



MEETING AGENDA

KELSO STORMWATER ADVISORY COMMITTEE

DATE: January 6, 2010
TIME: 4:00 pm – 6:00
LOCATION: Kelso City Hall, Suite 203

Unfinished Business

- 1) December meeting minutes approval
- 2) Comments and review of KEDM Chapter 4, Stormwater Drainage
- 3) Review of changes to Development and Redevelopment ordinance



Kelso Stormwater Advisory Committee Meeting
January 6, 2010 @ 4:00 p.m.
City Hall Conference Room 203
203 S. Pacific Ave.

Attendees:

1. Stephanie Helen
2. SM 2
3. Glenn Nichols
4. Vuckay
5. Tim Whites
6. Don Lemmons
7. Dan Howell
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____



Engineering Phone 360-423-6590
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Operations Phone 360-423-5730
Fax 360-423-8196

CITY OF KELSO
Public Works Department
203 S. Pacific Ave., Suite 205
PO Box 819
Kelso, WA 98626

Stormwater Advisory Committee Meeting

December 16, 2009

Call to Order:

Steffanie Taylor called the meeting to order at 4:10 p.m., at City of Kelso City Hall, 203 S. Pacific Ave., Suite 203.

Those present were as follows:

Advisory Committee Members:

Gloria Nichols
Tim Wines
Steffanie Taylor
Dan Howell
Don Lemmons
Gary Fredricks

Staff:

Van McKay, City of Kelso

Unexcused Absence: Dylan Olson

Also in attendance:

Josh Johnson, City of Longview

Approval of Minutes:

Tim Wines made the motion, seconded by Gloria Nichols to approve the minutes of October 28, 2009. Motion carried, all in favor. November 18 minutes were reviewed but not "approved" as there was not a quorum.

Unfinished Business:

1. Kelso Engineering Design Manual Chapter 4 Stormwater Drainage Review

A review and discussion of the draft KEDM Chapter 4 was performed. The draft copy provided had been revised from the version presented at the November 18, 2009 meeting and the changes were based upon the November meeting comments and commensurate with the Longview Stormwater Manual changes. The following items were discussed:

I. Flow Control Exemption. Van McKay has not received a response from his and Ken Cachelin's letter to Ecology requesting to have the CDID #3 ditches flow control exempt. He also has not received a response from Ecology on whether the DID#1 box culverts can be flow control exempt. Although only one parcel is above one acre within the DID#1 jurisdiction, KSAC still wants to pursue flow control exemption for DID#1 due to the potential for annexation of County lands

It is the Mission to: Plan, Prioritize, Construct, Operate and Maintain Public Infrastructure in Order to Provide Continuous Health and Safety While Positively Impacting Citizen's Quality of Life by Efficiently and Innovatively Maximizing Available Resources Within the City so that we Provide High Quality Services for the Public.

within DID#1. Language will be added to the development ordinance to allow flow control exemption for DID#1 if approved by Ecology and the Director.

II. Page 4-24, Section 4.12 (A)(2)(b):

- Change “2 feet” to “1 foot”

III. The following was not added from November meeting comments: Refer to Development Ordinance page 10 Section B. Exemptions, copy Items No. 2, 3, and 5 into Chapter 4 Section 4.03.B Exemptions and Variations.

IV. Page 4-17, Section 4.08 (D) Infiltration Test

- Discussion on merits of simplified pit infiltration test versus Clark County’s infiltration tests. T. Wines to set up a conference call with a Clark County consultant to discuss with J. Johnson and V. McKay.

V. Various typos and formatting

- Page 4-16 (B) second paragraph: change toward to towards
- Add borders to Table 4.2
- Page 4-18, Section 4.09(C): change “map” to “may”
- Page 4-24, Section 4.12(B)(6)(b)(iii): remove the first “the”
- Page 4-26, Section 4.13(G)(2): remove “, channels” and end sentence with a period
- Page 4-28: remove Section C as it is redundant

VI. Page 4-30, Section 4.17(D): Add “For public facilities,” to the second sentence and number public and private facilities.

VII. Page 4-32, Section 4.20(D)(1): remove “or replacement” and do this in the development ordinance also in Section 13.09.140 Maintenance Escrow Requirement.

VII. D. Howell moved and G. Nichols seconded a motion to recommend that the City Council adopt Chapter 4 of the KEDM. This recommendation is based upon changes to be made to the draft from discussions during the meeting and potential modifications to the infiltration test portion of the Chapter based upon discussions between T. Wines, V. McKay, J. Johnson, and a Clark County consultant.

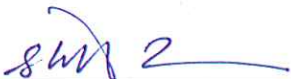
2. Development and Redevelopment ordinance review – postponed until the January meeting. The ordinance was previously approved by KSAC to recommend adoption by City Council. Van McKay made minor changes to the document based upon the review process of Longview’s development ordinance. Members were requested to review the ordinance changes and if they had comments, to have the comments in written form for the January meeting.

Next Meeting:

January 6, 2010 @ 4:00 – 6:00 p.m., Kelso City Hall, Suite 203. Gary Fredericks will not be able to attend due to a previous engagement.

Meeting adjourned at 6:00 pm.

Approved:



Steffanie Taylor, Chairperson



Stephanie Helem, Recording Secretary

CHAPTER 4 - STORM DRAINAGE

- PART I: Storm Drainage Introduction**
- PART II: Requirements for Development**
- PART III: Low Impact Development**
- PART IV: Conveyance**
- PART V: Additional Requirements**

PART I: Storm Drainage Introduction

4.00 Purpose

- A. The purpose of this chapter is to provide policy and guidance for stormwater design and management in the City of Kelso, consistent across the Longview-Kelso urbanized area, in order to:
 - 1. Protect the public health, safety, and welfare by minimizing risk from flood events,
 - 2. Protect property and habitat from increased runoff caused by development,
 - 3. Allow efficient operation, repair, and maintenance of the storm drain system, and
 - 4. Reduce discharge of pollutants to the storm drain system and protect water quality.
- B. The requirements of this chapter cannot provide for all situations. They are intended to assist but not to substitute for competent work by design professionals.

4.01 Approach

- A. The City of Kelso's Phase II Municipal Stormwater National Pollutant Discharge Elimination System (NPDES) Permit (Phase II Permit) requires that, at a minimum, existing local regulations be retained and that portions of the most current Stormwater Management Manual for Western Washington (SMMWW) be adopted. This chapter will reference (but not typically repeat) the SMMWW, which can be found at: www.ecy.wa.gov/programs/wq/stormwater/index.html.
- B. Where portions of this chapter and the SMMWW conflict, this chapter shall apply. Where provisions of this chapter conflict with other City of Kelso Code, or state and federal requirements, the more stringent provisions apply.
- C. Except as otherwise provided herein, all construction design detail, workmanship, and materials shall be in accordance with the following:
 - 1. Longview-Kelso Standard Plans & Specifications,
 - 2. Washington State Department of Transportation's (WSDOT's) Standard Plans and Specifications for Road, Bridge, and Municipal Construction, most recent edition,
 - 3. Puget Sound Partnership's Low Impact Development Manual (LID Manual), most current revision, and the
 - 4. Department of Ecology's (Ecology's) 2005 SMMWW.

- D. This Chapter is intended to represent the minimum design standards for erosion and stormwater control.
 - 1. Compliance with these Standards does not relieve the designer of the responsibility to apply sound professional judgment to protect the health, safety, and welfare of the general public.
 - 2. Special site conditions and environmental constraints may require a greater level of protection than would be required under these Standards.
 - 3. The project must be designed (and may require modification) to ensure compliance with the conditions of any permits, codes and regulations, and these Standards.
- E. The City may temporarily suspend project work or require additional or modified protection measures if it appears to the Director, based upon observed conditions, that the approved plan is insufficient to prevent environmental harm and that such suspension or additional measures will prevent or minimize the harm.

4.02 Applicability

All development activity as defined below including all construction and upgrading of public and private roads and drainage systems within the City of Kelso is subject to the requirements of this Chapter.

- A. Development – Land disturbing activities, construction or installation of a building or other structure; creation of impervious surfaces; redevelopment; and subdivision, short plats, and binding site plans as defined in Chapter 58.17 of the Revised Code of Washington (RCW).
- B. Land disturbing activities are those activities which are commonly referred to as:
 - 1. Clearing (the act of vegetation removal from the land surface by mechanical or chemical means),
 - 2. Grubbing (the act of root vegetation removal from beneath the surface of the earth - usually in association with clearing),
 - 3. Excavation (the mechanical removal of earth material),
 - 4. Filling (deposition of earth and rubble material),
 - 5. Grading (excavation or filling or combination thereof),
 - 6. Compaction (densification of earth material),

7. Stockpiling (temporary deposition of earth material), and
8. Stabilizing (counteracting the actions of gravity, wind, or water).

4.03 Exemptions and Variations

A. The following are exempt from the requirements of this Chapter:

1. Agriculture and Forestry. Commercial agriculture and forest practices regulated under Washington Administrative Code (WAC) Title 222 are exempt from all technical and administrative requirements established in this Chapter. Class IV General Forest Practices that are conversions from timber land to other uses are not exempt.
2. Landscaping and Gardening. Normal landscape maintenance activities and gardening must control erosion, but do not trigger the State or Local development requirements of Part II Requirements for Development.
3. Road Maintenance. The following road 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,
 - c. shoulder grading,
 - d. reshaping/regrading drainage systems,
 - e. crack sealing,
 - f. resurfacing with in-kind material without expanding the road prism, and
 - g. vegetation maintenance.

B. The following activities are exempt or vary from certain requirements of this Chapter:

1. State Flow Control Exemption. Projects within the Consolidated Diking Improvement District #1 (CDID #1), Consolidated Diking Improvement District #3 (CDID #3), and Diking Improvement District #1 (if approved by Ecology) boundaries are exempt from Ecology's flow control standard, Minimum Requirement #7 (see Section 4.06 of this Chapter)
2. Erosivity Waiver. Projects disturbing less than five acres that meet the

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requirements delineated in Chapter 2 (F) of this Manual may apply for an “Erosivity Waiver” to be exempt from Minimum Requirement #2, the requirement to submit a Stormwater Pollution Prevention Plan (SWPPP).

3. Utilities. Underground utility projects that replace the ground surface with in-kind material or materials with similar runoff characteristics are subject only to the erosion and sediment control requirements.
4. Amenity. The following are exempt from meeting the amenity goals, Section 4.05(G)(1), and are subject only to the Facility Requirements of Section 4.05(G)(2).
 - a. Projects within the Light Industrial and General Industrial zoning classifications; or
 - b. Projects that have less than or equal to 20-parking spaces, less than 60 expected average daily vehicle traffic count (ADT), or a comparably low level of public exposure
5. Downspout Dispersion. Projects using downspout dispersion according to this Chapter may receive credit for their use regardless of lot size; although use on lots less than 22,000 sq. ft. may be conditioned upon review. Local credit may still apply if the vegetated flow path is less than the state minimum, on a case-by-case basis.
6. Project Planning Area. Any area within the same site having equivalent flow and pollution characteristics can be used to meet the local requirements and Ecology’s Minimum Requirements (MRs), state and local requirements. For public road projects of any size, the equivalent area can be outside the project limits, provided it drains to the same receiving water.
7. Regional Facilities. The requirements for on-site management and against the transfer of runoff from one basin to another may be waived by the Director in areas served by an off-site regional public stormwater control facility. Such a waiver must be conditioned on the following provisions:
 - a. Basin Planning. The alternative or regional approach must comply with the Basin Planning provisions of the Phase II Permit.
 - b. Services Contracted. The developer shall provide the City a copy of an executed contract with the public facility demonstrating full compliance with the local standard.
 - c. Conveyance System Capacity. The conveyance system transporting the stormwater from the development to the facility shall be sized to handle the additional runoff. The developer may be required to demonstrate the adequacy

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5. Public Exemption. Public road and drainage projects are exempt from the local redevelopment requirements in Section 4.05(1) [7.2 and 7.3]

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of the conveyance system by a registered engineer in the State of Washington.

8. Other Manuals Accepted. BMP's from an Ecology approved manual for western Washington are allowed. For example, infiltration testing for projects exceeding the one-acre threshold may use the 8-hour method described in the King County Stormwater Manual, instead of the 24-hour test described in the SMMWW.

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9. Diking District Maintenance. Routine dike and channel maintenance activities by diking districts are exempt from the administrative requirements of Chapter 2 Erosion, Clearing, Grading.

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10. Natural Drainage Features. The Director may allow the restoration of flow to natural drainage features as an alternative to traditional detention. Such a bypass must solve significant, pre-existing (i.e. not otherwise caused by the project) flooding, stream stability, water quality or habitat problems. The project must also satisfy all conditions of the SMMWW, Volume I, §2.5.7, be documented by a stormwater engineer or scientist, and receive approval from all relevant regulatory authorities.

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11. Wetlands: New development and redevelopment are exempt from Minimum Requirement #8 (Wetlands Protection), provided that:

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- a. The project does not change the rate, volume, duration, or location of discharges to and from the project site (e.g., where existing impervious surface is replaced with other impervious surface having similar runoff-generating characteristics, or where pipe/ditch modifications do not change existing discharge characteristics), or
- b. The project discharges to a slope wetland or riverine wetland where no depression (impounding) characteristics exist, or
- c. The project meets the requirements for and intends to use full dispersion in accordance to the SMMWW or this Chapter for flow control, or
- d. The City determines, based on information in the preliminary stormwater plan or information submitted for wetland review per KMC 18.20, that the proposed project complies with the City's Critical Areas requirements or constitutes either an adjustment or an exception/variance.

12. Local Threshold Exemption. The following are exempt from the threshold calculations for Ecology's minimum requirements:

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- a. Impervious surfaces that are fully dispersed or infiltrated in compliance with the SMMWW; and

- b. Open, uncovered retention/detention facilities; however, such facilities shall be considered impervious when modeling runoff.

13. State Threshold Exemption. The following are exempt from the threshold calculations for Ecology's MRs:

- a. Impervious surfaces that are fully dispersed or infiltrated in compliance with the SMWW; and
- b. Open, uncovered retention/detention facilities; however, such facilities shall be considered impervious when modeling runoff.

14. Road Maintenance. The following are exempt from the threshold calculations for Ecology's MRs:

- a. Removing and replacing a paved surface to base course or lower, or repairing the roadway base itself, if impervious surfaces are not expanded, are considered redevelopment exempt from MRs #6 - #9. However, in most cases, only MR #2, Construction Stormwater Pollution Prevention, will be germane.
- b. Public road projects are exempt from the local redevelopment requirements in Section 4.05(H), provided that low impact development techniques are preferentially used as practicable without causing flooding or erosion impacts.

PART II: Requirements for Development

4.04 Overview of the Requirements

- A. Local Requirements. Projects that disturb greater than or equal to 5,000 sq. ft. of land or create/replace greater than or equal to 5,000 sq. ft. of impervious surfaces are subject to the "Local" stormwater requirements. These supersede and, per the Phase II Permit, are no less protective than the 2004 Longview-Kelso Stormwater Runoff Control Guidelines. Projects under 5,000 sq. ft. are subject to erosion and sediment control.
- B. State Requirements. Projects that disturb one or more acres or that are part of a larger plan of development or sale, are also subject to a set of state-mandated, or "State" requirements that are detailed in the SMMWW (Volume I, Section 2.5). These "nine minimum requirements" (MRs) are as follows:
 - 1. Preparation of Stormwater Site Plans
 - 2. Construction Stormwater Pollution Prevention
 - 3. Source Control of Pollution
 - 4. Preservation of Natural Drainage Systems and Outfalls

5. **Onsite Stormwater Management**
6. **Runoff Treatment**
7. **Flow Control**
8. **Wetlands Protection (Any Phase II Permit wetland protection or waiver of such requirements does not remove the requirement to comply with the City's Critical Area requirements)**
9. **Operation and Maintenance**

NOTE: A tenth category discussed in the SMMWW, **Basin/Watershed Planning**, is not required by the Phase II Permit or this Manual.

C. Applicability of these requirements depends upon:

1. Area of land disturbing activity,
2. Area of impervious surface added and/or replaced,
3. Type of discharge anticipated, and
4. Location of the project.

D. Consult the local and state flowcharts in Appendix A to determine which Local and State requirements apply. Where the requirements may conflict, the stricter condition applies.

4.05 Local Requirements for Development and Redevelopment

A. Applicability

1. The public right-of-way, receiving waters, and adjoining properties shall be protected from the deposition of materials, discharge of sediments and other pollutants, and damage from increased surface and subsurface flow rates.
2. All projects shall comply with the City's general design, construction, and maintenance criteria for stormwater drainage systems contained in this Chapter.

B. General Requirements

1. On-site stormwater management BMPs to minimize, infiltrate, disperse, and retain runoff on-site shall be preferentially used as practicable without causing flooding or erosion impacts.
2. No development shall be allowed to increase the rate of stormwater runoff onto an adjacent property or block existing drainage from adjacent lots.

3. LID Credits and Regional Facilities. Projects may be eligible for LID credits or allowed to use regional facilities, as discussed in Part III and Section 4.03 of this Chapter, respectively.
4. Hydrologic and Hydraulic Analysis.
 - a. Methods allowed. Two methods are available to design engineers for estimating peak runoff; the Western Washington Hydrology Model (WWHM) and the Soil Conservation Service (SCS) methods (including the SBUH), provided that the latest “curve numbers” and factors are applied with sound engineering judgment.
 - b. Rainfall data. Design storm data is provided in Appendix B.
 - c. Existing conditions. Existing conditions shall be those in 1999 or as determined by the Director. Acceptable documentation may include, but not be limited to, 2002 aerial photos, crop history, or tax assessor records.
 - d. Regional plan. Recommendations provided in the Lower Cowlitz River Flood Master Plan shall take precedent.
5. Facility Design
 - a. Flow and water quality control facilities are subject to the site planning and BMP selection, design, and maintenance criteria comparable to those of the SMMWW, or other Ecology-approved stormwater manuals, methods and technologies for western Washington. Creative engineering solutions are encouraged, but they must be ~~pre~~-approved by the Director. Deleted: prior to implementation
 - b. If a site is proposed to be constructed in phases, the drainage report (including the preliminary design) shall address all phases of the project.
 - c. A development is only required to mitigate the new plus replaced impervious surfaces and the converted pervious surfaces; however, stormwater facilities must be sized for the entire flow directed to them.

C. Erosion and Sediment Control

All projects must provide erosion and sediment control. Additional local requirements for projects disturbing greater than or equal to 5,000 square feet are discussed in Chapter 2 of this Manual.

D. Plans Submittal

Projects creating greater than or equal to 5,000 square feet of new impervious surfaces must submit a stormwater drainage plan as outlined in Chapter 1 of this Manual.

E. Water Quantity Control

1. Projects creating greater than or equal to 5,000 square feet of new impervious surfaces must provide on-site stormwater flow control.
2. Low Impact Development shall be preferentially used as practicable to minimize runoff and disconnect impervious surfaces (See Part III of this Chapter).
3. Design Storms. Facilities shall be sized such that the peak release rate from the development shall not exceed the peak release rate from:
 - a. half of the pre-developed 2-year, 24-hour design storm,
 - b. the pre-developed 25-year, 24-hour design storm, and
 - c. the pre-developed 100-year, 24-hour design storm.

24-hour Design Storms for the
Longview-Kelso Urbanized Area
(see Appendix B for more information)

2-Year	2.54"	25-Year	4.37"
5-Year	3.10"	50-Year	5.17"
10-Year	3.60"	100-Year	6.17"

4. Tailwater. Consideration must be given to the backwater effect of high surface elevations in the downstream conveyance system. High tailwater elevations may affect performance of the upstream stormwater facility and reduce live storage volumes.
5. Emergency Overflow. If surface detention is used, an overflow shall be included to safely pass the one-hundred (100) year, twenty-four (24) hour design storm without overtopping any part of the pond embankment or inundating neighboring property. Sufficient armoring will be required to prevent erosion.
6. Credits and Exemptions: Refer to Section 4.03 of this Chapter.

F. Water Quality

1. Basic Water Quality Control.
 - a. Projects creating greater than or equal to 5,000 square feet of new impervious surface must provide on-site water quality control.
 - b. Low Impact Development shall be preferentially used as practicable to improve

runoff quality (see Part III of this Chapter).

- c. The water quality design.
 - (i) The water quality design storm for the Longview-Kelso urban area is defined as two-thirds ($\frac{2}{3}$) of the two (2)-year, 24-hour storm, with an SCS 1A type rainfall distribution; therefore the water quality design storm is 1.69 inches in 24-hours ($2.54" \times 0.667$).
 - (ii) Alternatively, the Western Washington Hydrology Model (WWHM) may be used to design water quality facilities.
2. Source Control. Some new development or re-development projects, regardless of size, may be required to control runoff pollution at its source.

- a. Highly Contaminated Runoff. Any project where a City construction permit is required, such as the Building, Fill and Grade, Right-of-Way and others, that is determined by the City to have the potential to generate highly contaminated runoff shall provide a level of treatment commensurate with the risk.

Highly contaminated runoff contains toxicants which would violate any water quality standard, including toxicant standards, sediment criteria, and dilution zone criteria. Examples include, but are not limited to:

- (i) Uncontrolled runoff from outdoor industrial, maintenance, and storage activities;
- (ii) Process wastewater, including washwaters and leachate; and
- (iii) Runoff from establishments subject to high-use traffic and/or parking. A high use site at a commercial or industrial site has one of the following characteristics:
 - An expected average daily vehicle traffic (ADT) count greater than or equal to 100 vehicles per 1,000 sq. ft. of gross building area (drive-through, big box); or
 - Storage of a fleet of 25 or more diesel vehicles that are over 10-tons gross weight (trucks, buses, trains, heavy equipment, etc.)
- b. Oil/Water Separation. Additionally, all projects requiring City approval that are changing the use of a parcel shall provide a level of oil/water separation commensurate with the risk, as designated below.

- (i) API or CP-type oil/water separators are required for:
 - Industrial machinery and equipment, trucks and trailers, aircraft, parts and aerospace, railroad equipment;

- Log storage and sorting yards;
 - Airfields and aircraft maintenance;
 - Fleet vehicle yards;
 - Railroad yards;
 - Gas stations;
 - Retail/wholesale vehicle and equipment dealers;
 - Vehicle maintenance and repair;
 - Construction businesses such as paving, heavy equipment storage and maintenance, storage of petroleum products. (This does not include construction sites);
 - Other activities that exhibit a significant risk of high oil loading in runoff;
- (ii) Spill control (SC) type oil/water separators are required for:
- Restaurants;
 - Multi-family residential development activities creating parking spaces for twenty-five (25) or more vehicles;
 - Other activities where the risk of oil spills or illegal dumping of oil or grease is significant;
 - Where the risk of oil or grease spills or dumping is determined to be minimal by the Director, oil/water separators shall not be required for those portions of a site.
- d. Deferment. Projects subject to the local source control requirements, but which do not exceed other local or state thresholds for development, may defer installation of the required treatment, provided:
- (i) A stormwater performance bond is furnished, with Section 4.17 of this Chapter.
 - (ii) The controls must be installed within two years of receiving City approval.
 - (iii) The source does not constitute an illicit discharge.

3. Credits and Exemptions: Refer to Section 4.03 of this Chapter.

G. Amenity Criteria. All developments creating 5,000 square feet or more of new impervious surface shall comply with the Facility Requirements of this section and satisfy at least one of the goals. A narrative of how the goals are or are not satisfied shall be included with the stormwater plans submittal.

1. Goals

- a. Retain existing resources and mimic natural processes (use LID) to the full extent practicable.
- b. Use stormwater design to enhance property value. *Suggestions* include:
 - (i) Create an aesthetic experience (beauty, art, etc.) focused on the stormwater.
 - (ii) Allow conditions for safe interaction with the stormwater system in a way that is relaxing, amusing, and/or refreshing.
- c. Communicate the presence, function, or impact of the site's runoff. Examples include:
 - (i) Provide statements or symbols communicating the value of the stormwater design in relation to hydrologic and ecological function.
 - (ii) Create compelling conditions to learn about stormwater issues.

2. Facility Requirements

a. Aesthetics

- (i) Aboveground storm water facilities shall appear as naturally occurring features or otherwise enhance or compliment site aesthetics; or incorporate screening, location, landscaping, and/or artistic elements into the design so that the facility is a positive feature.
- (ii) Fencing requirements are located in Section 4.05(G)(4) of this Chapter.

b. Labeling and Signage

- (i) All inlets and manholes within shall be stamped "Dump no Pollutants – Outfall to Stream," or equivalent (See City of Longview-Kelso Standard Plan SD-110). Similar-themed markers or stenciling in addition to this minimum requirement are encouraged.

- (ii) At the discretion of the Director, permanent signs, such as those described in the SMMWW Vol. III Ch. 3.2.1, shall be installed for significant aboveground facilities such as ponds, bioswales, pervious streets, or developments that rely on numerous dispersed LID BMPs. Signs should identify the feature(s), state the purpose and/or function, provide contact information, and give any advisory message that is key to its proper and continued performance.

c. Sustainable Maintenance

- (i) Trees may be planted near biofiltration swales as long as they will not inhibit vegetative growth and water flow within the swale.
- (ii) To maximize plant survival and performance, species selection shall conform to the following sections of the SMMWW:
 - Detention ponds: SMMWW Vol. III Section 3.2
 - Basic Biofiltration Swale: SMMWW Vol. V Tables 9.3 & 9.4, BMP T9.10
 - Wet Biofiltration Swale: SMMWW Vol. V. Table 9.5, BMP T9.20
 - Wet ponds: SMMWW Vol. V. Table 10.1, BMP T10.10
- (iii) Designs should consider access for maintenance as well as sun and water for vegetation.
- (iv) Designs with complex or expensive long-term maintenance are discouraged.

3. Preserving natural areas

- a. The preserved area, such as existing forest, wetlands, and riparian areas:
 - (i) Are regulated under KMC Title 18.20;
 - (ii) Should be placed in a separate tract or protected through recorded easements for individual lots; and
 - (iii) Should be shown on all property maps and should be clearly marked on-site during clearing and construction.
 - (iv) Should be sited to promote connectivity to existing forest, wetlands, and riparian areas.

- b. Preserved areas can be located below the building sites, so that dispersion

through the duff, undisturbed soils, and native vegetation can provide flow and water quality for the site.

- c. Vegetation and trees should not be removed from the preserved area, except for approved timber harvest activities and the removal of dangerous and diseased trees.

4. Fencing

- a. Fencing shall be consistent with any hazard.
- b. For stormwater facilities, fencing shall be allowed only for legitimate safety concerns or as part of the site's landscaping design.
- c. Facilities shall be designed (or control structures protected) such that peak flows and velocities do not pose an unacceptable risk to children or vulnerable adults.
- d. Designs with slopes steeper than 3:1 or with walls exceeding 30 inches are discouraged. They will be evaluated on a case-by-case basis and may be eligible for site-specific adjustments under KMC [13.09.170](#).
- e. Designs needing a steep or vertical slope shall provide emergency egress points and fall deterrence.
 - (i) Only the portions of the facility associated with a hazard shall be fenced.
 - (ii) Guardrails or other barriers will be required for vertical drops greater than 30 inches.
- f. Landscaping shall be installed as screening where fencing is required, unless not feasible.
- g. Benched retaining walls or natural appearing rockeries are preferred in lieu of vertical walls above deep live storage.
- h. The owner, neighborhood association, or other vested party, such as an adjacent daycare or assisted-living facility, may make a written request for the City to allow a fence.

H. **Redevelopment.** Projects that create and/or replace 5,000 square feet or more of impervious surface that are not otherwise required in Sections 4.05(E), 4.05(F)(1), and 4.06 of this Chapter to provide stormwater controls shall, as part of the project, make at least one of the following improvements (pre-existing controls will not satisfy this requirement unless they are expanded commensurately):

1. Provide water quality treatment for at least 30 percent of the site's pollution generating surfaces, and/or
2. Reduce total site run-off by at least 20 percent below pre-existing conditions, and/or

3. Apply innovative approaches to maximize on-site management of runoff (e.g. green roofs or retrofits for parking lot, landscaping, and/or existing drainage), and/or
4. Provide an equivalent level of treatment or watershed improvement offsite (e.g. street trees, open space dedication, etc.) and/or
5. Address downstream channel, capacity, or flooding issues through improvements offsite, and/or
6. The Director may allow combinations of (1) through (5) above and/or source controls required in Sections 4.05(F) above to satisfy these criteria.

4.06 State Requirements for Development and Redevelopment

A. Ecology's Minimum Requirements (MRs)

1. Ecology's requirements apply only to projects that disturb one (1) acre or more of land or less if part of a larger common plan of development or sale. Where both local and state thresholds are triggered, the stricter requirement applies.
2. Use Figure 4-2 to determine which of the Minimum Requirements below apply.
3. The SMMWW, Volume I, Chapter 2.5, provides detailed applicability and technical resources needed for compliance. Local exceptions and notes to Ecology's MRs are provided below:

1. Preparation of Stormwater Site Plans

Consult Chapter 1 of this Manual for additional local requirements.

2. Construction Stormwater Pollution Prevention

Chapter 2 of this Manual mirrors the SMMWW. Refer to SMMWW Vol. II for all the Construction BMPs. A few local BMP options are in the Erosion Control section of the Longview-Kelso Standard Plans & Specifications.

3. Source Control of Pollution

4. Preservation of Natural Drainage Systems and Outfalls

5. On-site Stormwater Management

Also consult Part III of this Chapter for LID Credits

6. Runoff Treatment

7. Flow Control

- (i) See Section 4.05 (G) if the design is to include fencing
- (ii) Properties protected by CDID #1 and CDID #3 are exempt from the state flow control requirements.

8. Wetlands Protection

9. Operation and Maintenance

- B. Construction and Industrial Stormwater NPDES Permits. Obtain Ecology's Construction or Industrial Stormwater NPDES Permit if/as required by Ecology. See Ecology website www.ecy.wa.gov/programs/wq/stormwater.
- C. Underground Injection Control (UIC). A UIC well may be used to manage stormwater when pollutant concentrations that reach groundwater are not expected to exceed Washington state groundwater quality standards (Chapter 173-200 WAC). Ecology's "Guidance for UIC Wells that Manage Stormwater" (Ecology 2006) provides siting, design, and installation information that must be followed.

PART III: Low Impact Development

4.07 Low Impact Development Overview

- A. On-site Stormwater Management. The on-site stormwater management BMPs identified in the SMMWW to infiltrate, disperse, and retain runoff on-site shall be preferentially used as practicable without causing flooding or erosion impacts. These BMPs are summarized in Table 4-1 in Appendix C and are illustrated in the figure "Common Onsite Runoff Management BMPs" found in Appendix D. They generally pertain to:
 - 1. Downspouts: Using trenches or splashblocks to spread (or "disperse") runoff over vegetated areas, or using "French drains" to "partially" connect downspouts to the street's curb and gutter, or other storm drain system.
 - 2. Driveways: Building driveways and other larger ground-level impervious areas so that they slope, berm, or intercept runoff to a gravel pad then to a vegetated area.
- B. LID Credits. A credit, or runoff model representation, allows an equivalent area of impervious surface to be modeled as a pervious surface. For example, if stormwater runoff from a roof is infiltrated onsite, the impervious area of the roof can be modeled as landscaped area resulting in reduced stormwater discharge from the site.

To encourage the use of LID, the City extends the following credits listed in Table 4-2 below to developers for use towards the local stormwater requirements.

Table 4.2: Credits Accepted Towards Local Stormwater Requirements

Local Credits (Section 4.09)	State Credits (Section 4.10) (from SMMWW Vol. III, Appendix III-C.)
Infiltration	Permeable Pavements
Innovative LID Designs	Dispersion
Permeable Pavements	Vegetated Roofs
Rain Gardens and Planters	Rainwater Harvesting
Alternate Flow Control Standard	Reverse Slope Sidewalks
Soils	Minimal Excavation Foundations
Trees	Bioretention areas (rain gardens)

4.08 Standards for Dispersion and Infiltration

A. Infiltration

1. Infiltration designs must account for local soil types (see Appendix E), slopes, and groundwater conditions and provide any necessary water quality treatment prior to infiltration. A report by a qualified geotechnical engineer (or comparable licensed professional) and both approved field-testing and laboratory testing may be required to determine site suitability.
2. The design infiltration rate for infiltration systems shall be limited to one-half the measured infiltration rate. Infiltration rates shall be verified at all sites unless waived by the Director.

B. Infiltration and Dispersion

1. No erosion or flooding of downstream properties may result.
2. The discharge point must be downslope of any primary and reserve septic drainfield areas. The City may waive this requirement if site topography clearly prohibits flows from intersecting the drainfield.
3. Except for single-unit residential unit designs that use perforated pipe or that are deeper than they are wide are subject to the registration and non-endangerment requirements of Ecology's Underground Injection Control (UIC) wells program. Residential roof infiltration BMPs and footing drains are exempt from the registration requirement.

C. Setbacks shall be according to the Table 4-3 below:

Table 4-3: Infiltration and Dispersion Setbacks

<i>Setbacks (from edge of trench/well) ¹</i>	<i>Infiltration</i>	<i>Dispersion</i>
Drinking water wells ²	100' radius	No setback
Structure, property line, & sensitive area ³	10'	5'
Slopes \geq 5% ⁴	50'	50'
Right-of-way (may be reduced or waived)	25'	25'
Height above groundwater	3' Trench 1' Drywell	1' Perforated stub-out

Notes:

- ¹ These setback may be eligible for adjustment based on geotechnical evaluation.
- ² Infiltration facilities upslope of drinking water supplies and within the 1-, 5-, and 10-year time of travel zones *must comply with Washington State Department of Health requirements.*
- ³ For infiltration, setback from originating house footing is 15.' For dispersion, consider downspout extensions for structures with basements.
- ⁴ Infiltration facilities should not be built on slopes >25% (4:1). A geotechnical analysis and report may be required for any discharges to slopes >15%, and are required for slopes >20% and to erosion or landslide hazard areas. The analysis and report are also required for infiltration trenches, within 200' of the top of steep slope or landslide hazard area

D. **Simplified Pit Infiltration Test**

The Director may allow the simplified infiltration test described below for (typically minor) projects under one acre.

Deleted: (for sites under one acre)

1. Dig a 2'x 2' hole at the center of the proposed stormwater facility. Depth must be 2 ft. at minimum, or to base of facility.
2. Fill the hole with water; then let it drain down.
3. Repeat. Now the soil should be saturated, allowing a true but simple test of permeability.
4. Fill the hole a third time with water. Using a stopwatch and a yardstick, measure the water level drop at consistent time intervals (every 15 minutes). Determine the infiltration rate in inches per hour even if the hole does not completely drain. Take clear notes (include date, prior conditions, when each hole was filled, did they fill quickly, did the hole drain completely each time, etc.).
5. Notes:
 - a. No more than half the measured rate shall be used for design.
 - b. Underground Injection Control (UIC) registration with Department of Ecology is required for commercial subsurface facilities.

- c. For sites exceeding Ecology's greater than or equal to one (1) acre threshold, see separate infiltration test in the SMMWW.
- d. Test source from City of Portland, Oregon, Bureau of Development Services, "Stormwater Retrofits" Permits and Inspections Brochure, 1/22/09.

4.09 Local Credits

The following BMPs may be used in lieu of, or to reduce, the local requirements for redevelopment and basic stormwater control. The credits and, to a lesser degree, technical notes for each BMP are provided below:

- A. Infiltration. All infiltration shall be considered full treatment, to the degree allowed by Ecology's UIC program.
- B. Innovative LID Designs. Projects may receive a credit determined by the Director for innovative LID designs that are otherwise close to the meeting the local requirements.
- C. Pervious Pavements. All pervious pavements may be modeled as landscaping or gravel (including systems with overflow drains) and they may utilize any infiltration and storage within the rock base. To maximize storage and infiltration, the pervious system may be connected to a control structure.

Pervious pavements include a) porous pavers, specialty pavers patterned for extra void space, or regular pavers sufficiently separated with washed sand/aggregate as to allow the passage of water, b) pervious concrete, and c) pervious asphalt.

- D. Rain Gardens and Planters. Properly designed rain gardens and planters are eligible for credit similar to the downspout dispersion trench. Facilities serving significant developments (e.g. commercial, subdivisions, etc.) shall be professionally engineered. Use high quality soils as specified in SMMWW BMP T5.13.
- E. Alternate LID Flow Control Standard. Stormwater designs that manage runoff close to its source by disconnecting impervious surfaces are allowed to match the full peak release rate of the pre-developed 2-year, 24-hour design storm instead of half that rate. Requirements for the other design storms are unchanged. Designs may include BMPs from the LID Manual, from those summarized in the SMMWW Vol. III, Appendix III-C, or from Table 4.1 for a listing of these BMPs.
- F. Soils. Pasture that is converted to landscaping may be considered fully mitigated if its soils achieve Ecology's T5.13 soil quality requirements, typically by augmenting with compost.
- G. Tree Credits. The tree credit allows areas using trees to be modeled as landscaping or

forest. Two tree credits are extended to developers for private trees and public trees.

1. Private Trees. A site or portions of a site retaining trees in a sufficient number and quality to match a 40% urban tree canopy target can be modeled as “woods in poor condition,” using the single event methodology and runoff curve numbers in the SMMWW Vol. III, Ch. 2.3. A copy of the tree canopy determination must be provided to the City upon request and is subject to review by the Director.
2. Public Trees. New public trees within 25 feet of ground-level impervious surfaces are eligible for the tree credit. The tree credit allows one unit of impervious surface to be modeled as landscaping, and is subject to the following conditions:
 - a. Each deciduous tree planted is equal to 100 square feet of credit; and
 - b. Each evergreen tree planted is equal to 200 square feet of credit.
 - c. The tree may also be planted within 25 feet of an open channel or water body that discharges to the stormwater drainage system.
 - d. Because the time lag between planting and full efficacy of its flow control benefits and a tree’s decreased efficacy during major events, no more than 20% of a site’s new impervious surfaces can be mitigated through the use of this credit. All of the replaced impervious surfaces are eligible for this credit.
 - e. Trees required by the City or other agency (e.g. street trees) are eligible for the credit.
 - f. The size, species, and location of trees must be approved by the Director. Pre-approved trees are listed in Chapter 3.
 - g. The selection, purchase and installation of the tree may be coordinated by the Public Works Department. However, the tree shall not be planted in lieu of existing City programs; that is, the tree cannot be used to replace existing trees, satisfy Tree City USA requirements, close budget gaps for existing tree canopy strategies, etc.
 - h. The tree must be planted either before or as soon as feasible following the placement of the impervious surface receiving the credit and after activities which may harm the tree or its root zone.
 - j. The tree must be planted in the same drainage subbasin as the project; however, the City may require the developer to demonstrate the adequacy of the conveyance system. A map of subbasins is provided in Appendix F.

Comment [VM1]: Find justification

- k. The tree may belong to any public jurisdiction or agency. Copies of the preservation and maintenance agreement with the outside public agency and their policies germane to the perpetual maintenance and replacement of trees shall be provided.

Comment [VM2]: [agreement described where?]

3. General Requirements for Credit Trees

- a. Trees used for stormwater management credit shall be clearly labeled on the site plans and recorded as any other stormwater facility (see Section 4.16 of this Chapter). Use of public trees offsite may be listed in the “Notes” section of the plans.
- b. Trees shall be maintained and protected for the life of development or until any approved redevelopment for which a replacement facility is constructed.
- c. Trees approved for stormwater credit shall not be removed without approval from the City. Trees that are removed or die shall be replaced within six months.
- d. The trees shall be marked and protected from land disturbing activities during construction ten feet outside of the drip line. In no case shall land disturbances or the stacking, staging, storing, or parking of vehicles, equipment, and materials encroach into the drip line, unless approved by the City.

4.10 State Credits

- A. The City will accept all LID credits from the SMMWW Vol. III, Appendix III-C, with any project, including those below the Ecology’s “one-acre threshold”.
- B. The most common infiltration and dispersion BMPs for which credit is granted are summarized in the Table 4-1, and are illustrated in the “Common Onsite Management BMPs” figure with two exceptions:
 - 1. Full dispersion (total exemption) BMPs, which require longer vegetated paths.
 - 2. Roads, sidewalks, soils, and minimal excavation footings.

PART IV: Conveyance

4.11 General

- A. Conveyance, collection, culvert, and bridge design shall be applied to the entire contributing drainage area projected under full build-out conditions and be fully compatible with existing downstream conveyance elements and flow conditions.

- B. Natural drainage flow routes to streams and wetlands shall be maintained, and discharges from the site shall occur at the natural location(s) and elevation(s), to the maximum extent practicable.
- C. Outfalls shall enter existing creeks or drainage channels perpendicular to the channel or angled downstream and have a head wall and scour pad, or rip rap to prevent erosion of the existing bank or channel bottom.
- D. Storm drain conveyance systems shall be designed, installed, and inspected in accordance with the Longview-Kelso Special Provisions & Standard Drawings and the current WSDOT Standard Plans and Specifications for Road, Bridge, and Municipal Construction, with the notations as provided in this Section.
- E. Discharge to a diking district facility requires the diking district's approval.

4.12 Closed Conduit Systems

A. Design Requirements

1. The **25-year storm** shall show free-flowing conditions through the proposed and/or existing conveyance system.
2. The **100-year storm** may overtop the conveyance system, provided:
 - a. The additional flow shall not extend beyond one-half of the width of the outside lane of the traveled way and shall not exceed 4-inch depth at the deepest point, and
 - b. Waters do not rise to elevations more than one foot below that of the lowest aboveground floor of buildings and no portions of a building will be flooded.
3. Backwater. At the discretion of the Director, or for the conditions listed below, a backwater analysis shall be conducted to determine the hydraulic grade line to ensure a minimum of 1.0-foot freeboard between the water surface and the top of any manhole or catch basin for the 25-year storm:
 - a. Pipes with slopes less than 0.5 percent,
 - b. Pipes with velocities over 6.5 feet per second (for sub critical flow only),
 - c. Inlet and outlet pipes forming a sharp angle (45 degrees or greater) at junctions, and

- d. Pipe inverts less than 3 feet deep when entering and leaving junctions.

Detailed information on this procedure can be found in Section 6.6 of the WSDOT Hydraulics Manual (WSDOT 2007) or Section 7 of Hydraulic Engineering Circular No. 22, Urban Drainage Design Manual (FHWA and NHI 2001).

4. Pipe. All storm pipes shall be constructed of high-density polyethylene (HDPE) smooth interior corrugated pipe.
 - a. Alternate Materials. Where required for strength, such as for shallow bury, Class 52 ductile iron pipe will be used. Other pipe materials may be used if approved by the Director.
 - b. Tracer Wire. Plastic pipe shall be laid with marking tape and tracer wire.
5. Velocity. All storm drains shall be on a grade which produces a mean velocity when flowing full of at least three feet per second, unless prohibited by site conditions. The Director may waive this minimum where existing drainage systems make it impractical to meet the standard.
 - a. If velocities exceed 15 feet per second during the 25-year storm, anchors shall be provided at bends and junctions.
 - b. Velocities in pipes other than HDPE and iron are limited to 30 feet per second.
6. Slope.
 - a. For slopes exceeding 25 percent and systems longer than 100 feet, the HDPE pipe shall be anchored at the upstream end and the downstream end shall be placed in a minimum 4 foot section of the next larger pipe size. This sliding sleeve connection allows for the high thermal expansion-contraction coefficient of the pipe material.
 - b. For slopes steeper than 40 percent, the HDPE pipe shall be anchored at least every 100 feet thereafter.
 - c. Other materials have slope restrictions and different anchor requirements.
7. Minimum separations from storm drains to sewers and water lines shall be as required for sewers in the Longview-Kelso Standard Plans & Specifications, or as approved by the Director: 10 feet horizontal and 18 inches below the crown of water lines, or less if as provided in Water Standard Details W-290, W-295, and W-300. Storm lines shall be laid higher than sanitary sewers where possible.

8. The minimum pipe size shall be 12 inches within public right of way unless otherwise approved by the City Engineer. Storm drain lines from building roof drains, and footings shall transition to 12 inches at a cleanout (e.g. catchbasin) installed at the right of way line.
9. Pipes over 8 inches in diameter that “daylight” to the surface shall have a protective grate installed that prohibits wildlife and children from entering the storm line. The grate shall be hinged or otherwise designed to allow for cleaning and to reduce accumulation of debris from behind the grate.
10. The letter ‘D’ shall be stamped into the curb directly above the point where storm pipes (e.g. mainlines, culverts, etc., and not for curb cuts, like roof drains) cross under it.

B. Alignment and Cover

1. All changes in direction shall be made at a manhole, or other approved structure.
2. Storm drain lines shall not be curved between structures unless approved by the Director.
3. Unless otherwise approved, a minimum cover of 24 inches of cover is required above the top of the pipe to the top of the ground surface. There shall be a minimum of one 1-foot separation from the top of pipe to the bottom of the roadway section (e.g. laterals from catch basins).
4. Unless otherwise approved by the Director, in areas of relatively flat terrain, the design engineer must show that sufficient depth is provided at the boundary of the development to properly drain the upstream basin areas.
5. When necessary to locate drains in easements or tracts, the storm drain shall be centered in the easement. However, drains may be offset due to site conditions.
6. The crown of up stream pipes shall not be lower than the crown of downstream pipes, except as noted below:
 - a. Where a minimal fall is necessary between the inlet and outlet pipes in a structure, pipes shall be aligned vertically to (in order of preference): match crowns, match 80% diameters of pipes, match inverts.
 - b. Where pipes are downsized, as approved by the Director. Downsizing of pipes is only considered if:

- (i) No hydraulic jump can occur
- (ii) The downstream pipe slope is significantly greater than the upstream slope
- (iii) Velocities remain in the 3 – 8 fps range

C. Manholes

1. Manholes shall be located at all changes in slope, alignment, pipe size, and at all pipe junctions with present or future storm drains.
2. Manholes shall be spaced no greater than 300 feet.
3. Standard manholes are required when rim to crown of pipe elevations exceed four feet, otherwise flat-top manholes shall be used.
4. The invert elevation of all upstream pipes shall not be lower than the invert elevation of the downstream pipe.
5. The manhole cover shall be stamped "STORM."
6. Storm manholes shall have a sump at least 24 inches below the lowest invert to collect sediment and debris. However, manholes having a mainline pipe entering or exiting at a slope of fifteen percent or greater shall have no sump and be pre-channeled.

D. Collection. Stormwater collection systems shall be designed in accordance with Urban Drainage Design Manual, Second Edition Circular No. 22, 2001 Edition published by the United States Department of Transportation, Federal Highway Administration (FHWA) with the following notes:

1. Curb inlets shall be located in streets at the curb-line to receive stormwater and convey it to the main storm drain.
2. Curb inlets shall be at the following locations, unless otherwise approved by the Director:
 - a. Less than 300 feet apart and in no case shall the spacing be greater than 400 feet,
 - b. In the tangent section immediately in advance of the curb returns on the upstream side of the intersection,
 - c. At all street ends with a descending grade, and

- d. At intermediate locations such that gutter flow does not exceed three 3 feet in width or 3 inches in depth.
3. Catch Basin grates shall be stamped “Dump no Pollutants Outfall to Stream”
4. Catch basins shall have a sump at least 15 inches below the lowest invert to collect sediment and debris.
5. No more than 7,000 sq. ft. of ground-level impervious surface shall drain to an inlet.
6. Curb inlets shall be used with curb and gutter installations up to 8% in tangential grade. Combination curb inlets shall be used for steeper grades.
7. Or as otherwise delineated in the Longview-Kelso Standard Plans & Specifications.

4.13 Open Conveyance

- A. Culverts and bridges shall be designed to pass the 100-year peak discharge from the tributary area assuming full development.
- B. Culverts shall be designed in accordance with the current WSDOT Hydraulics Manual, or as delineated in the Longview-Kelso Standard Plans & Specifications.
- C. Fish passage culverts shall meet the design criteria specified in the Washington Department of Fish and Wildlife Fish Passage Design at Road Culverts (WDFW 2003).
- D. Backwater. A backwater analysis shall be performed if a flow restriction (such as a bridge or culvert) causes flow to rise above normal depth within a channel reach.
- E. Side Slopes. Channel side slopes shall not exceed 2:1. All constructed channels shall be compacted to a minimum 95 percent compaction verified by a modified Proctor test (ASTM D1557/AASHTO T180)
- F. Freeboard.
 1. Channels designed for flows of 10 cubic feet per second (cfs) shall have at least 0.5 feet of freeboard, and 1.0 feet for greater velocities.
 2. All flows shall remain at least one 1.0 feet below the road subgrade during the 100-year storm..
 3. Vertical clearance between the design (100-year) water surface and the bottom of

any part of the bridge shall be a minimum of two feet.

4. Culverts at road crossings in natural perennial channels shall be designed to pass the peak discharge for the 25-year storm such that the headwater does not exceed one and one-half times the culvert diameter.
- G. Lining and Armor. Open channels shall be designed to withstand channel erosion and not degrade water quality.
1. Channels with peak velocities less than 5 feet per second shall be vegetated.
 2. Channels with velocities above 5 feet per second shall be sufficiently armored to the maximum water surface elevation.

4.14 Private Drainage

- A. Drainage Accessibility. Subdivision lots which drain to the rear should be avoided; but if absolutely necessary to collect roof drains, footing drains, and surface run-off, the developer shall:
1. Provide a stormwater easement for the inspection of the private system.
 2. Design and install the system to meet the Uniform Plumbing Code requirements.
 3. Use a French drain where feasible to provide some water quality, some peak flow attenuation, and some dewatering of the property during the wet season.
- B. Stormwater easements shall match those for publicly owned systems, except those for pipes which have a 12 inches or smaller inside diameter that are up to 5 feet deep. These easements may be a minimum of 10 feet wide or equal to any setback in which it is located.

4.15 Subsurface Drainage

Underdrains shall be provided at the following locations:

- A. For all existing springs and tile intercepted during construction.
- B. Where high ground water exists or when it is necessary to reduce the piezometric surface to an acceptable level to prevent land slippage or under-floor flooding of buildings.

4.15 Curb Cuts

- A. When downspouts and footing drains must be connected to the private or public storm sewer systems, perforated connections from the home to the property line or curb shall be preferentially used as practicable.
- B. Drainage from residential roofs and footings may drain directly to a street through the curb under the following circumstances:
 - 1. The building pad ground elevation is at least 2 feet above the existing street curb, and,
 - 2. The existing street is adequately crowned and its drainage system, including curb, gutter, and storm lines, is adequately sized to accept the additional flow.
 - 3. Pressurized outfalls, e.g. sump pumps, shall not be allowed to plume into the street or where they cause standing pools in the gutter, a slip or a vector hazard.
- C. Commercial curb cuts shall not be allowed for new commercial development. Commercial redevelopment may use curb cuts, per approval of the Director

PART V: Additional Requirements

4.16 Tracts and Easements

Storm drainage tract dedication and/or easements shall be required where the conveyance, storage, or treatment of stormwater is identified on the stormwater management design plan and where access is needed to maintain and inspect structural or non-structural stormwater facilities for City maintenance and inspection.

- A. Stormwater tracts and easements shall be approved by the City, then placed on all plats and property deeds and recorded with Cowlitz County.
- B. All storm drain easements shall not be used for any purpose which would interfere with the unrestricted use of the storm drain line. No buildings or other structures that prevent access are permitted within tracts or easements. Fences crossing tracts shall provide gates of sufficient width to provide access for maintenance.
- C. Public Tracts and Easements shall be provided to the City for access, inspection and/or maintenance of all conveyance systems (including watercourses), or other facilities as deemed appropriate by the Director, within the development site, which are to be maintained by the City.
 - 1. Residential detention and treatment facilities will be maintained by the City.
 - 2. Non-structural LID facilities shared by multiple residential lots should be located in

- the right-of-way, easement, or dedicated tract.
3. The City will not maintain private single-family unit rain gardens, or the like.
 4. The City will not maintain private facilities serving commercial, industrial, or managed residential properties, such as apartment complexes.
 5. In lieu of an easement, inspection of private facilities may be allowed through the Maintenance
 6. An easement may be required where access is limited, such as in the rear of a property, where deemed necessary by the City, or as provided in Section 4.13(A).
 7. Examples of easements are located in Appendix G.
- D. Minimum widths for public easements shall be as follows, although the Director may require alternate widths; for example to accommodate structure location or maintenance equipment needs:
1. Storm lines up to twenty-four inches in diameter shall have a minimum easement width of fifteen feet.
 2. Storm lines twenty-four inches and greater in diameter shall have a minimum easement width of twenty feet plus the pipe diameter.
 3. Depths greater than seven feet to the invert shall require wider easements. A slope of one horizontal to one vertical (1:1) from the storm drain invert to the ground surface shall be used in determining easement width.
 4. Channels: sufficient width to cover the 100-year floodplain line or fifteen feet from the waterway centerline, or ten feet from the top of the recognized bank whichever is greater. A fifteen foot wide access easement shall be provided on both sides of the channel for channel widths greater than fourteen feet at the top of the recognized channel.
- E. Easement locations for public storm drains serving a PUD, apartment complex, or commercial/industrial development shall be in parking lots, private drives, or similar open areas which will allow unobstructed vehicle access for maintenance.

4.17 Stormwater Performance Bond

At the discretion of Public Works, the applicant may be required to furnish a stormwater performance bond. This is to ensure that action can be taken by the City, at the applicant's expense, should the applicant fail to initiate or maintain those measures identified in the approved stormwater

management design plan (after being given proper notice and after the timeframe specified by Public Works). If the City takes such action upon such failure by the applicant, the City shall collect from the applicant the difference, should the amount of reasonable cost of such action exceed the amount of the security held.

- A. Term of Performance Bond. The stormwater performance bond furnished pursuant to this section, or the unexpended or un-obligated portion thereof, shall be returned to the applicant within sixty (60) days of issuance by Public Works of the final acceptance of the permanent stormwater BMP. A final inspection by Public Works is required before any performance bond will be released.
- B. Term Extended for Initial Maintenance. At the discretion of Public Works, the stormwater performance bond may be extended beyond the time period specified above to cover a reasonable period of time for testing the BMPs during storm events and for initial maintenance activities. For the purposes of this section, the time shall not exceed two years beyond final acceptance of the construction of the BMP, unless the Director determines that an extension is necessary to ensure that the facility satisfies the maintenance and performance requirements identified in the Manual.
- C. Partial Release of Bond. The Director shall have the discretion to adopt provisions for a partial pro-rata release of the performance bond on the completion of various stages or phases of development.
- D. Bond Estimation. The applicant shall be responsible for determining bond value and submitting the estimation to the Director for approval.
 1. For public facilities, the bond value is to be 125 percent of the estimated cost, set or approved by the Director, for the City to construct the stormwater features and achieve final stabilization.
 2. For private facilities, the Director may allow a cash escrow or other performance security in lieu of a bond. It shall cover 150% of the estimated cost, set or approved by the Director, for the City to fully mitigate the maximum impact that the disturbance and improvements could have on the public storm drainage system. Considerations may include, but are not limited to, project phasing, the erosion control plan, demolition or full disconnection of the new impervious surfaces, final stabilization, and restoration of any hydrologically significant features, such as critical areas, drainage courses, natural detention areas, quality soils, and trees.

Comment [jh3]: Need PW & Legal to review & approve this change.

4.18 As-Built Plans

All applicants are required to submit as-built plans for any permanent stormwater management facilities located on-site after final construction is completed. The plans must show the final design specifications for all stormwater management facilities, meet the criteria for as-built plans in Chapter

1 of this Manual, and be sealed by a registered professional engineer.

4.19 Dedication of Facilities

The City may accept a dedication of a stormwater facility, together with necessary easements and appurtenances, upon a determination and acceptance, as provided herein, except that dedications made during the subdivision platting process shall not be subject to the following process:

- A. Preliminary Determination by Public Works. Upon receipt by the City of an offer of dedication of a stormwater facility, the Director shall make a preliminary determination that the dedication of the facility is appropriate to protect the public health, safety and general welfare, and furthers the goals of the City's stormwater management program and/or associated watershed plans. Budgetary implications may be a component of the determination. The Director shall forward his/her determination to the City Council. Prior to making his/her determination, the Director shall inspect the facility to determine whether it has been properly maintained and is in good repair, and may condition the recommendation of acceptance on completion of any necessary maintenance items.
- B. Acceptance by City Council. City Council may accept the offer of dedication by adoption of a resolution. Upon acceptance, the document dedicating the stormwater facility shall be recorded with the Cowlitz County Auditor at the owner's expense.
- C. Owner to Provide Documentation. The owner, at his sole expense, shall provide any document or information requested by the Director or the City Council in order for a decision to be reached on whether or not to accept the facility.

4.20 Long-Term Operation and Maintenance

- A. Operation and Maintenance Required. All erosion controls, watercourses, and stormwater facilities (including structural and non-structural BMPs, catch basins and other protective devices, necessary access routes, and appurtenances) shall be operated and maintained in accordance with the manufacturer's specifications, the SMMWW, this Manual, the approved stormwater management design plan, and the stormwater maintenance agreement/plan, as discussed below
- B. Responsible Party. The owner shall be responsible for the proper operation and maintenance of the site's stormwater facilities and shall pass such responsibility to any successor owner, unless such responsibility is transferred to the City or to another entity as per Section 4.20 of this Chapter.
- C. Operation and Maintenance Agreement and Plan. The owner of a stormwater facility shall execute a Stormwater Operation and Maintenance Agreement and Plan prior to final acceptance of the project. The agreement shall be approved by the City and

recorded with the County and shall run with the land. The agreement and plan shall, at a minimum, have the following:

1. Designate the responsible party permanently responsible for maintenance.
2. Pass the responsibility for such maintenance to successors in title.
3. Grant Public Works and its representatives the right of entry for the purposes of inspecting all stormwater BMPs at reasonable times and in a reasonable manner. This includes the right to enter a property when Public Works has a reasonable basis to believe that a violation of this Chapter is occurring or has occurred and to enter when necessary for abatement of a public nuisance or correction of a violation of this Chapter.
4. Establish an operation and maintenance plan to ensure the continued effectiveness of the BMPs. The plan shall, at a minimum, include a list of inspection and maintenance tasks, a schedule for routine inspection and maintenance, and actions to be taken when maintenance is required.
5. Include copies of any educational brochures required in Section 4.20 (H).

D. Maintenance Escrow Requirement

1. At the discretion of Public Works, the property owner may be required to post a cash escrow, letter of credit, or other acceptable form of performance security in an amount that would cover costs associated with maintenance and repair in the event of stormwater facility failure, at least 10% of the project engineer's estimate to construct the facility. This instrument is required to be posted prior to completion of construction and release of the Stormwater Performance Bond and remain in place for a minimum of two (2) years.
2. At the discretion of Public Works, the stormwater performance bond may be extended in lieu of the maintenance escrow account.

F. Maintenance Records. The responsible party shall keep records of the BMP's installation and all subsequent maintenance and repairs, and shall retain the records for at least five (5) years. These records shall be made available to Public Works upon inspection or request.

G. Deeds and Covenants for LID. Private home owner deed restrictions and homeowners/building covenants shall be required for all properties with on-site LID BMPs to ensure that the stormwater management applications continue to function as designed. The deed restrictions or covenants shall specifically address and/or append the requirements and responsibilities for long-term management and maintenance of

any LID BMPs. Sample covenant language is provided in Appendix G.

H. Education for LID

1. The developer shall create education measures, for example, fact sheets or brochures, describing the functions of conservation areas and LID BMPs. These education measures shall be developed and distributed to the City and new owners during the initial sale of the property. Brochures or plans shall provide the following:
 - a. An overview describing the function and need for natural resource protection, vegetation retention areas, and LID BMPs.
 - b. A description of the tree/plant species located within the vegetation retention areas and guidelines for maintaining the BMPs.
 - c. Information on any management agreement and plans.
 - d. Contacts for questions on maintenance needs and enforcement.
2. The developer shall provide copies of the educational materials first to the City for approval and filing prior to project to completion, and then to the initial property owner upon sale of the property. The City may provide a copy of the brochure or guide to new property owners at successive sales of the property.

4.21 Enforcement

Enforcement shall be consistent with KMC 13.11.

- A. Protection of Watercourses and Facilities. It shall be a civil or criminal violation to break, block, damage, destroy, uncover, deface or tamper with any watercourse, stormwater facility, or erosion control system.
- B. Public Nuisance Declared. In addition to other remedies, failure to install and/or maintain watercourses, stormwater facilities, or erosion controls as required in this Manual and applicable permits has been declared to be a public nuisance, subject to abatement as provided by KMC 13.11 or the State of Washington.
- C. Suspension of Work or Access
 1. Access to the municipal stormwater drainage system may be suspended if such termination is needed to abate or reduce an illicit discharge.
 2. Work shall be suspended for un-permitted clearing and grading, or for projects that

- fail to provide required runoff controls for land disturbing activities. After the stop-work period, the Director may allow work on-site to recommence, provided that such work is necessary to ensure compliance with this Manual, permits, or an approved stormwater drainage plan or SWPPP.
3. Resumption of work or reinstatement of connection to the municipal stormwater drainage system, without the prior approval of the City, shall be subject to the civil and/or criminal penalties delineated in KMC **XX.XX**.
- D. Financial Liability. The property owner and all persons engaged in development or land-disturbing activity shall be liable, jointly and severally, for all costs incurred by the City in any public nuisance action taken hereunder, or on account of damage or threatened damage to City property or facilities or water bodies, or associated with remedial actions necessitated by the damage or failure to install and/or maintain required stormwater facilities. The City may assess the responsible parties for these costs which shall be a lien on the property, or prorated against the beneficial users of the property, and may be placed on the tax bill and collected as ordinary taxes by the City.

Appendix

- A. **Local and State Flowcharts**
- B. **Design Storm Data**
- C. **Table 4-1: Summary of Most Common State Flow and Quality Control Credits in Ecology's SMMWW**
- D. **Common Onsite Runoff Management BMPs**
- E. **Soil Types**
- F. **City of Kelso Subbasins**
- G. **Example Easement, Covenant, Deed Language**

ORDINANCE NO. _____

AN ORDINANCE OF THE CITY OF KELSO ADDING A NEW SECTION TO THE KELSO MUNICIPAL CODE TO BE ENTITLED “STORMWATER MANAGEMENT,” TO BE CODIFIED AS KMC 13.09, TO GUIDE AND ADVISE ALL WHO MAKE USE OF, CONTRIBUTE WATER TO, OR ALTER THE CITY DRAINAGE SYSTEM, AND TO ENSURE MAINTENANCE OF ALL STORMWATER FACILITIES WITHIN THE CITY BY SETTING MINIMUM STANDARDS FOR THEIR INSPECTION AND MAINTENANCE, AS MORE PARTICULARLY DESCRIBED HEREIN.

WHEREAS, the City finds that stormwater pollution is a problem associated with land utilization and development and the common use of potential pollutants such as pesticides, fertilizers, petroleum products, and numerous others; and

WHEREAS, the City finds that land utilization and development are also known to increase both the volume and speed of peak flows. The resulting erosion, scouring, deposition of sediment, and flooding affect the ecological balance in the waterbody and present safety hazards to both life and property; and

WHEREAS, the City finds that sedimentation and stormwater pollution cause diversity of species to decrease and allow more tolerant (and usually less desirable) species to remain; and

WHEREAS, the City finds that stormwater facilities are a common feature of urban development which must be maintained in order to prevent damage to the public and/or pollution of surface and ground water; and

WHEREAS, the City finds that in the future such problems and dangers will be reduced or avoided if existing properties and future developers, both private and public, provide for stormwater quality and quantity controls; and

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WHEREAS, the City finds that stormwater quality and quantity controls can be achieved when land is developed or redeveloped by implementing appropriate best management practices (BMPs); and

WHEREAS, the City finds that BMPs can be expected to perform as intended only when properly designed, constructed and maintained; and

WHEREAS, the City is required to be in compliance with the Western Washington Phase II Municipal Stormwater Permit (Permit) by August 15, 2009 and WAC 173-218, the Underground Injection Control (UIC) program to regulate stormwater discharges to groundwater through drywells and other types of infiltration systems created under the NPDES permit; now, therefore,

THE CITY COUNCIL OF THE CITY OF KELSO DO ORDAIN AS FOLLOWS:

SECTION 1.

That a new section entitled “Stormwater Management” is hereby added to the Kelso Municipal Code, to be codified as KMC 13.09, which shall provide as follows:

**CHAPTER 13.09
STORMWATER MANAGEMENT**

Sections:

- 13.09.010 Purpose/Intent.**
- 13.09.020 Definitions.**
- 13.09.030 General Provisions.**
- 13.09.035 Stormwater Management Plan Adopted.**
- 13.09.040 Applicability.**
- 13.09.050 General Requirements.**
- 13.09.060 Approval Standards.**
- 13.09.070 Construction Inspection for Permanent Stormwater BMPs.**
- 13.09.080 Easements, Deeds, and Covenants.**
- 13.09.090 Maintenance Agreement and Plan.**
- 13.09.100 Stormwater Performance Bond.**
- 13.09.110 As-Built Plans.**
- 13.09.120 Dedication of Stormwater BMPs.**
- 13.09.130 Ongoing Maintenance for Stormwater BMPs.**
- 13.09.140 Maintenance Escrow Requirement.**

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- 13.09.150 Maintenance, Inspection and Enforcement.
- 13.09.160 Administration.
- 13.09.170 Adjustments, Exceptions, and Appeals.
- 13.09.180 Infractions - Penalty.
- 13.09.190 Misdemeanors - Penalty.
- 13.09.200 Severability.
- 13.09.210 Compatibility with Other Permit and Ordinance Requirements.
- 13.09.220 Legal Authority.
- 13.09.230 Liability.
- 13.09.240 Designation of Public Works: Powers and Duties.

13.09.010 PURPOSE/INTENT.

The purpose of this ordinance is to provide for the health, safety, and general welfare of the citizens of the City through the regulation of runoff from construction, development, and redevelopment. This ordinance establishes methods for controlling the introduction of runoff and pollutants into the stormwater drainage system in order to comply with requirements of the Western Washington Phase II Municipal Stormwater Permit (Permit) process.

The objectives of this chapter are to:

- A. Minimize water quality degradation in streams, ponds, lakes, wetlands and other water bodies;
- B. Minimize the degradation of habitat and habitat forming processes in streams, ponds, lakes, wetlands, and other water bodies;
- C. Minimize the impact of increased volume and runoff rates, flooding, increases in stream temperature, erosion and sedimentation caused by land development and maintenance practices;
- D. Promote site planning and construction practices that are consistent with natural geological, topographical, vegetational and hydrological conditions;
- E. Maintain and protect the City's stormwater management infrastructure and those downstream;
- F. Minimize disruption of hydrologic functions, patterns, and processes;
- G. Regulate the contribution of pollutants to the stormwater drainage system by stormwater dischargers from development and redevelopment;
- H. Provide long-term responsibility for and maintenance of stormwater BMPs;
- I. Establish legal authority to carry out all the inspection and monitoring procedures necessary.
- J. Meet the minimum requirements as established in WAC 173-218 and the Permit.

The intent of this ordinance is to place the obligation of complying with its requirements upon the owner and/or contractor. Neither the City nor any officer, agent, or employee thereof shall incur or be held as assuming any liability by reason or in consequence of any permission, inspection or approval authorized herein, or issued as provided herein, or by reason or consequence of any thing done or act performed pursuant to the provisions of this ordinance.

13.09.020 DEFINITIONS.

For the purposes of this Ordinance, the following definitions shall mean:

- 1. **Amenity.** A pleasant and/or engaging feature that increases attractiveness, value, and/or

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understanding of stormwater.

2. **Best Management Practices (BMP).** The schedules of activities, prohibitions of practices, general good housekeeping practices, pollution prevention and educational practices, maintenance procedures, and other structural or managerial practices that, when used singly or in combination, prevent or reduce the release of pollutants and other adverse impacts to waters of Washington State or the stormwater drainage system.
 - (a) **Source control BMP.** A BMP that is intended to prevent pollution from entering stormwater.
 - (b) **Treatment BMP.** A BMP that is intended to remove pollution from stormwater.
 - (c) **Flow control BMP.** A BMP that is intended to mitigate the impacts of increased surface and stormwater runoff rates generated by development.
 - (d) **Low Impact Development BMP.** A stormwater management and land development strategy applied at the parcel and subdivision scale that emphasizes conservation and use of on-site natural features integrated with engineered, small-scale hydrologic controls to more closely mimic pre-development hydrologic functions.
 - (e) **Experimental BMP.** Any treatment or methodology proposed for treatment or management of stormwater that is not in a current stormwater manual approved by the Washington State Department of Ecology (Ecology).
3. **Bioretention.** An integrated stormwater management practice that uses the chemical, biological, and physical property of plants, microbes, and soils to remove or retain pollutants from stormwater runoff. Bioretention facilities are depressions that can be isolated detention cells, swales for conveyance as well as treatment, or a connected-cell hybrid of the two. Bioretention facilities include compost amended soils, landscape plantings selected for tolerance to a range of conditions and a mulch layer.
4. **City.** The City of Kelso.
5. **Clean Water Act (CWA).** The federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.), and any subsequent amendments thereto.
6. **Clearing.** The destruction and removal of vegetation by manual, mechanical, chemical or other such method.
7. **Common plan of development or sale.** A site where multiple separate and distinct construction activities may be taking place at different times on different schedules, but still under a single plan. Examples include: phased projects and projects with multiple filings or lots, even if the separate phases or filings/lots will be constructed under separate contract or by separate owners (e.g. a development where lots are sold to separate builders); a development plan that may be phased over multiple years, but is still under a consistent plan for long-term development; and projects in a contiguous area that may be unrelated but still under the same contract, such as construction of a building extension and a new parking lot at the same facility. If the project is part of a common plan of development or sale, the disturbed area of the entire plan shall be used in determining permit requirements.
8. **Critical areas.** Areas defined in Kelso Municipal Code Chapter 18.20, with a critical recharging effect on aquifers used for potable water, fish and wildlife habitat conservation areas, frequently flooded areas, geologically hazardous areas, including unstable slopes, and associated areas and ecosystems.
9. **Detention.** Temporary storage of stormwater to facilitate the release of stormwater runoff from the site at a slower rate than it is collected by the stormwater facility system.

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10. **Development.** Means new development, redevelopment, or both, including a combination thereof.
11. **Director.** The City of Kelso Public Works Director or his/her designee.
12. **Ecology.** Means the Washington State Department of Ecology.
13. **Stormwater Manual.** The “Stormwater Management Manual for Western Washington” by Ecology as currently adopted or hereafter modified.
14. **Erosion.** The wearing away of the land surface by running water, wind, ice, or other geological agents, including such processes as gravitational creep.
15. **Excavation.** The mechanical removal of earth material.
16. **Fill.** A deposit of earth material placed by artificial means.
17. **Forest practice.** Any activity conducted on or directly pertaining to forest land and relating to growing, harvesting, or processing timber, including but not limited to road and trail construction; harvesting, final and intermediate; pre-commercial thinning; reforestation; fertilization; prevention and suppression of diseases and insects; salvage of trees; brush control, or slash burning.
18. **Highly contaminated runoff.** Runoff containing toxicants which would violate any water quality standard, including toxicant standards, sediment criteria, and dilution zone criteria.
19. **Highway.** A main public road connecting towns and cities.
20. **Illicit discharge (IDDE).** Any direct or indirect discharge to the stormwater drainage system that is not composed entirely of stormwater.
21. **Impervious surface.** A hard surface area that either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development. 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 roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, packed gravel surfaces, packed earthen materials, and macadam or other surfaces which similarly impede the natural infiltration of stormwater. Open, uncovered retention/detention facilities shall not be considered as 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. Impervious surfaces that meet the criteria for full dispersion or that are fully infiltrated in compliance with the Stormwater Manual shall be excluded in the determination of thresholds for compliance with this ordinance.
22. **Kelso Engineering Design Manual (KEDM).** A manual that sets forth certain standards of design and specifications for public works projects in the City and for projects subject to approval by the Director. The manual is adopted at KMC 13.09.050 and within this ordinance for compliance with stormwater requirements for development.
23. **Land disturbing activity.** Any activity that results in movement of earth, or a change in the existing soil cover (both vegetative and non-vegetative) and/or the existing soil topography. Land disturbing activities include, but are not limited to clearing, grading, filling, and excavation. Compaction that is associated with stabilization of structures and road construction shall also be considered a land disturbing activity. Vegetation maintenance practices or gardening are not generally considered land-disturbing activities.
24. **LID Guidance Manual.** The January 2005 Low Impact Development Technical Guidance Manual for Puget Sound, prepared by the Puget Sound Action Team and the Washington

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State University Pierce County Extension as now or hereafter amended.

25. **Low Impact Development (LID).** A stormwater management and land development strategy applied at the parcel and subdivision scale that emphasizes conservation and use of on-site natural features integrated with engineered, small-scale hydrologic controls to more closely mimic pre-development hydrologic functions.
26. **Maintenance.** Maintenance and repair includes activities conducted on currently serviceable structures, facilities, and equipment that involve no expansion or use beyond that previously existing use. Maintenance includes those usual activities taken to prevent a decline, lapse, or cessation in the use of structures and systems. Those usual activities may include removal and replacement of nonfunctional or poorly functioning facilities, including cases where environmental permits require replacing an existing structure with a different type structure, as long as the functioning characteristics of the original structure are not changed. By way of example is the replacement of a collapsed, fish blocking, round culvert with a new box culvert under the same span, or width, of roadway.
27. **MR.** Ecology’s Minimum Technical Requirement(s) or "Minimum Requirements" for New Development and Redevelopment for land disturbances of one acre or more or that are part of a larger common plan of development or sale.
28. **Municipal Separate Storm Sewer System (MS4).** A conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains):
 - (a) owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State Law) having jurisdiction over disposal of wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the Clean Water Act that discharges to waters of the United States,
 - (b) designed or used for collecting or conveying stormwater,
 - (c) which is not a combined sewer, and
 - (d) which is not part of a Publicly Owned Treatment Works as defined at 40 CFR 122.2.
29. **National Pollutant Discharge Elimination System (NPDES).** The national program for issuing, modifying, revoking, and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the Federal Clean Water Act, for the discharge of pollutants to surface waters of the state from point sources. These permits are referred to as NPDES permits and, in Washington State, are administered by Ecology under authority delegated pursuant to 33 USC § 1342(b).
30. **Native vegetation.** Vegetation comprised of plant species, other than noxious weeds, that are indigenous to the coastal region of the Pacific Northwest and which reasonably could have been expected to naturally occur on the site. Examples include trees such as Douglas fir, western hemlock, western red cedar, alder, big-leaf maple, and vine maple; shrubs such as willow, elderberry, salmonberry, and salal; and herbaceous plants such as sword fern, foam flower, and fireweed.
31. **New development.** Land disturbing activities, including Class IV -general forest practices that are conversions from timber land to other uses; structural development, including construction or installation of a building or other structure; creation of impervious surfaces;

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- and subdivision, short subdivision and binding site plans, as defined and applied in Chapter 58.17 RCW. Projects meeting the definition of redevelopment shall not be considered new development.
32. **Non-stormwater discharge.** Any discharge to the storm drainage system that is not composed entirely of stormwater. Examples may include but are not limited to sanitary wastewater, laundry wastewater, noncontact cooling water, vehicle wash wastewater, radiator flushing wastewater, spills from roadway accidents, and improperly disposed motor oil, solvents, lubricants, and paints.
 33. **Permit (the "Western Washington Phase II Municipal Stormwater Permit").** A permit issued by Ecology under Sections 307, 402, 318, and 405 of the Federal Clean Water Act that authorizes the discharge of pollutants to surface waters of the state. Also known as an NPDES permit.
 34. **Pollutant.** Anything which causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; and noxious or offensive matter of any kind.
 35. **Pollution.** Contamination or other alteration of the physical, chemical, or biological properties of waters of the state, including change in temperature, taste, color, turbidity, or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state as will or is likely to create a nuisance or render such waters harmful, detrimental or injurious to the public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses, or to livestock, wild animals, birds, fish or other aquatic life.
 36. **Pre-developed condition.** For areas that drain directly or indirectly to a river or stream, pre-developed conditions shall mean the native vegetation and soils that existed at a site prior to the influence of Euro-American settlement. The pre-developed condition shall be assumed to be a forested land cover unless reasonable historic information is provided that indicates the site was prairie prior to settlement.
 37. **Project site.** That portion of a property, properties, or right of way subject to land disturbing activities, new impervious surfaces, or replaced impervious surfaces. The total projected area of new, replaced or new plus replaced impervious surfaces for subdivisions shall constitute a project site.
 38. **RCW.** Revised Code of Washington.
 39. **Receiving waters.** Bodies of water or surface water systems to which surface runoff is discharged via a point source of stormwater or via sheet flow.
 40. **Redevelopment.** On a site that is already substantially developed (which means 35% or more of existing impervious surface coverage), the creation or addition of impervious surfaces; the expansion of a building footprint or addition or replacement of a structure; structural development including construction, installation or expansion of a building or other structure; replacement of impervious surface that is not part of a routine maintenance activity; and land disturbing activities, or other project where any other City construction

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- permit is required.
41. **Replaced impervious surface.** For structures, the removal and replacement of any exterior impervious surfaces or foundation. For other impervious surfaces, the removal down to bare soil or base course and replacement.
 42. **Routine Maintenance.** Preventative or cyclical (weekly, monthly, etc.) maintenance that is an essential part of the on-going care and upkeep of a system or facility against normal wear and tear.
 43. **Site.** The area defined by the legal boundaries of one or more parcels of land that is (are) subject to new development or redevelopment. For road projects, the length of the project site and the right-of-way boundaries define the site.
 44. **Soil.** The unconsolidated mineral and organic material on the immediate surface of the earth that serves as a natural medium for the growth of land plants.
 45. **Stormwater.** Runoff during and following precipitation and snowmelt events, including surface runoff and drainage.
 46. **Stormwater Drainage Plan.** The comprehensive report containing all of the technical information and analysis necessary for a regulatory agency to evaluate a proposed new development or redevelopment project for compliance with stormwater requirements.
 47. **Stormwater drainage system.** See “Municipal Separate Storm Sewer System (MS4)”
 48. **Stormwater facility (facility).** A constructed component of a stormwater drainage system designed or constructed to perform a particular function, or multiple functions. Stormwater facilities include but are not limited to pipes, swales, ditches, culverts, street gutters, detention ponds, retention ponds, constructed wetlands, infiltration devices, catch basins, oil/water separators, and biofiltration swales.
 49. **Stormwater Manual.** The “Stormwater Management Manual for Western Washington,” February 2005, as prepared by Ecology. This manual contains BMPs to prevent, control or treat pollution in stormwater and reduce other stormwater-related impacts to waters of the state. The Stormwater Manual is intended to serve as a reference and supplement to this ordinance to control the quantity and quality of stormwater runoff from new development and redevelopment.
 50. **Stormwater Master Plan.** Documents illustrating the location, facility types and connections of the city’s stormwater drainage system. These documents include the current editions of the Kelso Stormwater Master Plan and are created and maintained for the comprehensive management of stormwater for the City of Kelso urban areas and suburban fringe areas.
 51. **Stormwater Pollution Prevention Plan (SWPPP).** A written plan to implement BMPs to identify, prevent, and control the contamination of stormwater discharges to stormwater, stormwater drainage systems and/or receiving waters to the maximum extent practicable.
 52. **WAC.** Washington Administrative Code.
 53. **Wastewater.** Any water or other liquid, other than uncontaminated stormwater, discharged from a facility.
 54. **Waterbody.** Lakes, rivers, ponds, streams, inland waters, sloughs, ditches, and all other surface waters and watercourses within the jurisdiction of the state of Washington.
 55. **Wetlands.** Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

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Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from non-wetland areas to mitigate the conversion of wetlands.

56. **Vegetation.** Organic plant life growing on the surface of the earth.

13.09.030 GENERAL PROVISIONS.

A. Abrogation and Greater Restrictions

It is not intended that this ordinance repeal, abrogate, or impair any existing regulations, easements, covenants, or deed restrictions. However, where this ordinance imposes greater restrictions, the provisions of this ordinance shall prevail.

B. Interpretation

The provisions of this ordinance shall be held to be minimum requirements in their interpretation and application and shall be liberally construed to serve the purposes of this ordinance.

13.09.035 STORMWATER MANAGEMENT PROGRAM ADOPTED. [Reserved]

[At some point in the future, this section will state: “The City of Kelso's Stormwater Management Program, as now or hereafter modified, is hereby adopted by reference and is hereinafter referred to as the Program. The Program contains information assembled for the purposes of identifying existing and projected problems, analyzing alternatives leading to recommendations, and preparing a program to implement recommendations. The City expresses no guarantee of the accuracy of the information, although updates will be made as necessary to reflect best available information. The use of information should be accompanied by adequate checks for accuracy along with good engineering practice and judgment.

The Director shall be authorized to modify the Program, in accordance with the City's adopted Policies and Procedures, to reflect newly developed technical data, models, and other updated information.”]

13.09.040 APPLICABILITY AND EXEMPTIONS.

A. Applicability

This ordinance shall apply to all:

- (1) Water or pollutants directly or indirectly entering the storm drain system generated on any developed and undeveloped lands; and
- (2) New development, redevelopment, and construction site activities, unless explicitly exempted herein.

B. Exemptions

The following development activities are exempt from certain provisions of this chapter:

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- (1) Projects disturbing less than five acres that meet the requirements delineated in the KEDM may apply for an “Erosivity Waiver” to be exempt from 13.09.060(H)(2), the requirement to submit a Stormwater Pollution Prevention Plan (SWPPP),
- (2) Commercial agriculture and forest practices regulated under WAC Title 222, except for Class IV General Forest Practices that are conversions from timber land to other uses; are exempt from all technical and administrative requirements established in this chapter.
- (3) Road Maintenance. The following road maintenance activities are exempt from the additional nine Minimum Requirements required for projects that disturb one (1) acre or more of land or that are part of a larger common plan of development or sale:
 - (a) Pothole and square cut patching, overlaying existing asphalt or concrete pavement with asphalt or concrete without expanding the area of coverage, shoulder grading, reshaping/reggrading drainage systems, crack sealing, resurfacing with in-kind material without expanding the road prism, and vegetation maintenance.
 - (b) Removing and replacing a paved surface to base course or lower, or repairing the roadway base are considered redevelopment subject to MRs #1 - #5, if impervious surfaces are not expanded. However, in most cases, only MR #2, Construction Stormwater Pollution Prevention, will be germane.
 - (c) The following examples of redevelopment are considered new impervious surfaces and have no exemption: resurfacing by upgrading from dirt to gravel, asphalt, or concrete; upgrading from gravel to asphalt, or concrete (for example by extending the pavement edge without increasing the size of the road prism, or paving graveled shoulders); or upgrading from a bituminous surface treatment (“chip seal”) to asphalt or concrete.
- (4) Underground utility projects that replace the ground surface with in-kind material or materials with similar runoff characteristics are only subject to Minimum Requirement #2, Construction Stormwater Pollution Prevention.
- (5) Normal landscape activities and gardening.

13.09.050 GENERAL REQUIREMENTS.

A. City of Kelso Engineering Design Manual

The KEDM, as now or hereafter modified, is hereby adopted by reference for use in implementation of this ordinance. The KEDM contains requirements and technical detail for stormwater modeling, facility design, pollution and flow control, and application of these methods. The Director shall be authorized to modify the KEDM, in accordance with the City’s adopted Policies and Procedures, to reflect newly updated technical data, models, and other information.

B. Stormwater Best Management Practices (BMPs)

- (1) **General:** BMPs shall be used to minimize stormwater pollution and control stormwater flow. BMPs described and/or referenced in the KEDM shall be used to comply with the standards in this ordinance.

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- (2) **Low Impact Development (LID):** Low Impact Development BMPs shall be preferentially used as practicable in all activities subject to regulation in this ordinance. Approved LID BMPs include those methods described in the Low Impact Development Guidance Manual or the Stormwater Manual.
- (3) **Experimental BMPs:** Experimental BMPs are encouraged as a means of solving problems in a manner not addressed by the Manual in an effort to improve stormwater quality technology. Experimental BMPs must be approved prior to implementation by the Director, in accordance with the variance criteria outlined in 13.09.170.

C. Illicit Discharges

Illicit discharges to stormwater drainage systems are prohibited.

D. Surface Water Quality Standards

All activities subject to the requirements of this ordinance are expected to comply with the numerical water quality standards established in WAC 173-201A. The point of compliance is considered the first point of discharge from the development or redevelopment activity to a municipal stormwater drainage facility or to waters of the state.

13.09.060 STANDARDS FOR DEVELOPMENT.

Development projects within the City shall provide the erosion and stormwater controls in accordance with the thresholds and standards described herein.

A. General Applicability

- (1) All projects shall protect the public right-of-way, the stormwater drainage system, receiving waters, and adjoining properties from the deposition of materials, discharge of sediments and other pollutants, and damage from increased surface and subsurface flow rates caused by the project.
- (2) All projects shall comply with the City’s general design and construction criteria for stormwater drainage systems contained in the KEDM.

B. Erosion and Sediment Control

Additionally, projects disturbing 5,000 square feet or more of land are required to:

- (1) Obtain a local Excavation and Grading permit for the project prior to the land disturbance (this permit may be waived if a Right-of-Way, Building, or Public Improvement permit for the same project has been issued); and
- (2) Submit a site erosion and sediment control plan, and if necessary, any supplemental information such as narratives, specifications, and/or calculations.
- (3) Provide and install adequate runoff controls per an approved plan prior to land disturbing activity.

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C. Basic Stormwater Control

Additionally, projects creating 5,000 square feet or more of new impervious surfaces (cumulative over conditions existing in 1999) are required to:

- (1) Submit a Stormwater Drainage Plan and supporting information (e.g. design calculations, geotechnical report, details, specifications, and maintenance requirements);
- (2) Satisfy water quality, quantity, and amenity criteria as outlined in the KEDM.

D. Source Control

- (1) Additionally, any new development or redevelopment, regardless of size, that is identified by the City to have the potential to generate highly contaminated runoff shall design and implement a level of treatment commensurate with the risk.
- (2) Additionally, all projects requiring City approval that are changing the intended use of a parcel to one identified in the KEDM as needing oil/water separation, shall provide such treatment.

E. Redevelopment

Additionally, projects that create and/or replace 5,000 square feet or more of impervious surface that are not otherwise required in paragraphs C and H of this section to provide stormwater controls, shall do one or more of the following:

- (1) Provide water quality treatment for at least 30% of the site, and/or
- (2) Reduce total site run-off by at least 20% below pre-existing conditions, and/or
- (3) Apply innovative approaches to maximize onsite management of runoff (e.g. parking lot, landscaping, vegetated roofs, and/or existing drainage retrofits), and/or
- (4) Provide an equivalent level of treatment or watershed improvement offsite (e.g. street trees, open space dedication, etc.) and/or
- (5) Address downstream channel, capacity, or flooding issues through improvements offsite, and/or
- (6) Implement any combination of (1) through (5) above that is acceptable to the City. Controls required in paragraphs D above may also be used toward satisfying these criteria.

G. Additionally, projects that disturb one (1) acre or more of land or that are part of a larger common plan of development or sale must obtain the state Construction NPDES Permit if required by Ecology.

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H. Applicability of the Nine Minimum Requirements

Additionally, new development, redevelopment, and construction site activities that result in land disturbance of one (1) acre or more, including projects less than one acre that are part of a larger common plan of development or sale, must satisfy one or more of the Minimum Requirements required by Ecology and delineated in the KEDM. The Minimum Requirements are:

1. Site Plan
2. Construction SWPPP
3. Source Control
4. Preserve Natural Drainage
5. On-site Runoff Management
6. Runoff Treatment
7. Flow Control
8. Wetlands Protection, and/or
9. Operations and Maintenance

They are subject to the site planning and BMP selection and design criteria of Ecology’s Stormwater Management Manual for Western Washington, or other equivalent manual approved by Ecology.

This section identifies thresholds that determine the applicability of these nine Minimum Requirements (MR) to projects (that disturb at least one acre, or that are part of a larger common plan of development or sale that disturbs at least one acre).

(1) Development

(a) All new development shall be required to comply with MR #2.

(b) The following new development shall comply with MRs #1 through #5 for the new and replaced impervious surfaces and the land disturbed:

- Creates or adds 2,000 square feet, or greater, of new, replaced, or new plus replaced impervious surface area, or
- Has land disturbing activity of 7,000 square feet or greater.

(c) The following new development shall comply with MRs #1 through #9 for the new impervious surfaces and the converted pervious surfaces:

- Creates or adds 5,000 square feet, or more, of new impervious surface area, or
- Converts ¾ acres, or more, of native vegetation to lawn or landscaped areas, or
- Converts 2½ acres, or more, of native vegetation to pasture.

(2) Redevelopment

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(a) All redevelopment shall be required to comply with MR #2. In addition, all redevelopment that exceeds certain thresholds shall be required to comply with additional MRs as follows.

(b) The following redevelopment shall comply with Minimum Requirements #1 through #5 for the new and replaced impervious surfaces and the land disturbed:

- The new, replaced, or total of *new plus replaced* impervious surfaces is 2,000 square feet or more, or
- 7,000 square feet or more of land disturbing activities.

(c) The following redevelopment shall comply with MRs #1 through #9 for the new impervious surfaces and converted pervious areas:

- Adds 5,000 square feet or more of *new* impervious surfaces or,
- Converts ¾ acres, or more, of native vegetation to lawn or landscaped areas, or
- Converts 2½ acres, or more, of native vegetation to pasture.

(d) If the runoff from the new impervious surfaces and converted pervious surfaces is not separated from runoff from other surfaces on the project site, the stormwater treatment facilities must be sized for the entire flow that is directed to them.

(e) An equivalent (flow and pollution characteristics) area within the same site can be used to meet the MRs. For public roads' projects, the equivalent area does not have to be within the project limits, but must drain to the same receiving water.

(3) Additional Requirements for Re-development Project Sites

(a) For road-related projects, runoff from the replaced and new impervious surfaces (including pavement, shoulders, curbs, and sidewalks) shall meet all the MRs (#1 through #9) if the new impervious surfaces total 5,000 square feet or more and total 50% or more of the existing impervious surfaces within the project limits. The project limits shall be defined by the length of the project and the width of the right-of-way.

(b) Other types of redevelopment projects shall comply with all the MRs (#1 through #9) for the new and replaced impervious surfaces if the total of new plus replaced impervious surfaces is 5,000 square feet or more, and the valuation of proposed improvements – including interior improvements – exceeds 50% of the assessed value of the existing site improvements.

(c) The City may adopt a plan and schedule, in accordance with the Adjustment, Exception/Variance, and/or Basin Planning provisions of this Ordinance, to provide regional treatment, flow control, and/or wetlands protection to the replaced impervious surfaces of redevelopment projects.

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(d) The City may grant a variance/exception to the application of the flow control requirements to replaced impervious surfaces if such application imposes a severe economic hardship per Section 6 13.09.170.

(4) Basin/Watershed Planning

The City may allow alternative or regional approaches to treatment, flow control, and wetlands protection per the Basin Planning provisions of the Permit.

I. Financial liability / public nuisance declared

In addition to other remedies, vandalism of or failure to install and/or maintain water courses or stormwater facilities as required in this ordinance and applicable permits is hereby declared to be a public nuisance, subject to abatement as provided by applicable laws of the City or the State of Washington. The property owner and all persons engaged in development or land-disturbing activity shall be liable, jointly and severally, for all costs incurred by the City in any public nuisance action taken hereunder, or on account of damage or threatened damage to City property or facilities or water bodies, or associated with remedial actions necessitated by the failure to install and/or maintain required stormwater facilities.

13.09.070 CONSTRUCTION INSPECTION FOR PERMANENT STORMWATER BMPS.

A. Notice of Construction Commencement

The applicant must notify Public Works before the commencement of construction. Public Works may, at its discretion, issue verbal or written authorization to proceed with critical construction components, such as installation of permanent stormwater BMPs based on stabilization of the drainage area and other factors.

B. Construction Inspections by Public Works or its Representatives

Public Works or its representatives shall conduct periodic inspections of the stormwater BMPs shown on the approved stormwater management design plan, and especially during critical installation and stabilization steps. All inspections shall be documented in writing. The inspection shall document any variations or discrepancies from the approved plan, and the resolution of such issues. Additional information regarding inspections can be found in the KEDM. A final inspection by the Stormwater Authority is required before any performance bond or portion thereof, shall be released.

13.09.080 EASEMENTS, DEEDS AND EDUCATION.

A. Easements

Storm drainage easements shall be required where the conveyance, storage, or treatment of stormwater is identified on the stormwater management design plan, and where access is needed to structural or non-structural stormwater measures.

The following conditions shall apply to all easements:

- (1) Dimensions: Easements shall be of a width and location specified in the KEDM.

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- (2) Easements Approved Before Plat Approval: Easements shall be approved by Public Works and shall be recorded with Cowlitz County and on all property deeds.
- (3) With the exception of managed properties, such as apartment complexes, all residential stormwater facilities shall be placed in the public right of way, or a full easement shall be granted to the City for inspection and maintenance.

B. Deeds and Covenants for LID

Private home owner deed restrictions and homeowners/building covenants shall be required for all properties with onsite LID BMPs to ensure that the stormwater management applications continue to function as designed. The deed restrictions or covenants shall specifically address and/or append the requirements and responsibilities for long-term management and maintenance of any LID BMPs.

C. Education

Education measures (e.g. fact sheet or brochure) describing the functions of conservation areas and LID BMPs shall be developed and distributed during the initial and all successive sales of properties using LID BMPs.

13.09.090 MAINTENANCE AGREEMENT AND PLAN.

A. Responsible Party

The owner shall be responsible for the operation and maintenance of stormwater facilities and shall pass such responsibility to any successor owner, unless such responsibility is transferred to the City or to another governmental entity in 13.09.120

B. Requirement for Maintenance Agreement & Plan

If a stormwater management design plan requires structural or nonstructural measures, the owner shall execute a stormwater maintenance agreement prior to Public Works granting final approval for the plan, or any plan of development or other development for which a permit is required under this Ordinance. The agreement shall be recorded in the office of the clerk of the circuit court for Cowlitz County and shall run with the land.

C. Required Elements for Maintenance Agreement & Plan

The stormwater maintenance agreement shall be in a form approved by the City, and shall, at a minimum:

- (1) **Designate Responsible Party:** Designate the owner or other legally established entity (responsible party) which shall be permanently responsible for maintenance of the structural or non-structural measures required by the plan.
- (2) **Pass Responsibility to Successors:** Pass the responsibility for such maintenance to successors in title.
- (3) **Right of Entry for Stormwater Authority:** Grant Public Works and its representatives the right of entry at reasonable times and in a reasonable manner for the purposes of inspecting all stormwater BMPs. This includes the right to enter a property when Public

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Works has a reasonable basis to believe that a violation of this Ordinance is occurring or has occurred and to enter when necessary for abatement of a public nuisance or correction of a violation of this Ordinance.

- (4) **Maintenance Plan:** Ensure the continued performance of the maintenance obligations required by the plan and this ordinance through a maintenance plan (which may be an attachment to the actual maintenance agreement). The plan shall include a list of inspection and maintenance tasks, a schedule for routine inspection and maintenance, actions to be taken when maintenance is required, and other items listed in the KEDM.

13.09.100 STORMWATER PERFORMANCE BOND.

A. Stormwater Performance Bond

At the discretion of Public Works, the applicant may be required to furnish a stormwater performance bond. This is to ensure that action can be taken by the City, at the applicant's expense, should the applicant fail to initiate or maintain those measures identified in the approved stormwater management design plan (after being given proper notice and within the time specified by Public Works). If the City takes such action upon such failure by the applicant, the City shall collect from the applicant the difference should the amount of reasonable cost of such action exceed the amount of the security held.

B. Term of Performance Bond

The stormwater performance bond furnished pursuant to this section, or the unexpended or unobligated portion thereof, shall be returned to the applicant within sixty (60) days of issuance by Public Works of the final acceptance of the permanent stormwater BMP by the Public Works Department. A final inspection by Public Works is required before any performance bond will be released.

C. Term Extended for Initial Maintenance

At the discretion of Public Works, the stormwater performance bond may be extended beyond the time period specified above to cover a reasonable period of time for testing the BMPs during storm events and for initial maintenance activities. For the purposes of this section, the time shall not exceed 2 years.

D. Partial Release of Bond

The Public Works shall have the discretion to adopt provisions for a partial pro-rata release of the performance bond on the completion of various stages or phases of development.

E. Bond Estimation

The applicant shall be responsible for determining bond value and submitting the estimation to Public Works for approval. The bond value is to be 125 percent of the replacement value of stormwater features.

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13.09.110 AS-BUILT PLANS.

All applicants are required to submit as-built plans for any permanent stormwater management facilities located on-site after final construction is completed. The plans must show the final design specifications for all stormwater management facilities, meet the criteria for as-built plans in the KEDM, and be sealed by a registered professional engineer.

13.09.120 DEDICATION OF STORMWATER BMPs.

The owner of a stormwater facility required by this Ordinance may offer to the City for dedication any such stormwater facility, together with such easements and appurtenances as may be reasonably necessary, as provided herein:

- (1) **Preliminary Determination by Public Works:** Upon receipt of such offer of dedication by the City, Public Works shall make a preliminary determination that the dedication of the facility is appropriate to protect the public health, safety and general welfare, and furthers the goals of the City’s stormwater management program and/or associated watershed plans. Public Works shall forward its determination to the City Council. Prior to making its determination, Public Works shall inspect the facility to determine whether it has been properly maintained and is in good repair.
- (2) **Acceptance by City Council:** City Council may accept the offer of dedication by adoption of a resolution. The document dedicating the stormwater BMP shall be recorded in the office of the clerk of the circuit court for Cowlitz County.
- (3) **Owner to Provide Documentation:** The owner, at his sole expense, shall provide any document or information requested by Public Works or the City Council in order for a decision to be reached on accepting the facility.

13.09.130 ONGOING MAINTENANCE FOR STORMWATER BMPs.

A. Maintenance Responsibility

The responsible party named in the recorded stormwater maintenance agreement shall maintain in good condition and promptly repair and restore all structural and non-structural stormwater BMPs and all necessary access routes and appurtenances (grade surfaces, walls, drains, dams and structures, vegetation, erosion and sedimentation controls, and other protective devices). Such repairs or restoration and maintenance shall be in accordance with the approved stormwater management design plan, the stormwater maintenance agreement, and the stormwater maintenance plan.

B. Maintenance Inspection by Public Works or its Representatives

Public Works or its representatives shall conduct periodic inspections for all stormwater facilities following project completion. All inspections shall be documented in writing. The inspection shall document any maintenance and repair needs and any discrepancies from the stormwater maintenance agreement and stormwater maintenance plans.

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C. Records of Maintenance Activities

The responsible party shall make records of the installation and of all maintenance and repairs, and shall retain the records for at least five (5) years. These records shall be made available to Public Works during inspection of the BMP(s) and at other reasonable times upon request.

D. Failure to Provide Adequate Maintenance

In the event that the stormwater BMP has not been maintained and/or becomes a danger to public safety or public health, Public Works shall notify the responsible party by registered or certified mail. The notice shall specify the measures needed to comply with the maintenance agreement and the maintenance plan and shall specify that the responsible party has thirty (30) days or other time frame mutually agreed to between Public Works and the responsible party, within which such measures shall be completed. If such measures are not completed, then Public Works shall pursue enforcement procedures pursuant to Section 7 of this Ordinance.

If a responsible person fails or refuses to meet the requirements of an inspection report, maintenance agreement, or maintenance plan the City, after thirty (30) days written notice (except, that in the event the violation constitutes an immediate danger to public health or public safety, 24 hours notice shall be sufficient), may correct a violation of the design standards or maintenance requirements by performing the necessary work to place the BMP in proper working condition. The City may assess the responsible party for the cost of repair work which shall be a lien on the property, or prorated against the beneficial users of the property, and may be placed on the tax bill and collected as ordinary taxes by the City.

13.09.140 MAINTENANCE ESCROW REQUIREMENT.

The property owner is required to post a cash escrow, letter of credit, or other acceptable form of performance security in an amount that would cover costs associated with maintenance ~~or repair~~ in the event of BMP failure. This instrument is required to be posted prior to completion of construction and release of the Stormwater Performance Bond and remain in place for a minimum of two (2) years.

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13.09.150 MAINTENANCE, INSPECTION AND ENFORCEMENT.

A. General Requirements

- (1) **Maintenance required:** All stormwater facilities shall be maintained in accordance with this ordinance and the KEDM. Systematic, routine preventive maintenance is preferred.
- (2) **Compliance:** Property owners are responsible for the maintenance, operation and repair of stormwater drainage systems and BMPs on their properties unless the City has accepted maintenance responsibility in writing and a written easement exists granting the City an adequate and sufficient right, at the City's discretion, to enter the property and conduct these activities. Property owners shall maintain, operate and repair the facilities in compliance with the requirements of this ordinance and the KEDM.

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B. Administration: The Director shall develop and administer an inspection program for stormwater facilities in Kelso.

C. Inspection Program

- (1) **Authorization.** Whenever implementing the provisions of the inspection program or whenever there is cause to believe that a violation of this ordinance has been or is being committed, the inspector is authorized to inspect stormwater drainage systems within Kelso to determine compliance with the provisions of this ordinance.
- (2) **Development inspection:** All new development shall provide for and install adequate runoff controls per an approved Stormwater Drainage Plan and SWPPP. Failure to provide such required runoff controls prior to or simultaneously with the commencement of land disturbing activities shall result in an order to stop all work upon the site for a minimum of 3 working days. After the stop-work period, the Director may allow work onsite to recommence, provided that such work is necessary to bring the site into compliance with this ordinance, permits, or an approved Stormwater Drainage Plan or SWPPP. Once the site is found to be in compliance, land disturbing activities shall be allowed to continue.

D. Enforcement

- (1) **Orders:** The Director shall have the authority to issue to an owner or person an order to install, maintain or repair a component of a stormwater facility or BMP to bring it in compliance with this ordinance, the Stormwater Manual, and/or City regulations. The order shall include:
 - (a) A description of the specific nature, extent and time of the violation and the damage or potential damage that reasonably might occur;
 - (b) A notice that the violation or the potential violation cease and desist and, in appropriate cases, the specific corrective actions to be taken; and
 - (c) A reasonable time to comply, depending on the circumstances.
- (2) **Civil penalty:** In addition to any other remedy or sanction available, a person who fails to comply with an order issued by the Director or the Kelso City Council pursuant to this chapter, or who fails to conform to the terms of an approval issued, shall be subject to a civil penalty.
 - (a) **Amount of penalty.** Violation of any of the provisions of this Chapter shall constitute a civil infraction and upon appropriate finding, the violator shall be assessed a civil penalty as established by the court, not to exceed five hundred dollars (\$500), or as hereinafter amended. Each day of violation shall constitute a separate and distinct infraction.

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(b) **Aiding or abetting.** Any person who, through an act of commission or omission, aids or abets in the violation shall be considered to have committed a violation for the purposes of the civil penalty.

(c) **Notice of penalty.** A civil penalty shall be imposed by the Director, by a notice in writing, which shall be served either by certified mail with return receipt requested or by personal service, to the person incurring the same. The notice shall describe the violation, the date(s) of violation, and shall order the acts constituting the violation to cease and desist, and, in appropriate cases, require necessary corrective action within a specified time.

(d) **Application for remission or mitigation.** Any person incurring a penalty may apply in writing within 10 days of receipt of the Notice of penalty to the Director for remission or mitigation of such penalty. Upon receipt of the application, the Director may remit or mitigate the penalty only upon a demonstration of extraordinary circumstances, such as the presence of information or factors not considered in setting the original penalty. The Director's decision may be appealed to the Hearing Examiner within 10 days of the decision.

(e) **Appeal of civil penalty.** Persons incurring a penalty imposed by the Director may appeal in writing within 10 days of the receipt of the notice of penalty to the Hearing Examiner. The Hearing Examiner shall hold a de novo hearing to consider the appeal and may affirm, modify or reverse the penalty. The decision of the Hearing Examiner may be appealed to Superior Court within 10 days of the receipt of the Hearing Examiner's decision. A fee to appeal the civil penalty and shall be one thousand five hundred dollars (\$1,500) shall be paid to the City along with the appeal.

(3) **Penalties due:** Penalties imposed under this Section shall become due and payable 10 days after notice of the penalty is mailed or delivered, whichever occurs first, unless application for remission or mitigation is made or an appeal is filed. Whenever an application for remission or mitigation is made or an appeal to the Hearing Examiner is filed (including payment of all applicable Hearing Examiner fees), penalties shall become due and payable 10 days after the date of the decision regarding the remission or payable after all review proceedings and a final decision has been issued confirming all or part of the penalty. If the amount of a penalty owed is not paid within the time specified in this Section, the City may take actions necessary to recover such penalty.

(4) **Penalty recovered:** Penalties recovered shall be paid to the Stormwater utility.

E. City Action

In addition to any other remedies the City may have under this ordinance or at law or in equity, nothing in this ordinance or elsewhere within this Code shall prevent the City from effecting repairs or maintenance to stormwater facilities if the Director determines that imminent danger to public safety, health or welfare, or public or private property, or critical areas or habitat is likely as a result of the actions or inaction of the property owner(s). If the City effects repairs or

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maintenance, the cost will be charged to the property owner(s) together with any penalties incurred under this ordinance and any costs of collection (including attorneys' fees), all of which shall be considered a lien against the subject property and also collectable as an *in personam* debt against the property owner(s).

13.09.160 ADMINISTRATION.

A. Director

The Director shall administer this ordinance and shall have the authority to develop and implement administrative procedures to implement and enforce this ordinance.

B. Review and approval

The Director may approve, conditionally approve or deny an application for activities regulated by this ordinance.

13.09.170 ADJUSTMENTS, EXCEPTIONS, AND APPEALS.

A. Authority

The Director may grant an adjustment or exception from the requirements of this ordinance. In so granting, the Director may prescribe conditions that are deemed necessary or desirable for the public interest.

B. Adjustments

Adjustments to the requirements of this ordinance may be granted provided that a written finding of fact is prepared, that addresses the following:

- (1) The adjustment provides substantially equivalent environmental protection.
- (2) Based on sound Engineering practices, the objectives of safety, function, environmental protection and facility maintenance, are met.

C. Exceptions and variances

Exceptions to the requirements of this ordinance may be granted provided that a written finding of fact that documents the City's determination to grant an exception, and

- (1) The exception will not increase risk to the public health and welfare, nor injurious to other properties in the vicinity and/or downstream, and to the quality of waters of the state; and
- (2) The exception is the least possible exception that could be granted to comply with the intent of the Minimum Requirements.

Additionally, exceptions to 13.09.060(H) may be granted only if such an application imposes a

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severe and unexpected economic hardship, according to the criteria provided in the KEDM, and:

- (1) Prior legal public notice is provided of an application for an exception, and
- (2) Legal public notice of the City’s decision on the application is published, and
- (3) Ecology approval is required for any jurisdiction-wide exception, and
- (4) The City keeps records, including the written findings of fact, of all exceptions to the MRs.

D. Prior approval

Any variance shall be approved prior to permit approval and construction.

E. Duration of variance

Variances granted shall be valid for 2 years, unless granted for a shorter period.

F. Right of appeal

Except as otherwise provided in this ordinance, all actions of the Director in the administration and enforcement of this ordinance shall be final and conclusive, unless within 30 days of receipt of the Director's action, the original applicant or an aggrieved party files a notice of appeal with the Hearing Examiner for review of the action. The decision of the Hearing Examiner shall be final and conclusive unless, within 10 days after receipt of the decision of the Hearing Examiner, an aggrieved party appeals the same to Cowlitz County Superior Court.

13.09.180 INFRACTIONS - PENALTY.

A violation of any provision of this ordinance, other than as set forth in Section 13.09.070 of this ordinance, shall be considered an infraction punishable by a fine not to exceed five hundred dollars (\$500), or as hereinafter amended. This penalty shall be in addition to any other remedy or sanction provided in this ordinance or by other law or in equity.

The court may order, in addition to any fine imposed, that a person found to have committed an infraction shall make restitution to any person damaged by the violation.

13.09.190 MISDEMEANORS - PENALTY.

Any violation of this ordinance which results in damage to public or private property, other than the property of the violator, in an amount greater than \$250, or as hereinafter amended, or which results in any physical injury to a person shall be a misdemeanor. For purposes of this section "damage" shall include cost to restore as well as loss of value.

Each second or subsequent violation of this ordinance by any person within a period of three years shall be a misdemeanor.

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Each misdemeanor shall be punishable by a fine not to exceed one thousand nine hundred (\$1,900) or 90 days in jail, or as hereinafter amended, or both. This penalty shall be in addition to any other remedy or sanction provided in this ordinance or by other law or in equity.

The court may order, in addition to any fine imposed, that a person found to have committed a misdemeanor shall make restitution to any person damaged by the violation.

13.09.200 SEVERABILITY.

The provisions of this Ordinance are hereby declared to be severable. If any provision, clause, sentence, or paragraph of this Ordinance or the application thereof to any person, establishment, or circumstances shall be held invalid, such invalidity shall not affect the other provisions or application of this Ordinance.

If this Ordinance is in conflict with any other section of the Kelso Municipal Code, this section shall control.

13.09.210 COMPATIBILITY WITH OTHER PERMIT AND ORDINANCE REQUIREMENTS.

This ordinance is not intended to interfere with, abrogate, or annul any other ordinance, rule or regulation, statute, or other provision of law. The requirements of this ordinance should be considered minimum requirements, and where any provision of this ordinance imposes restrictions different from those imposed by any other ordinance, rule or regulation, or other provision of law, whichever provisions are more restrictive or impose higher protective standards for human health or the environment shall be considered to take precedence.

13.09.220 LEGAL AUTHORITY.

This ordinance is adopted pursuant to authority conferred by and in accordance with the Permit.

13.09.230 LIABILITY.

Any person who undertakes or causes to be undertaken any land disturbance shall ensure that soil erosion, sedimentation, increased pollutant loads and changed water flow characteristics resulting from the activity are controlled so as to minimize pollution of receiving waters. The requirements of this ordinance are minimum standards and a person's compliance with the same shall not relieve such person from the duty of enacting all measures necessary to minimize pollution of receiving waters.

13.09.240 DESIGNATION OF PUBLIC WORKS: POWERS AND DUTIES.

Public Works shall administer and enforce this ordinance, and may furnish additional policy, criteria and information including specifications and standards, for the proper implementation of the requirements of this ordinance.

SECTION 2.

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This Ordinance shall be in full force and effect 5 days after its passage and publication of summary as required by law.

ADOPTED by the City Council and SIGNED by the Mayor this ____ day of _____, 20_____.

MAYOR

ATTEST/AUTHENTICATION:

CITY CLERK

APPROVED AS TO FORM:

CITY ATTORNEY

PUBLISHED: _____

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