

1 **40.380 STORMWATER AND EROSION CONTROL**

2
3 **40.380.010 INTRODUCTION**

4
5 A. Purpose.

6 The purpose of this chapter is to safeguard public health, safety and welfare by
7 protecting the quality of surface and ground waters for drinking water supply,
8 recreation, fishing and other beneficial uses through the application of best
9 management practices (BMPs) for stormwater management and erosion control.

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11 B. Applicability.

- 12 1. The provisions of this chapter shall apply to all new development, re-
13 development, and drainage projects consistent with the *Stormwater*
14 *Management Manual for Western Washington (SMMWW)* as modified by this
15 chapter, and the county's *Stormwater Manual*.
- 16 2. Applicability of this chapter may be modified by Sections 40.380.020(A)(7)
17 and (8).
- 18 3. Meeting the requirements of this chapter is the joint and severable
19 responsibility of both the owner(s) of the site on which land-disturbing activity
20 occurs and the person(s) undertaking such activity. In addition, if the land-
21 disturbing activity involves a county-issued permit, the applicant is also
22 responsible for meeting the requirements of this chapter.
- 23 4. The responsible official is authorized to enforce the provisions of this chapter
24 using the remedies and procedures in Title 32.

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26 C. Exemptions.

- 27 1. Exemptions to the Minimum Requirements (listed in Section 40.380.010(D))
28 shall be granted for the following activities:
- 29 a. Forest practices regulated under Title 222 WAC, except Class IV General
30 Forest Practices that are conversions from timber land to other uses.
- 31 b. Commercial agriculture practices involving working the land for production.
32 However, the conversion from timber land to agriculture and the
33 construction of new impervious surfaces are not exempt. Agricultural uses
34 must occur on property that is either:
- 35 (1) participating in a current use assessment classification for agricultural
36 land pursuant to Chapter 84.34 RCW or is eligible for such current use
37 assessment classification; or
- 38 (2) conducted under a farm management plan approved by the Clark
39 Conservation District.
- 40 c. Normal landscape maintenance activities and gardening.
- 41 d. Oil and gas field activities or operations including construction of drilling
42 sites, waste management pits, and access roads, as well as construction

1 of transportation and treatment infrastructure such as pipelines, natural
2 gas treatment plants, natural gas pipeline compressor stations, and crude
3 oil pumping stations. Operators are encouraged to implement BMPs to
4 minimize erosion and to control sediment during and after construction
5 activities to help ensure protection of surface water quality during storm
6 events.

7 e. The following road maintenance practices:

8 (1) pothole and square cut patching;

9 (2) overlaying existing asphalt or concrete pavement without expanding
10 the area of coverage;

11 (3) shoulder grading;

12 (4) regrading/reshaping drainage systems;

13 (5) crack sealing;

14 (6) resurfacing with in-kind material without expanding the road prism;
15 and

16 (7) vegetation management.

17 2. Exemptions to specific Minimum Requirements shall be granted for the
18 following activities:

19 a. The construction of single-family homes, duplexes, and their accessory
20 structures may be exempt from Minimum Requirements #6 through #10,
21 provided that the project site is included in a stormwater plan previously
22 approved by the county.

23 b. Drainage projects that are not new development or re-development and
24 do not create new underground injection control wells are exempt from
25 Minimum Requirement #6, and the responsible official may waive all or
26 parts of Minimum Requirement #1 if the project meets other applicable
27 requirements of this chapter.

28 c. Underground utility projects that replace the ground surface with in-kind
29 material or materials with similar runoff characteristics are only subject to
30 Minimum Requirement #2.

31 d. New development and re-development meeting the criteria in Appendix I-
32 E of the *SMMWW* are exempt from Minimum Requirement #7, provided
33 that:

34 (1) The discharge structure is designed to avoid erosion during all storms
35 up to the one hundred- (100-) year storm; and

36 (2) If an existing discharge structure is used:

37 (a) The discharge structure must meet the requirements of Section
38 40.380.010(C)(2)(d)(1); and

39 (b) The discharge structure and conveyance system leading to the
40 discharge must have adequate capacity to meet the requirements
41 of this chapter.

42 e. In addition to the Columbia River, the Lewis River downstream of its
43 confluence with Quartz Creek, and the East Fork of the Lewis River

- 1 downstream of its confluence with Big Tree Creek, Appendix I-E of the
2 *SMMWW* is appended to include Vancouver Lake and Lake River.
- 3 f. Infill and re-development projects are exempt from the one tenth (0.1) cfs
4 flow increase threshold contained in Minimum Requirement #7.
- 5 g. New development and re-development are exempt from Wetland
6 Protection (Minimum Requirement #8), provided that:
- 7 (1) The project does not change the rate, volume, duration, or location of
8 discharges to and from the project site (e.g. where existing impervious
9 surface is replaced with other impervious surface having similar runoff-
10 generating characteristics, or where pipe/ditch modifications do not
11 change existing discharge characteristics), or
- 12 (2) The project discharges to a slope wetland or riverine wetland where no
13 depressional characteristics exist, or
- 14 (3) The project meets the land cover percentage requirements for full
15 dispersion in accordance to *SMMWW* or the *Stormwater Manual* for
16 flow control; or
- 17 (4) The county determines based on information in the preliminary
18 stormwater plan, or information submitted for wetland review per
19 Chapter 40.450, that the proposed project will not degrade wetland
20 function.
- 21 3. New development and drainage projects undertaken by governmental
22 agencies are exempt from Section 40.380.020(E)(5).
- 23 4. A proposed project is exempt from performing an off-site analysis if any of the
24 following conditions apply:
- 25 a. The county determines based on the information in the final technical
26 information report (TIR) that there is sufficient evidence to conclude that
27 the project will not have a significant adverse impact on the downstream
28 and/or upstream drainage system; or
- 29 b. The project:
- 30 (1) adds less than two thousand (2,000) square feet of new impervious
31 surface; and
- 32 (2) adds less than thirty-five thousand (35,000) square feet of new
33 pervious surface; and
- 34 (3) does not construct or modify a drainage pipe/ditch that is twelve (12)
35 inches or more in size/depth or that receives runoff from a drainage
36 pipe/ditch that is twelve (12) inches or more in size/depth; and
- 37 (4) does not contain or lie adjacent to a landslide, steep slope, or erosion
38 hazard area; and
- 39 (5) the project is exempt from Minimum Requirement #8; or
- 40 c. The project does not change the rate, volume, duration, or location of
41 discharges to and from the project site (e.g. where existing impervious
42 surface is replaced with other impervious surface having similar runoff-

1 generating characteristics, or where pipe/ditch modifications do not
2 change existing discharge characteristics).

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D. Definitions.

For the purposes of this chapter, the following definitions shall apply. Additional definitions can be found in the *SMMWW*.

Basin plan	“Basin Plan” means a plan that assesses, evaluates, and proposes solutions to existing and potential future impacts to the beneficial uses of, and the physical, chemical, and biological properties of waters of the state within a basin.
Best management practices (BMPs)	“Best management practices (BMPs)” means schedules of activities, prohibitions of practices, maintenance procedures, managerial practices, or structural features that prevent or reduce adverse impacts to waters of Washington State.
Drainage project	“Drainage project” means the excavation or construction of pipes, culverts, channels, embankments or other flow-altering structures in any stream, stormwater facility or wetland in Clark County.
Impervious surface	“Impervious surface” means a hard surface that either prevents or retards the entry of water into the soil. Examples include, but are not limited to, structures, walkways, patios, driveways, carports, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, haul roads and soil surface areas compacted by construction operations, and oiled or macadam surfaces. Open, uncovered retention/detention facilities shall not be considered as impervious surfaces for the 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.
Land-disturbing activity	“Land-disturbing activity” means 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 are not considered land-disturbing activity.
Low impact development	“Low impact development” means a stormwater management strategy that emphasizes conservation and use of existing natural site features integrated with distributed, small-scale stormwater controls to more closely

	mimic natural hydrologic patterns in residential, commercial, and industrial settings.
Maintenance	<p>“Maintenance” means repair and upkeep activities conducted on currently serviceable structures, facilities, and equipment that involves no expansion or use beyond that previously existing and results in no significant adverse hydrologic impact. It includes those usual activities taken to prevent a decline, lapse, or cessation in the use of structures and systems. Those usual activities may include replacement of dysfunctional 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.</p>
Minimum Requirements	<p>“Minimum requirements” means the ten sets of requirements that are part of the <i>SMMWW</i>, as follows:</p> <ul style="list-style-type: none"> • Minimum Requirement #1: Preparation of stormwater site plans; • Minimum Requirement #2: Construction stormwater pollution prevention; • Minimum Requirement #3: Source control of pollution; • Minimum Requirement #4: Preservation of natural drainage systems and outfalls; • Minimum Requirement #5: On-site stormwater management; • Minimum Requirement #6: Runoff treatment; • Minimum Requirement #7: Flow control; • Minimum Requirement #8: Wetlands protection; • Minimum Requirement #9: Basin/watershed planning; and • Minimum Requirement #10: Operation and maintenance.
Native vegetation	<p>“Native vegetation” means 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.</p>
New development	<p>“New development” means:</p> <ul style="list-style-type: none"> • land disturbing activities, including Class IV general forest practices that are conversions from timber land to other uses; • construction or installation of a building or other

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	<p>structure;</p> <ul style="list-style-type: none"> • creation of impervious surfaces; and • subdivisions, short subdivisions, and binding site plans, as defined and applied in Chapter 58.17 RCW. <p>Projects meeting the definition of re-development shall not be considered new development.</p>
Pre-developed condition	<p>“Pre-developed condition” means the land cover condition used to determine flow control requirements as required by Section 40.380.020(C)(2).</p>
Project site	<p>“Project site” means that portion of a property, properties, or right-of-way subject to land disturbing activities, new impervious surfaces, or replaced impervious surfaces.</p>
Re-development	<p>“Re-development” means on a site that is already substantially developed (i.e., has 35% or more of existing impervious surface coverage):</p> <ul style="list-style-type: none"> • the creation or addition of impervious surfaces; • the expansion of a building footprint or addition or replacement of a structure; • construction, installation or expansion of a building or other structure; • replacement of impervious surface that is not part of a routine maintenance activity; or • land-disturbing activities.
Replaced impervious surface	<p>“Replaced impervious surface” means:</p> <ul style="list-style-type: none"> • for structures, the removal and replacement of any exterior impervious surfaces or foundation; or • for other impervious surfaces, the removal down to bare soil or base course plus the replacement.
Responsible official	<p>“Responsible official” means the director of Clark County Public Works or their designee.</p>
Road-related development	<p>“Road-related development” means land-disturbing activity where the sole objective is the development or re-development of roads, sidewalks and bike lanes.</p>
Site	<p>“Site” means the area within the legal boundaries of a parcel or parcels of land that is (are) subject to new development or re-development. For road projects, the length of the project site and the right-of-way boundaries define the site.</p>
<i>Stormwater Facility Maintenance Manual</i>	<p>“<i>Stormwater Facility Maintenance Manual</i>” means the currently adopted stormwater facility maintenance manual maintained by Clark County Public Works.</p>
<i>Stormwater Management</i>	<p>“<i>Stormwater Management Manual for Western Washington</i>” (SMMWW) means the stormwater manual adopted by the</p>

<i>Manual for Western Washington</i>	Department of Ecology in February 2005.
<i>Stormwater Manual</i>	“ <i>Stormwater Manual</i> ” means the currently adopted stormwater manual maintained by Clark County Public Works.
Substantial completion	“Substantial completion” means: <ul style="list-style-type: none">• following inspection, stormwater facilities are operational and constructed to county standards;• streets are constructed and at least one lift of asphalt is installed when paving is required; and• the project is in full compliance with this chapter.
Underground injection control	“Underground injection control” means a man-made subsurface fluid distribution system designed to discharge fluids into the ground that consists of an assemblage of perforated pipes, drain tiles, or other similar mechanisms, or a dug hole whose depth is greater than the largest surface dimension.

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40.380.020 STANDARDS--STORMWATER CONTROL

A. General Standards.

1. The *SMMWW* as modified by the county’s *Stormwater Manual* is adopted by reference, and the recommendations and requirements contained therein will be the minimum standards for this chapter except as modified in this chapter.
2. Where provisions of this chapter conflict with other Title 40 requirements, the more stringent shall apply.
3. Stormwater facilities shall be constructed in accordance with the *Standard Specifications for Road, Bridge, and Municipal Construction 2008* as prepared by the Washington Department of Transportation.
4. All new development and re-development shall comply with the following:
 - a. Minimum Requirement #2 and Section 40.380.030.
 - b. New development and re-development that creates or adds two thousand (2,000) square feet or more of new, replaced, or new-plus-replaced impervious surface or which has land-disturbing activity of seven thousand (7,000) square feet or more shall comply with Minimum Requirements #1 through #5 for the new and replaced impervious surfaces and the land disturbed.
 - c. New development and re-development that creates or adds five thousand (5,000) square feet or more of new impervious surface, converts three quarters (0.75) of an acre or more of native vegetation to lawn or landscaped area, or converts two-and-a-half (2.5) acres or more of native

- 1 vegetation to pasture shall comply with Minimum Requirements #1
2 through #10 for the new impervious and converted pervious surfaces.
- 3 d. An off-site analysis as described in the *Stormwater Manual*, unless
4 exempted by Section 40.380.010(C)(4).
- 5 e. The county may allow the Minimum Requirements to be met for an
6 equivalent (flow and pollution characteristics) area within the same site.
7 For public road projects, the equivalent area does not have to be within
8 the same project limits but must drain to the same receiving water. For
9 frontage improvements required within the public right-of-way, the
10 equivalent area must be immediately adjacent to the site.
- 11 5. In addition, all re-development shall comply with the following:
- 12 a. Road-related projects that create or add five thousand (5,000) square feet
13 or more of new impervious surface and the new impervious surface totals
14 fifty percent (50%) or more of the existing impervious surface within the
15 project limits, shall comply with Minimum Requirements #1 through #10
16 for new and replaced impervious surfaces. The project limits shall be
17 defined by the physical length of the project and the width of the right-of-
18 way.
- 19 b. Non road-related projects where the total of new plus replaced impervious
20 surface is five thousand (5,000) square feet or more and the valuation of
21 the proposed improvements exceeds fifty percent (50%) or more of the
22 existing site tax assessment valuation, shall comply with Minimum
23 Requirements #1 through #10 for new and replaced impervious surfaces.
- 24 6. Drainage Structure Labeling and Signage. All catch basins and manholes
25 capable of accepting stormwater shall be signed or stenciled in accordance
26 with the *Stormwater Manual*.
- 27 7. Basin plans.
- 28 a. Basin plans as addressed in Minimum Requirement #9 are strategies
29 designed to protect and enhance surface and groundwater within a
30 watershed.
- 31 b. A plan shall include but not be limited to recommendations for:
- 32 (1) stormwater requirements for new development and re-development;
33 (2) capital improvement projects;
34 (3) land use management through identification and protection of critical
35 areas, comprehensive land use and transportation plans, zoning
36 regulations, site development standards, and conservation areas;
37 (4) source control activities, to include public education and involvement,
38 and business programs;
39 (5) other targeted stormwater programs and activities, such as
40 maintenance, inspections, and enforcement;
41 (6) monitoring; and
42 (7) an implementation schedule and funding strategy.
- 43 c. To be valid, a basin plan must:

- 1 (1) be stamped, signed and dated by a registered professional engineer
- 2 licensed in the State of Washington;
- 3 (2) be adopted by the board;
- 4 (3) meet the requirements of Chapter 36.94 RCW and the *SMMWW*;
- 5 (4) be formally adopted by all jurisdictions with responsibilities under the
- 6 plan; and
- 7 (5) be approved by the Department of Ecology.

8 In addition, all ordinances or regulations called for by the plan must be in
9 effect.

10 d. The policies and standards in an adopted basin plan shall supersede the
11 requirements of this chapter.

12 8. Regional stormwater facilities.

13 a. The county encourages the use of regional stormwater facilities.

14 b. If regional stormwater facilities are used to meet some or all of the
15 requirements of this chapter, the following conditions shall be met:

16 (1) Stormwater runoff shall be transported from a project site to a regional
17 stormwater facility through a pipe or man-made open channel
18 conveyance system.

19 (2) If the regional stormwater facility does not yet exist, interim quantity
20 control and treatment methods shall be used to meet the requirements
21 of this chapter. All interim methods shall be approved in writing by the
22 responsible official.

23 (3) The facility must have sufficient capacity to provide the treatment and
24 quantity control specified in this chapter at the time of connection.

25 (4) A written commitment from the owner of the facility, or the responsible
26 official in the case of county-owned facilities, shall be provided that
27 allows use of the facility by the applicant.

28 c. Where a stormwater utility exists, a system development charge can be
29 assessed for use of a regional stormwater facility.

30 9. Wetland Protection. If the county determines based on information in the
31 preliminary stormwater plan, or information submitted for wetland review per
32 Chapter 40.450, that the proposed project will degrade wetland function, then
33 the applicant shall implement flow control or other measures to mitigate the
34 adverse impacts of this alteration in accordance with the wetland hydrology
35 protection guidelines in Volume I, Appendix 1-D of the *SMMWW*.

36 10. Offsite Analysis. If the county determines based on information in the
37 preliminary stormwater plan that the proposed project will adversely impact
38 offsite drainage systems, then the applicant shall implement additional flow
39 control or other measures to mitigate those adverse impacts.

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41 B. Water Quality Treatment.

42 1. General Standards.

43 a. If project site conditions are appropriate and groundwater quality will not
44 be impaired, infiltration is the preferred BMP. Direct discharge of untreated
45 stormwater to groundwater is prohibited. All discharges to groundwater

- 1 shall comply with the Water Pollution Control Act (Chapter 90.48 RCW),
2 the Water Resources Act (Chapter 90.54 RCW), and Water Quality
3 Standards for Ground Waters of the State of Washington (Chapter 173-
4 200 WAC). Infiltration may be limited near public water supply wells.
- 5 b. Runoff treatment facilities shall be selected pursuant to Volume V, Chapter
6 2 of the *SMMWW*.
- 7 c. The stormwater treatment facilities shall be sized for the entire flow
8 directed to them.
- 9 d. The following water quality management plans and local
10 ordinances/regulations have been identified pursuant to Volume V,
11 Chapter 2 of the *SMMWW* as having specific requirements for receiving
12 waters:
- 13 (1) Total maximum daily load plans for Gibbons Creek and Salmon Creek;
14 and
15 (2) Lake management plans for Lacamas and Round Lakes.
- 16 2. Phosphorus treatment is required in the Lacamas watershed above the dam
17 at the south end of Round Lake for all project sites exceeding one (1) acre in
18 size.
- 19 3. Experimental BMPs shall follow the guidelines for emerging technologies
20 Volume V, Chapter 12 of the *SMMWW*.
- 21 4. Stormwater treatment facilities shall be maintained in accordance with the
22 latest version of the *Stormwater Facility Maintenance Manual*.
- 23 5. Hydrologic analysis for runoff treatment design shall be in accordance with
24 Volume III and Volume V, Chapter 4 of the *SMMWW*, with the following
25 exceptions:
- 26 a. Table III-2.1, Hydrologic Soil Groups for Selected Soils in Washington
27 State is replaced by:
- 28 (1) the *Soil Conservation Service Clark County Soil Survey* published in
29 1972 and updated by the Natural Resources Conservation Service
30 (NRCS);
31 (2) GIS soil maps of Clark County; or
32 (3) Washington Soil Survey data as available on the NRCS website.
33 In the case of conflicts, the more stringent soil group shall apply unless
34 site-specific hydrological soil groups as developed by a registered soil
35 scientist using criteria in the NRCS *National Soils Handbook*.
- 36 b. Appendix III-A, Isopluvial Maps for Design Storms, is replaced by
37 Isopluvial Maps for Design Storms in Clark County.
- 38
- 39 C. Quantity Control.
- 40 1. General Standards.
- 41 a. No new development or re-development shall be allowed to materially
42 increase or concentrate stormwater runoff onto an adjacent property or
43 block existing drainage from adjacent lots.

- 1 b. All lots must be designed to provide positive drainage from the bottom of
2 footings to an approved stormwater facility, unless a geotechnical report
3 has been prepared stating that a footing drain is not required.
- 4 c. Detention facilities shall be functional prior to completion of site
5 improvements (e.g., impervious surfaces). If permanent infiltration ponds
6 are used for flow control during construction, these facilities shall be
7 protected from siltation during the construction phase in accordance to the
8 project SWPPP, including but not limited to temporary sedimentation
9 ponds.
- 10 d. In addition to the requirements of Chapter 40.420, no reduction of existing
11 conveyance capacity and no net loss of existing storage capacity for the
12 one hundred- (100-) year storm is permitted in special flood hazard areas
13 as defined in Section 40.420.010(C). This requirement shall also apply to
14 all areas within the limits of the existing one hundred- (100-) year
15 floodplain for all streams and man-made channels within the county.
- 16 2. Pre-development Land Cover Requirements.
- 17 a. The pre-developed condition to be matched shall be a forested land cover
18 unless:
- 19 (1) Reasonable information is available that indicates the project site was
20 prairie prior to settlement; or
- 21 (2) The drainage area of the immediate stream and all subsequent
22 downstream basins has had less than forty percent (40%) forested
23 cover since 1955. In this case, the pre-developed condition to be
24 matched shall be the land cover condition generating the least amount
25 of stormwater runoff since 1955, as determined through aerial
26 photographs.
- 27 b. Where an approved basin plan exists, the land cover condition to be
28 matched shall be commensurate with achieving a target flow regime
29 identified in the study. If no land cover condition or target flow regime is
30 identified, land cover condition to be matched shall be as required above.
- 31 c. This requirement is not applicable to project sites designed to retain all
32 stormwater runoff onsite.
- 33 3. Design Methodology for Stormwater Infiltration Systems.
- 34 a. The design of stormwater infiltration facilities shall follow the requirements
35 in Volume III, Section 3.3 of the *SMMWW* and the *Stormwater Manual*,
36 except as revised herein, and the Washington Department of Ecology
37 *Guidance for UIC Wells that Manage Stormwater*. If a facility meets any
38 part of the UIC definition in Section 40.380.010(D), the developer must
39 register the UIC and provide proof of registration to the county prior to use.
- 40 b. The design shall follow the methodology in either the simplified or detailed
41 approaches in Volume III, Section 3 of the *SMMWW*, except that the
42 infiltration testing shall only be conducted using the methods described in
43 the *Stormwater Manual*.
- 44 c. Infiltration receptor characterization shall include the installation of ground
45 water monitoring wells unless the highest ground water level is

- 1 demonstrated to be at least fifteen (15) feet below the proposed infiltration
2 facility. These wells shall be installed and monitored during at least one
3 wet season within three (3) years prior to the date of final approval.
- 4 d. Test locations for performing infiltration tests as called for in the simplified
5 method shall be performed as follows:
6 (1) One or more infiltration tests shall be conducted at the location of each
7 proposed infiltration facility; and
8 (2) At least one test shall be conducted for each location where the soil
9 characteristics significantly vary within the vicinity of proposed
10 infiltration facilities.
- 11 e. Allowable methods for determining infiltration rates as called for in the
12 simplified method (Section 3.3.4 of the *SMMWW*) are as follows:
13 (1) The Single-Ring Falling Head Test as described in the *Stormwater*
14 *Manual*, or
15 (2) A Pilot Infiltration Test (PIT) conducted pursuant to Appendix III-D,
16 Volume III of the *SMMWW*.
- 17 f. Groundwater.
18 The base of all infiltration basins or trench systems shall be greater than
19 five (5) feet above the seasonal high-water mark, bedrock (or hardpan) or
20 other low permeability layer. A separation down to three (3) feet may be
21 considered if the ground water mounding analysis, volumetric receptor
22 capacity, and the design of the overflow and/or bypass structures are
23 judged by the county to be adequate to prevent overtopping and meet the
24 site suitability criteria specified in the *SMMWW*.
- 25 g. Stormwater Infiltration Facility Setbacks.
26 (1) Stormwater infiltration facilities shall be setback according to Table
27 40.380.020-1.
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Table 40.380.020-1. Stormwater Infiltration Facility Setbacks.	
Stormwater infiltration facility setback from:	Distance
Drinking water wells ¹	100 feet minimum
Building foundations	20 feet minimum, upslope 100 feet minimum, downslope
Slopes equal to or greater than 15% ²	50 feet minimum
Roof downspout infiltration systems	10 feet minimum from any structure or property line.

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31 ¹ Infiltration facilities upslope of drinking water supplies and within the 1-, 5-, and 10-year time of
32 travel zones must comply with Chapter 40.410.

33 ² See Chapter 40.430 for steep slope and landslide hazard area setbacks.
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- 35 (2) Setbacks may be reduced if a geotechnical report addresses potential
36 impacts of trench phreatic surface on structures within twenty (20) feet

- 1 of the proposed facility.
- 2 h. No permanent infiltration systems shall be allowed into service until:
- 3 (1) the entire contributing drainage area has received final stabilization;
- 4 and
- 5 (2) permanent water quality BMPs are in place and have been approved
- 6 by the county.
- 7 i. Before acceptance of any infiltration facility by the county, the completed
- 8 facility must be tested and monitored to demonstrate that the facility
- 9 performs as designed. If the tested coefficient of permeability determined
- 10 at the time of construction is at least ninety-five percent (95%) of the
- 11 uncorrected coefficient of permeability used to determine the design rate,
- 12 construction shall be allowed to proceed. If the tested rate does not meet
- 13 this requirement, the applicant shall submit an additional testing plan to
- 14 Clark County that follows the requirements in Chapter 2 of the *Stormwater*
- 15 *Manual*. This plan shall address steps to correct the problem, including
- 16 additional testing and/or resizing of the facility to ensure that the system
- 17 complies with the provisions of this chapter.
- 18 j. A ground water mounding analysis shall be conducted at all sites where
- 19 the depth to seasonal ground water table or low permeability stratum is
- 20 less than five (5) feet or where the depth to seasonal ground water table
- 21 or low permeability stratum is less than fifteen (15) feet and the runoff to
- 22 the infiltration facility is from more than one (1) acre of effective impervious
- 23 surface. Groundwater modeling (mounding analysis) of the proposed
- 24 infiltration facility shall be done using the design infiltration rate and the
- 25 estimated maximum groundwater elevation determined for the proposed
- 26 facility location.
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28 D. Stormwater Facilities.

29 1. General.

- 30 a. Stormwater facilities shall be located in accordance with the county's
- 31 critical areas ordinances, Chapters 40.410 through 40.450.
- 32 b. Stormwater facilities, other than closed conveyance systems, shall be
- 33 located in relation to existing and proposed on-site sewage system
- 34 drainfields as follows:
- 35 (1) at least thirty (30) feet when downslope from the drainfield system.
- 36 (2) at least ten (10) feet when upslope from the drainfield system.
- 37 (3) at least one hundred (100) feet for infiltration and dispersion systems.
- 38 This distance can be reduced upon submittal of a report prepared by a
- 39 registered geotechnical engineer licensed in the state of Washington
- 40 that provides evidence that neither system will be compromised by a
- 41 closer proximity. All applicable state and federal regulations must still
- 42 be followed.
- 43 c. Stormwater facilities, other than underground closed systems, shall be
- 44 located outside easements and corridors used by phone, electric, water,

- 1 natural gas, and other utilities unless the utilities are installed prior to
2 construction of the facility.
- 3 d. Sites used for stormwater facilities shall be owned by the applicant,
4 county, or state.
- 5 (1) If the county or state owns the site, a letter from the responsible
6 agency allowing use of the site for stormwater control shall be
7 submitted with the preliminary stormwater plan.
- 8 (2) If the county or state does not own the site, the ownership shall be
9 included for consideration with the land use application for the
10 development.
- 11 e. Stormwater facilities other than underground closed systems in urban
12 residential subdivisions and short plats shall be located on separate tracts
13 which are recommended, but not required, to meet minimum zoning lot
14 size requirements. The plat or other dedication instrument shall indicate
15 tract disposition in the event of county abandonment or vacation.
- 16 2. Side slopes.
- 17 Side slopes of stormwater facilities shall be according to Table 40.380.020-2
18 and Section 40.380.020(D)(3).
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Table 40.380.020-2. Stormwater Facility Side Slopes.	
All facilities with slopes flatter than or equal to 3:1	Allowed
All facilities with slopes flatter than or equal to 2:1	Allowed, if: <ul style="list-style-type: none">• Side slopes don't need mowing, and• Erosion control and slope stability are provided
Public facilities, vertical slopes	Allowed, if: <ul style="list-style-type: none">• Perimeter has less than or equal to 75% vertical slopes;• Vertical slopes more than two feet tall are fenced;• Maintenance access is adequate; and• Side slopes in a biofiltration treatment area are 3:1 or flatter.

Private facilities, slopes steeper than 3:1	Allowed if: <ul style="list-style-type: none">• Perimeter has less than or equal to 75% vertical slopes;• Vertical slopes more than two feet tall are fenced;• Long-term erosion control is provided;• Side slopes in a biofiltration treatment area are 3:1 or flatter; and• It is demonstrated that the facility can be adequately maintained.
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3. Fencing.
 - a. Public stormwater treatment and runoff control facilities shall be fenced in accordance with Volume III of the *SMMWW*.
 - b. Fences are not required for private stormwater facilities, provided a hold-harmless agreement is provided to the county.
 - c. If the facility is not enclosed by a fence, the covers for all control structures, manholes, and catch basins shall be bolted in-place.
 - d. A gate or lockable bollards shall be provided across any access road.
 - e. Wood board fences are not allowed.

E. Maintenance and Ownership.

1. County Ownership of Stormwater Facilities. County ownership of stormwater facilities is required for all such facilities that are to be located within a public right-of-way or for which arrangements for private long-term maintenance which are acceptable to the responsible official have not been made.
2. Acceptance of Ownership by the County.
 - a. Stormwater facilities that are to be owned by the county will be provisionally accepted for ownership upon the approval of the record drawings and approval of an inspection of the facilities by the county. Provisional acceptance of the facilities shall not relieve the applicant from any obligation to undertake any remedial measures to correct deficiencies in the design, construction, maintenance or operation of the facilities.
 - b. No sooner than eighteen (18) months following the provisional acceptance of the facilities, the applicant shall notify the responsible official that the facilities are eligible for final acceptance of ownership by the county. Prior to their final acceptance for ownership, the facilities shall be inspected to determine that they are properly maintained and in satisfactory condition. The responsible official shall require the applicant to conduct tests of the facilities to reasonably demonstrate that they are operating as designed and to the county standards for quality and quantity control as a condition of final acceptance. Upon approval of the facilities by the responsible official and all necessary ownerships and easements entitling the county to properly access and maintain the facilities have been conveyed to the county and recorded with the County Auditor, they will be finally accepted for ownership by the county.

1 3. Maintenance of Stormwater Facilities.

2 a. County-Owned Facilities.

3 (1) For a period of at least two (2) years following the provisional
4 acceptance of stormwater facilities or thereafter until the facilities are
5 finally accepted by the county, the developer constructing the facilities
6 shall maintain, repair, redesign, or reconstruct the facilities to ensure
7 that they operate as designed and to the county standards for quality
8 and quantity control. This obligation shall extend to remedying any
9 damage caused to the facilities by builders or other third parties during
10 the initial maintenance period. The required maintenance shall be
11 performed according to the county's *Stormwater Facility Maintenance*
12 *Manual* pursuant to Section 13.26A.040.

13 (2) During the initial maintenance period, remedial work to correct
14 deficiencies shall be the responsibility of the developer and shall be
15 completed prior to final acceptance. Required remedial work to correct
16 maintenance and construction deficiencies shall be completed by the
17 applicant prior to final acceptance.

18 (3) Following final acceptance for county ownership, the county shall
19 maintain stormwater facilities.

20 b. Privately-Owned Facilities.

21 (1) For stormwater facilities for which the county will not provide
22 maintenance, the developer shall make arrangements with the
23 existing or future (as appropriate) occupants or owners of the subject
24 property for assumption of maintenance to the standards in the
25 county's *Stormwater Facility Maintenance Manual* pursuant to
26 Section 13.26A.040. The responsible official shall approve such
27 arrangements prior to county approval of the final stormwater plan.
28 Final plats shall include a note specifying the party(ies) responsible
29 for long-term maintenance of stormwater facilities.

30 (2) The county shall inspect privately maintained facilities for compliance
31 with the requirements of this chapter. If the parties responsible for
32 long-term maintenance fail to maintain their facilities to acceptable
33 standards, the county shall issue a written notice specifying required
34 actions to be taken in order to bring the facilities into compliance. If
35 these actions are not performed in a timely manner, the county shall
36 take enforcement action and recover from parties responsible for the
37 maintenance in accordance with Section 32.04.060.

38 (3) Easements or a covenant acceptable to the responsible official shall
39 be provided to the county for purposes of inspection and
40 maintenance of all privately maintained facilities. The minimum
41 dimensions of easements are listed in the *Stormwater Manual*, and
42 shall allow for access to all areas within the pond and drainage
43 structures by standard maintenance equipment vehicles.

44 4. Recovering costs of stormwater facilities.

- 1 a. The following costs associated with stormwater facilities may be
2 recoverable through latecomers agreements (Chapter 35.91.010 RCW):
3 (1) Over-sizing on-site facilities above their existing capacity or the
4 capacity required for the proposed development; and
5 (2) A proportionate share of the total cost of off-site facilities.
6 b. If a stormwater utility exists, the costs for building or over-sizing a
7 stormwater facility may be eligible as a credit against applicable system
8 development charges.
9 5. Bonds and insurance.
10 a. Performance Security. In lieu of completing required stormwater facilities
11 within a preliminary plat prior to recording, the applicant may, with the
12 approval of the county, post a performance bond or other security
13 acceptable to the responsible official in the amount of one hundred fifty
14 percent (150%) of the estimated cost (prepared by the project engineer) of
15 completing construction per the approved stormwater plan. After
16 determination by the responsible official that all facilities are constructed in
17 compliance with the approved plan, are performing their intended
18 functions in a satisfactory manner, and that the maintenance bonding
19 requirements of Section 40.380.020(E)(3) are met, the performance bond
20 or security shall be released. No building permits shall be issued until the
21 stormwater facilities are completed and provisionally accepted.
22 b. Maintenance Security. In cases identified in Section 40.380.020(E)(3), a
23 maintenance bond or other security acceptable to the responsible official,
24 in the amount of ten percent (10%) of the project engineer's construction
25 cost, shall be posted and maintained throughout the two- (2-) year initial
26 maintenance period for a stormwater facility.
27

28 **40.380.030 STANDARDS--EROSION CONTROL**

29 A. General Standards.

- 30 1. Contractor Certification. All land-disturbing activity performed by licensed
31 contractors shall be supervised by an individual who shall have successfully
32 completed formal training in erosion and sediment control during construction
33 by a recognized organization acceptable to the responsible official. A
34 certification of successful completion of such training shall be submitted at the
35 pre-construction conference.
36 2. Permanent infiltration BMPs shall not be used as temporary erosion control
37 devices.
38 3. Vehicles not performing a construction activity shall not be permitted off-
39 street. Worker personal vehicles shall be parked on adjacent streets or other
40 approved areas.
41

42 B. Underground Utility Construction.

- 43 The construction of underground utility lines shall be subject to the following:
44 1. An erosion control plan specifically related to underground work shall be
45 submitted and approved prior to beginning work.
46

- 1 2. BMPs shall be used to control erosion during and after construction.
- 2 3. BMPs damaged during construction shall be replaced or repaired.

3
4 C. Signage.

- 5 1. Erosion control signage approved by the responsible official shall be installed
6 at each point of entry for any subdivision or short plat prior to issuance of
7 provisional acceptance by the county. Signs may be purchased from the
8 county.
- 9 2. Removal of signage shall occur when either certificates of occupancy have
10 been issued for seventy percent (70%) of the lots or there are less than ten
11 (10) unoccupied lots remaining within the project site, whichever is later, or as
12 determined by the responsible official.

13 **40.380.040 ADMINISTRATION**

14
15 A. Submittals—General.

- 16 1. A stormwater plan shall be submitted identifying how stormwater runoff
17 originating on the project site or flowing through the project site is presently
18 controlled and how this will change due to the proposed development, re-
19 development, or drainage project. The purpose of the stormwater plan is to
20 determine whether a proposal can meet the requirements set forth in this
21 chapter.
- 22 2. Applicants proposing any new development or re-development governed by
23 this chapter shall submit the plans, studies, and information as provided
24 herein. If the project site is within the region covered by a basin plan pursuant
25 to this chapter, then the responsible official may waive information
26 requirements.
- 27 3. All plans, studies, and reports shall be stamped, signed and dated by a
28 registered professional civil engineer(s) licensed in the state of Washington,
29 and a registered soil scientist, if appropriate, responsible for their preparation,
30 and by the project engineer responsible for preparation of the stormwater
31 plan.
- 32 4. Record drawings.
 - 33 a. Record drawings which accurately represent the project site as
34 constructed shall be provided to the county prior to:
 - 35 (1) the issuance of building permits for single-family/duplex residential
36 subdivisions;
 - 37 (2) the issuance of occupancy permits for development subject to site plan
38 review; and
 - 39 (3) within sixty (60) days following completion of construction of other
40 development.
 - 41 b. The record drawings shall include corrected engineering plans for the
42 stormwater system, showing constructed dimensions and elevations. In
43 addition, revisions to the final stormwater plan shall be submitted with the
44 record drawings where changes during construction significantly alter the
45 calculations and assumptions contained in the plan.
 - 46 c. All plans submitted shall be reproducible and on Mylar.

- d. The record drawing submittal shall be stamped, signed and dated by a registered professional engineer licensed in the state of Washington.
- e. Record drawings shall be submitted on computer disk in one of the following approved file formats: Portable Document Format (.pdf), AutoCAD (.dwg, .dxf), or MicroStation (.dgn).
- f. Record drawings shall clearly indicate the ownership of any stormwater facility and who is responsible for its maintenance.

B. Preliminary Stormwater Plan.

1. A preliminary stormwater plan is required for all new development and re-development not exempted by Section 40.380.010(C).
2. A preliminary stormwater plan meeting the requirements of this section shall be submitted with the land use application.
3. The preliminary stormwater plan submittal shall consist of a Preliminary Development Plan and a Preliminary Technical Information Report (TIR) prepared in accordance with the *Stormwater Manual*. The project engineer shall include a statement that all required information is included and that the proposed stormwater facilities are feasible.

C. Final Stormwater Plan.

1. The final stormwater plan is required and must be approved by the responsible official prior to beginning construction related to new development, re-development, or drainage project. The final stormwater plan provides final engineering design and construction drawings in accordance with the *Stormwater Manual*.
2. The final stormwater plan shall include the following:
 - a. A final development plan;
 - b. A final technical report (TIR);
 - c. The approved preliminary stormwater plan with an explanation of any differences between the design concepts included in the preliminary and final stormwater plans.
 - d. A final engineering plans that provide sufficient detail to allow construction of the stormwater facilities. These plans shall be stamped, signed and dated by registered professional engineer(s) licensed in the State of Washington responsible for hydrologic, hydraulic, geotechnical, and structural and general civil engineering design, and by the project engineer responsible for the preparation of the final stormwater plan. Additionally, the final engineering plan shall show all utilities to ensure conflicts between proposed utility lines do not exist;
 - e. Any easements, covenants or agreements that are necessary to permit construction must be included; and
 - f. A Construction Stormwater Pollution Prevention Plan (*SWPPP*).
3. The final stormwater plan shall be prepared in accordance with the *Stormwater Manual*.

D. Construction Stormwater Pollution Prevention Plan.

1 A construction stormwater pollution prevention plan (*SWPPP*) prepared in
2 accordance with Volume II, Section 3.3 of the *SMMWW* is required for all
3 development and re-development not exempted by Section 40.380.010(C).
4

5 E. Plan Review.

6 1. For a land use application requiring a public hearing, the preliminary
7 stormwater plan shall be decided on in accordance with the procedures
8 applicable to the land use application. All other preliminary stormwater plans
9 shall be acted on by the responsible official within the timeline for the
10 preliminary land use decision.

11 2. The responsible official may waive in writing some or all of the content
12 requirements in the preliminary stormwater plan if:

13 a. The development activity or drainage project is included in an approved
14 final stormwater plan which meets the requirements of this chapter; or

15 b. A basin plan exists that supersedes any of the requirements.

16 The waiver of some or all of the preliminary stormwater control plan
17 requirements does not relieve the applicant of a final stormwater control
18 plan.

19 3. Variances. For purposes of this chapter, the following requirements shall
20 apply with regard to variances:

21 a. Type I and Type II (Administrative) Variances.

22 The responsible official may grant an administrative variance to the
23 numerical standards of this chapter using a Type I or Type II process
24 pursuant to Sections 40.510.010 and 40.510.020 prior to permit approval
25 and construction; provided, that the provisions of this chapter are met.

26 These variances deal with the design and construction of facilities, are not
27 limited to any percentage change, and typically include (but are not limited
28 to) the following:

29 (1) Conveyance system analysis and design;

30 (2) Off-site analysis;

31 (3) Materials;

32 (4) Facility side slopes;

33 (5) Easements;

34 (6) Percent of facility made up of retaining wall;

35 (7) Fencing requirements; and

36 (8) Varying from the standard details.

37 b. Type III Variances.

38 The responsible official may grant a variance from the requirements of this
39 chapter using a Type III process pursuant to Section 40.510.030 prior to
40 permit approval and construction; provided, that the provisions of this
41 chapter are met. A written finding of fact is required that addresses the
42 following:

43 (1) The variance provides for equivalent environmental protection and is in
44 the overriding public interest; and that the objectives of safety, function,
45 environmental protection and facility maintenance, based upon sound
46 engineering, are fully met;

- 1 (2) That there are special physical circumstances or conditions affecting
2 the property such that the strict application of these provisions would
3 deprive the developer of all reasonable use of the property of land in
4 question, and all feasible efforts to meet the intent of the requirements
5 has been made, including:
6 (a) the current (pre-project) use of the site;
7 (b) how the application of the Minimum Requirements restrict the
8 proposed use of the site compared to the restrictions that existed
9 prior to the adoption of the Minimum Requirements;
10 (c) the possible remaining uses of the site if the variance were not
11 granted;
12 (d) the uses of the site that would have been allowed prior to the
13 adoption of the Minimum Requirements;
14 (e) a comparison of the estimated percentage of value loss as a result
15 of the Minimum Requirements versus the estimated amount and
16 percentage of value loss of requirements that existed prior to
17 adoption of the Minimum Requirements; and
18 (f) the feasibility for the owner to alter the project to comply with the
19 Minimum Requirements.
20 (3) That the granting of the variance will not be detrimental to the public
21 health and welfare, nor injurious to other properties in the vicinity
22 and/or downstream, and to the quality of waters of the state; and
23 (4) The variance is the least possible variance that could be granted to
24 comply with the intent of this section.
25 4. Exceptions for single-family/duplex residential subdivisions.
26 a. The responsible official may approve the issuance of building permits for
27 up to fifty percent (50%) of the lots after the stormwater and road
28 improvements are substantially complete.
29 b. Building permits for model homes may be approved pursuant to Section
30 40.260.145.
31 5. Stormwater plans decisions may be appealed in conjunction with the
32 associated land use application.