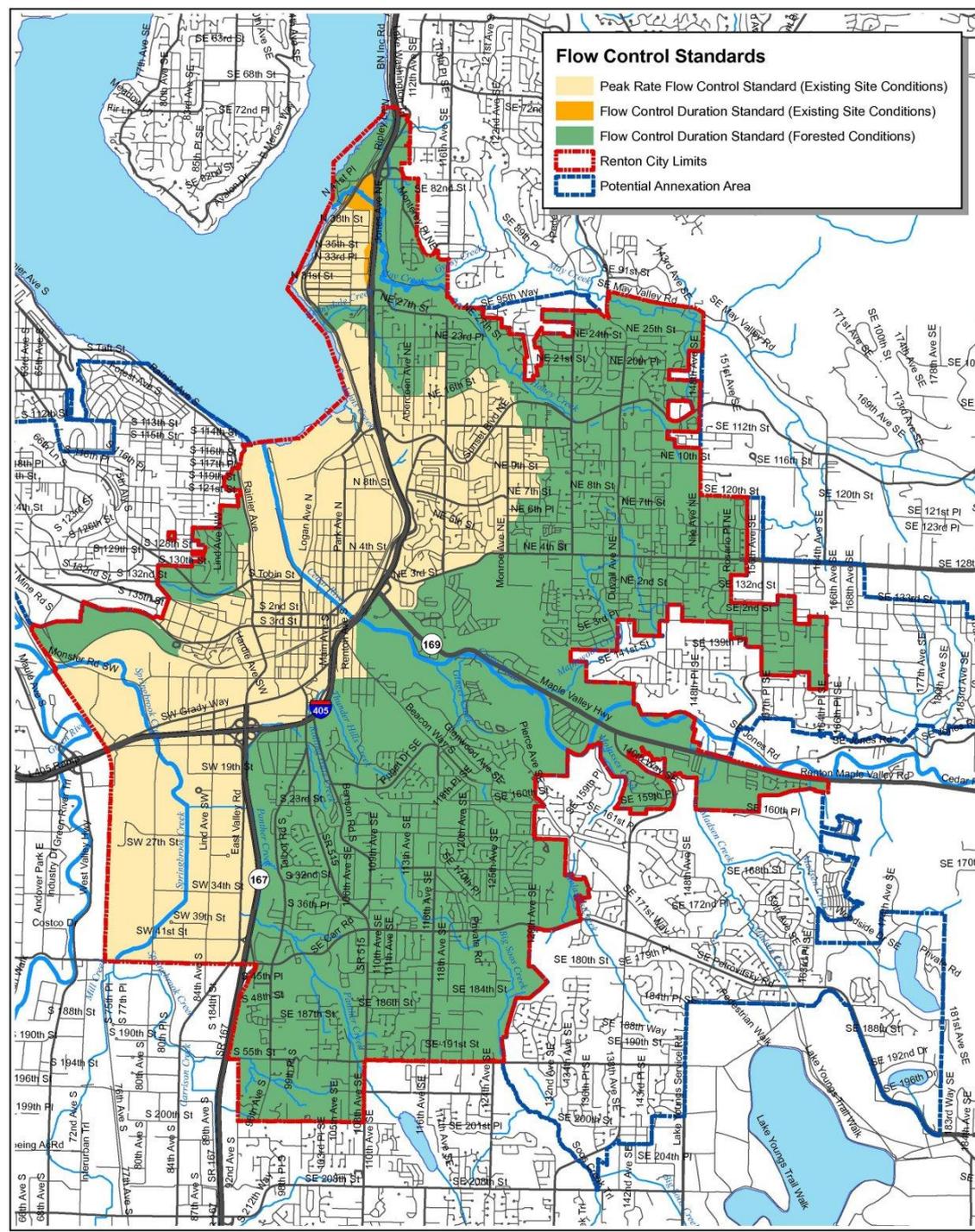
- **Criteria For Direct Discharge**
  - The flowpath from the project site discharge point to the edge of the 100-year floodplain of the major receiving water will:
    - Be no longer than one-half mile, except for discharges to Lake Washington, AND
  - The conveyance system between the project site and the major receiving water
    - Will extend to the ordinary high water mark, and
    - Will be comprised of manmade conveyance elements (pipes, ditches, etc,) and
    - Will be within public right-of-way or a public or private drainage easement, AND
  - The conveyance system will
    - Have adequate capacity to convey the 25-year peak flow (per Core Requirement #4, Conveyance System) for the entire contributing drainage area, assuming build-out conditions to current zoning for the equivalent area portion and existing conditions for the remaining area, AND
  - The direct discharge proposal will not divert flows from or increase flows to an existing wetland or stream sufficient to cause a significant adverse impact.

# Core Requirements-

## Core Requirement #3: Flow Control

### **\*\*\*GUIDE TO APPLYING THE AREA-SPECIFIC FLOW CONTROL FACILITY REQUIREMENT**

1. Check the Direct Discharge Exemption to determine if and/or which portions of the project are exempt for the flow control facility requirement.
2. Use the Flow Control Applications Map to determine the flow control area in which the project is located.
3. Consult the detailed requirement and exception language for the identified flow control area to determine if and how the flow control facility requirement applies to the project.
4. If downstream drainage problems were identified through offsite analysis per Core Requirement #2 and are proposed to be addressed through onsite flow control, use Table 1.2.3.A (p. 1-31) to determine if and what additional flow control performance is necessary to mitigate impacts.
5. Use Section 1.2.3.2 (p. 1-40) to identify the applicable requirements for implementing the flow control facility requirement.
6. Use Section 1.2.3.3 (p. 1-45) to identify the flow control BMPs that (may be used) (or could be applied) to the project site regardless of whether a flow control facility is required.



# Core Requirements-

## Core Requirement #3: Flow Control

### PEAK RATE FLOW CONTROL STANDARD AREAS

- **Minimum Required Performance**
  - Peak Rate Flow Control Standard: Match the developed peak discharge rates to existing site conditions peak discharge rates for 2-, 10-, and 100-year return periods.
- **Target Surfaces**
  - New impervious surface that is not fully dispersed
  - New pervious surface that is not fully dispersed.
- **Exceptions**
  - The target surfaces subject to this requirement will generate no more than a 0.1-cfs increase in the existing site conditions 100-year peak flow.

# Core Requirements-

## Core Requirement #3: Flow Control

### FLOW CONTROL DURATION STANDARD AREAS

- **Minimum Required Performance**
  - **Flow Control Duration Standard Matching Existing Site Conditions:**
    - Match developed discharge durations to predeveloped durations for the range of predeveloped discharge rates from 50% of the 2-year peak flow up to the full 50-year peak flow.
    - Also match developed peak discharge rates to predeveloped peak discharge rates for the 2- and 10-year return periods. Assume existing site conditions as the predeveloped condition. Effectiveness in Addressing Downstream Drainage Problems
  - **Flow Control Duration Standard Matching Forested Site Conditions:**
    - Match developed discharge durations to predeveloped durations for the range of predeveloped discharge rates from 50% of the 2-year peak flow up to the full 50-year peak flow.
    - Also match developed peak discharge rates to predeveloped peak discharge rates for the 2- and 10-year return periods. Assume forested (historic) site conditions as the predeveloped condition.

# Core Requirements-

## Core Requirement #3: Flow Control

### FLOW CONTROL DURATION STANDARD AREAS

- **Target Surfaces**
  - **New impervious surface that is not fully dispersed;**
    - **If the project meets criteria for full dispersion, then a flow control facility will not be required**
  
  - **New pervious surface that is not fully dispersed;**
    - **If the project meets criteria for full dispersion, then a flow control facility will not be required**
  
  - **Replaced impervious surface that is not fully dispersed on a transportation redevelopment project in which new impervious surface is 5,000 square feet or more and totals 50% or more of the existing impervious surface within the project limits;**
  
  - **Replaced impervious surface that is not fully dispersed on a parcel redevelopment project 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 improvements) exceeds 50% of the assessed value of the existing site improvements.**

# Core Requirements-

## Core Requirement #3: Flow Control

### FLOW CONTROL DURATION STANDARD AREAS

- **Exceptions**
  - **Flow Control Duration Standard Matching Existing Site Conditions:**
    - There is no more than a 0.1-cfs difference in the sum of developed 100-year peak flows for those target surfaces subject to this requirement and the sum of existing site conditions 100-year peak flows for the same surface areas.
  - **Flow Control Duration Standard Matching Forested Site Conditions:**
    - There is no more than a 0.1-cfs difference in the sum of developed 100-year peak flows for those target surfaces subject to this requirement and the sum of forested site conditions 100-year peak flows for the same surface areas.

# Core Requirements-

## Core Requirement #3: Flow Control

### **FLOOD PROBLEM FLOW CONTROL STANDARD AREAS**

- **Flood Problem Flow Control Standard Areas are designated by the City of Renton where the City has determined that a higher average level of flow control is needed to prevent aggravation of existing documented flooding problems.**
  - **The City has not mapped specific areas, but may apply this standard when a project discharges to a severe flooding or erosion problem.**
- **Within Flood Problem Flow Control Standard Areas, or where required by the City to protect aggravation of a downstream problem, required flow control facilities must comply with the following minimum requirements specified in the SWDM.**

# Core Requirements-

## Core Requirement #3: Flow Control

### **FLOW CONTROL FACILITY IMPLEMENTATION REQUIREMENTS**

- **METHODS OF ANALYSIS AND DESIGN**
  - Flow control facilities must be analyzed and designed using a continuous flow simulation method such as HSPF (Hydrologic Simulation Program FORTRAN) or the simplified HSPF-based runoff files method.
  - Specifications for use of the runoff files method and associated computer program, KCRTS, are found in Chapter 3.
  - Detailed design specifications for flow control facilities are found in chapter 5.

# Core Requirements-

## Core Requirement #3: Flow Control

### FLOW CONTROL FACILITY IMPLEMENTATION REQUIREMENTS

- **SIZING CREDITS FOR USE OF FLOW CONTROL BMPS**
  - When sizing flow control facilities and assessing exceptions from the flow control facility requirement, target impervious surfaces may be modeled as specified in Table 1.2.3.C below.

**TABLE 1.2.3.C FLOW CONTROL BMP FACILITY SIZING CREDITS<sup>(1)</sup>**

<b>Flow Control BMP Type</b>	<b>Facility Sizing Credit</b>
Full dispersion	Model fully dispersed surface as forest <sup>(2)</sup>
Full infiltration <sup>(3)</sup>	Subtract impervious area that is fully infiltrated
Limited infiltration	Model tributary impervious surface as 50% impervious, 50% grass
Basic dispersion	Model dispersed impervious surface as 50% impervious, 50% grass
Rain garden	Model tributary impervious surface as 50% impervious, 50% grass
Permeable pavement (non-grassed)	Model permeable pavement area as 50% impervious, 50% grass
Grassed modular grid pavement	Model permeable pavement as all grass
Rainwater harvesting	Subtract area that is fully controlled
Vegetated roof	Model vegetated roof area as 50% impervious, 50% till grass
Restricted footprint	Model footprint as restricted
Wheel strip driveways	Model credited area as 50% impervious, 50% grass
Minimum disturbance foundation	Model foundation area as 50% impervious, 50% grass
Open grid decking over pervious area	Model deck area as 50% impervious, 50% grass
Native growth retention credit	Model mitigated impervious area as 50% impervious, 50% grass
Perforated pipe connection	None

# Core Requirement # 4

# Core Requirements-

## Core Requirement #4: Conveyance

- **CONVEYANCE SYSTEMS MINIMUM REQUIRED PERFORMANCE**
  - All engineered conveyance system elements for proposed projects shall be analyzed, designed, and constructed:
    - To convey and contain the 25 year peak flow;
    - With a minimum of six inches of freeboard ;
    - Assuming developed conditions for onsite tributary areas and existing conditions for any offsite tributary areas to protect against overtopping, flooding, and erosion.
    - 100-yr peak flow does not create or aggravate a severe flooding or erosion problem
      - As described in core requirement #2
- **OUTFALLS**
  - At a minimum, rock erosion protection is required at outfalls from all drainage systems and elements.
- **SPILL CONTROL**
  - Projects proposing to construct or replace onsite conveyance system elements that receive runoff from non-roof-top pollution-generating impervious surface must provide a spill control device prior to discharge from the site or into a natural onsite drainage feature.

# Core Requirements-

## Core Requirement #4: Conveyance

### GROUNDWATER PROTECTION

- Any reach of new ditch or channel in which the untreated runoff from 5,000 square feet or more of PGIS comes into direct contact with an outwash soil must be lined with:
  - Low permeability liner or a treatment liner, except where
  - The soil complies with the soil criteria for ground water protection infiltration rates

### PUMP SYSTEMS

- May be used to convey water from one location or elevation to other provided they meet the criteria specified in chapter 4.

# Core Requirement # 5

# Core Requirements-

## Core Requirement #5: Erosion and Sediment Control

- **REQUIREMENT**
  - All proposed projects that will clear, grade, or otherwise disturb the site must provide erosion and sediment controls to prevent erosion.
  
- **ESC Performance And Compliance Provisions**
  - ESC SUPERVISOR
    - For projects in Targeted, Full, or Large Project Drainage Review, the applicant must designate an ESC supervisor.
      - Must be approved by the COR
  
    - For one acre or more of land disturbance,
      - ESC supervisor must be a Certified Professional in Erosion and Sediment Control or a Certified Erosion and Sediment Control Lead approved by Department of Ecology or King County.

# Core Requirement # 6

# Core Requirements-

## Core Requirement #6: Maintenance and Operations

- **DRAINAGE FACILITIES TO BE MAINTAINED BY THE CITY OF RENTON**
  - **Flow control, water quality facilities and flow control BMP devices**
    - Must be located in a tract or right-of-way dedicated to the City;
    - Access roads serving these facilities must also be located in the tract or right-of-way and must be connected to an improved public road right-of-way.
  - **Conveyance systems**
    - Must be located in a drainage easement, tract, or right-of-way granted to the City;
    - Offsite areas that naturally drain into the project site must:
      - Be intercepted at the natural drainage course within the project site;
      - Conveyed in a separate conveyance system; and
      - Must bypass onsite stormwater facilities
    - Separate conveyance systems that intercept offsite runoff and are located on private property
      - Must be located in a drainage easement that may be dedicated to the City if the City deems it appropriate depending on the upstream tributary area

# Core Requirements-

## Core Requirement #6: Maintenance and Operations

- **DRAINAGE FACILITIES TO BE MAINTAINED BY PRIVATE PARTIES**
  - **For residential plats, commercial and industrial sites**
    - Maintenance and operation of flow control and water quality facilities including Low Impact Development BMPs are the responsibility of the property owner(s); and
    - Must be located in a tract or dedicated easement that identifies each property owner as having equal and undivided interest.
  - Privately maintained drainage facilities are not allowed in public right of way.

# Core Requirement # 7

# Core Requirements-

## Core Requirement #7: Financial Guarantees and Liability

- **Construction Bond for Required Improvements**
  - Before a permit may be issued, the applicant may be required to execute to the City a construction bond.
- **Amount of Required Construction Bond:**
  - The construction bond shall be for not less than 100 percent of the amount calculated in the bond quantity worksheet of all required drainage improvements associated with the proposed project.
  - The bond quantity worksheet shall be provided by the applicant and is subject to review and acceptance by the City.
- **Amount of Maintenance Bond:**
  - The maintenance bond shall be for 20 percent of the amount calculated in the bond quantity worksheet.
- **Insurance Required**
  - Before a permit shall be issued for any construction, liability insurance will be required.

# Core Requirement # 8

# Core Requirements-

## Core Requirement #8: Water Quality

### **SURFACE AREA EXEMPTION:**

- **The project results in**
  - Less than 5,000 square feet of new PGIS that is not fully dispersed will be added, AND
  - Less than 5,000 square feet of new plus replaced PGIS that is not fully dispersed will be created as part of a redevelopment project, AND
  - Less than 35,000 square feet of new PGPS that is not fully dispersed will be added.

# Core Requirements-

## Core Requirement #8: Water Quality

### **IMPERVIOUS SURFACE EXEMPTION FOR TRANSPORTATION REDEVELOPMENT PROJECTS**

- The total new impervious surface within the project limits is less than 50% of the existing impervious surface, AND
- Less than 5,000 square feet of new PGIS that is not fully dispersed will be added, AND
- Less than 35,000 square feet of new PGPS that is not fully dispersed will be added.

# Core Requirements-

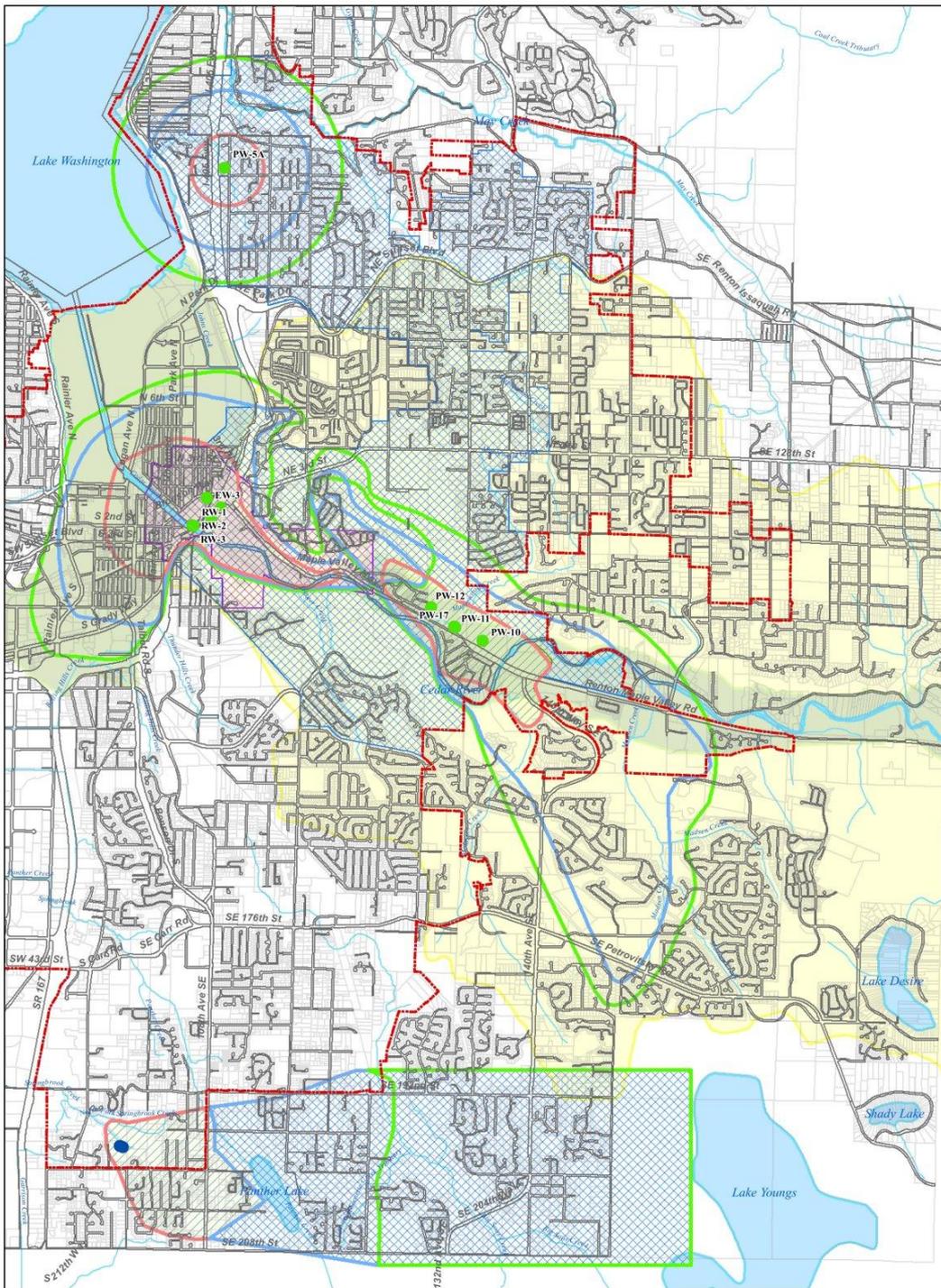
## Core Requirement #8: Water Quality

### **COST EXEMPTION FOR PARCEL REDEVELOPMENT PROJECTS**

- The total valuation of the project's proposed improvements (including interior improvements and excluding required mitigation improvements) is less than 50% of the assessed value of the existing site improvements, AND
- Less than 5,000 square feet of new PGIS that is not fully dispersed will be added, AND
- Less than 35,000 square feet of new PGPS that is not fully dispersed will be added.

### **SOIL TREATMENT EXEMPTION**

- A proposed project or any drainage area within a project is exempt if the runoff from pollution-generating impervious surfaces is infiltrated in soils that meet the "groundwater protection criteria".



# Core Requirements-

## Core Requirement #8: Water Quality

- **LAND-USE-SPECIFIC WATER QUALITY FACILITY REQUIREMENT**
  - **BASIC WQ TREATMENT AREAS**
    - Basic WQ Treatment Areas are designated by the City of Renton where a general, cost-effective level of treatment is sufficient for most land uses.
    - A treatment facility option from the **Basic WQ menu** shall be used
      - Biofiltration swales
      - Filter strip
      - Wetpond
      - Wetvault
      - Stormwater wetlands
      - Combine detention and wetpool,
      - Sand filter,
      - Storm filter and
      - rain gardens

# Core Requirements-

## Core Requirement #8: Water Quality

- **LAND-USE-SPECIFIC WATER QUALITY FACILITY REQUIREMENT**
  - **ENHANCED BASIC WQ TREATMENT AREAS**
    - If 50% or more of the runoff that drains to any proposed treatment facility is from one or more of the following land uses, then the Enhanced Basic WQ menu shall be used:
      - Commercial,
      - Industrial
      - multifamily
      - A road with an expected average daily traffic (ADT) count of 7,500.
    - The approved method and design criteria for enhanced treatment water quality treatment facilities
      - Large sand filter
      - Stormwater wetland
      - Rain Gardens
      - Two facility treatment train

# Core Requirements-

## Core Requirement #8: Water Quality

### TARGET SURFACES

- New PGIS that is not fully dispersed;
- New PGPS that is not fully dispersed;
- Replaced PGIS that is not fully dispersed on a transportation redevelopment project in which new impervious surface is 5,000 square feet or more and totals 50% or more of the existing impervious surface within the project limits.
- Replaced PGIS that is not fully dispersed on a parcel redevelopment project 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 improvements) exceeds 50% of the assessed value of the existing site improvements.

# Core Requirements-

## Core Requirement #8: Water Quality

- **METHODS OF ANALYSIS AND DESIGN**
  - Water quality treatment facilities shall be analyzed and designed as detailed in Chapter 6.
- **TREATMENT TRADES**
  - Runoff from a targeted PGIS may be released untreated if an existing PGIS of equivalent size and pollutant characteristics lying within the same watershed is treated on the project site.
- **USE OF EXPERIMENTAL WATER QUALITY FACILITIES**
  - Only treatment facilities that have been given a general use level designation through the state Department of Ecology's Technology Assessment Protocol – Ecology (TAPE) program will be considered for approval by the City of Renton through an adjustment process

# Special Requirement # 1

# SPECIAL REQUIREMENT #1:

## OTHER ADOPTED AREA-SPECIFIC REQUIREMENTS

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Threshold	Requirement
IF a proposed project is in a designated area included in an adopted master drainage plan, basin plan, salmon conservation plan, <u>stormwater compliance plan</u> , flood hazard reduction plan, or shared facility drainage plan . . .	THEN the City may apply a more restrictive requirement consistent with the drainage requirements of the master drainage plan, basin plan, salmon conservation plan, <u>stormwater compliance plan</u> , flood hazard reduction plan, or shared facility drainage plan, respectively.

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Examples of drainage requirements found in other adopted area-specific regulations include the following:

- More or less stringent flow control
- More extensive water quality controls
- Forest retention requirements
- Infiltration restrictions
- Groundwater recharge provisions
- Discharge to a constructed regional flow control or conveyance facility.

# Special Requirement # 2

# SPECIAL REQUIREMENT #2:

## FLOOD HAZARD AREA DELINEATION

Threshold	Requirement
<p>IF a proposed project contains or is adjacent to a <b><i>flood hazard area</i></b> for a river, stream, lake, wetland, closed depression, marine shoreline, or if other City of Renton regulations require study of flood hazards related to the proposed project . . .</p>	<p>THEN the 100-year floodplain, and floodway if applicable, shall be determined and their boundaries shall be delineated on the site improvement plans and profiles, and on any final subdivision maps prepared for the proposed project.</p>

### **Application of this Requirement**

The applicant is required to use the best available floodplain/floodway data when delineating the 100-year floodplain and floodway boundaries on site improvement plans and profiles, and on any final subdivision maps. The **floodplain/floodway delineation** used by the applicant shall be in accordance with RMC 4-3-050 and associated public rules. If floodplain/floodway data and delineation does not exist, then a floodplain/floodway analysis shall be prepared by the applicant as described in Section 4.4.2, "Floodplain/Floodway Analysis."

# Special Requirement # 3

# SPECIAL REQUIREMENT #3:

## FLOOD PROTECTION FACILITIES

Threshold	Requirement
<p>IF a proposed project will:</p> <ul style="list-style-type: none"> <li>• rely on an existing flood protection facility (such as a levee or revetment) for protection against hazards posed by erosion or inundation, OR</li> <li>• modify or construct a new flood protection facility . . .</li> </ul>	<p>THEN the applicant shall demonstrate that the flood protection facility conforms with <u>siting</u>, structural stability, environmental, and all other relevant standards set forth in the following regulations and requirements:</p> <ul style="list-style-type: none"> <li>• Federal Emergency Management Agency (FEMA) regulations (44 CFR),</li> <li>• Washington State <i>Integrated Streambank Protection Guidelines</i>,</li> <li>• Corps of Engineers <i>Manual for Design and Construction of Levees</i> (EM 1110-2-1913),</li> <li>• RMC 4-3-050, and</li> <li>• Special Requirement #1 (specifically the King County Flood Hazard Reduction Plan);</li> </ul> <p>AND, flood containment levees intended to provide 100-year flood containment shall be certified per standards of the FEMA regulations (44 CFR).</p>

# Special Requirement # 4

## SPECIAL REQUIREMENT #4:

### SOURCE CONTROLS

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#### Threshold

#### Requirement

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IF a proposed project requires a commercial building or commercial *site* development permit . . .

THEN water quality source controls applicable to the proposed project shall be applied as described below in accordance with the *King County Stormwater Pollution Prevention Manual* and Renton Municipal Code IV.

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#### Application of this Requirement

All commercial, industrial, and multifamily projects (irrespective of size) undergoing drainage review are required to implement applicable source controls.

# Special Requirement # 5

# SPECIAL REQUIREMENT #5:

## OIL CONTROL

**Threshold**

**Requirement**

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IF a proposed project develops a *site* that will have *high-use site* characteristics . . .

THEN the project must treat runoff from the high-use portion of the *site* using oil control treatment options from the High-Use menu (described below and detailed in Chapter 6).

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# Special Requirement # 6

# SPECIAL REQUIREMENT #6: .

## AQUIFER PROTECTION AREA

Threshold	Requirement
IF a proposed project is in Zone 1 of the <b>APA</b> ...	THEN the following drainage facilities are prohibited:  a. Open facilities such as flow control and water quality treatment ponds, stormwater wetlands and infiltration facilities  b. Flow Control BMPs  c. Open conveyance systems such as ditches and channels
If a proposed project is in Zone 2 of the <b>APA</b> ...	THEN the proposed project must comply with the following requirements  a. Open facilities such as flow control and water quality treatment ponds, stormwater wetlands and infiltration facilities may require a liner in accordance with the design criteria in Section 6.2.4.  b. Open conveyance systems such as ditches and channels may require a liner in accordance with Section 1.2.4.3.

# Adjustment Process

A landscape photograph showing a body of water, possibly a pond or a small lake, surrounded by lush green vegetation and trees. The sky is a clear, pale blue. The text "Adjustment Process" is overlaid in a large, bold, blue font across the middle of the image.

# Adjustment Process

- **CRITERIA FOR GRANTING ADJUSTMENTS**

- Adjustments to the Core Requirements and Special Requirements may be granted provided that:
  - A written request is prepared, that addresses the following:
    - Produce a compensating or comparable result that is in the public interest, AND
    - Meet the objectives of safety, function, appearance, environmental protection, and maintainability based on sound engineering judgment.
- The granting of any adjustment that would be in conflict with the requirements of any other City department will require review and concurrence with that department.

# Appendices

A landscape photograph showing a pond in the foreground, surrounded by grassy fields and a line of trees in the background. The sky is blue with some light clouds. The word "Appendices" is overlaid in large blue text across the center of the image.

# Appendix A

# Appendix B

# Appendix C

## Small Project Drainage Review Requirements

### **FOR PROJECTS IN SMALL PROJECTS DRAINAGE REVIEW:**

- Outlines drainage requirements
- Flow control BMPs
- ESC measures necessary

### **FOR PROJECTS IN FULL DRAINAGE REVIEW OR ANY OTHER TYPE OF DRAINAGE REVIEW**

- The flow control BMPs are referenced to application to any size or type of project.

# Appendix D

## Erosion and Sediment Control

- **Appendix D**
  - Provides basic information on the principles of erosion and sediment control that shall be applied to all projects in the City.

# Appendix E

A landscape photograph showing a body of water, possibly a pond or a small lake, surrounded by lush green grass and trees. The sky is a clear, pale blue. The word "References" is overlaid in the center in a large, bold, blue font.

# References

# References

1. **RMC 4-6-030 – Drainage (Surface Water) Standards**
2. **Adopting Critical Drainage Areas<sup>†</sup>**
3. **Other Adopted Area Specific Drainage Requirements**
  - A. RA Zone Clearing Restrictions<sup>†</sup>
4. **Other Drainage Related Regulations and Guidelines**
  - A. Grading Code Soil Amendment Standard<sup>†</sup>
  - B. Clearing & Grading Seasonal Limitations<sup>†</sup>
  - C. Landscape Management Plan Guidelines\*
  - D. Shared Facility Maintenance Guidance<sup>†</sup>
5. **Wetland Hydrology Protection Guidelines\***
6. **Hydrologic/Hydraulic Design Methods**
  - A. EPA Infiltration Rate Test\*
  - B. Pond Geometry Equations\*
7. **Engineering Plan Support**
  - A. King County Standard Map Symbols\*
  - B. Surface Water Standard Plan Notes and Example Construction Sequencing
  - C. Stormfilter Access and Cartridge Configuration<sup>†</sup>

\* Incorporated by reference.

† King County reference does not apply to City of Renton.

# References

## 8. Forms and Worksheets

- A. Technical Information Report (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 and Process Guidelines<sup>†</sup>
- G. Dedication and Indemnification Clause – Final Recording<sup>†</sup>
- H. Bond Quantities Worksheet
- I. Maintenance and Defect Agreement
- J. Drainage Facility Covenant
- K. Drainage Release Covenant
- L. Drainage Easement
- M. Flow Control BMP Covenant
- N. Impervious Surface Limit Covenant
- O. Clearing Limit Covenant
- P. River Protection Easement
- Q. Leachable Metals Covenant

## 9. Interim Changes to Requirements<sup>†</sup>

## 10. King County Identified Water Quality Problems<sup>†</sup>

## 11. Maps

- A. Flow Control Application Map
- B. Ground Water Protection Areas
- C. Soil Survey Map

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Incorporated by reference.

†

King County reference does not apply to City of Renton.

# Questions?

