Basic Abbreviated
&
Advanced Abbreviated Plan Handout

Pierce County Ordinance No. 2015-48s

Effective December 5, 2015

3.2 Abbreviated Plan

Projects that are identified in Table 3.1 as needing an Abbreviated Plan require a Site Development Permit submittal, document preparation, county review, and county inspection. Abbreviated Plans can be simple or complex (referred to as "Basic" Abbreviated Plans and "Advanced" Abbreviated Plans, respectively). The simplest plan may only need to address Minimum Requirement #2 – Construction Stormwater Pollution Prevention, and Minimum Requirement #4 – Preservation of Natural Drainage Systems and Outfalls. The most complex might have to address Minimum Requirements #1 through #5. Detailed descriptions of Basic and Advanced Abbreviated Plan thresholds and requirements are outlined in the following subsections. A schematic showing the components of a typical Abbreviated Plan is presented in Figure 3.1 below.

The purpose of an Abbreviated Plan is:

1. To assure that a project complies with the applicable minimum requirements.

2. To incorporate requirements that achieve the intent and purpose of the Critical Area Regulations. Flood, Landslide, Shoreline Erosion, Wetland, and other critical areas sometimes require measures that must be depicted on Abbreviated Plan drawings to achieve compliance with these regulations.

3. To prevent development related stormwater runoff from impacting neighboring properties.

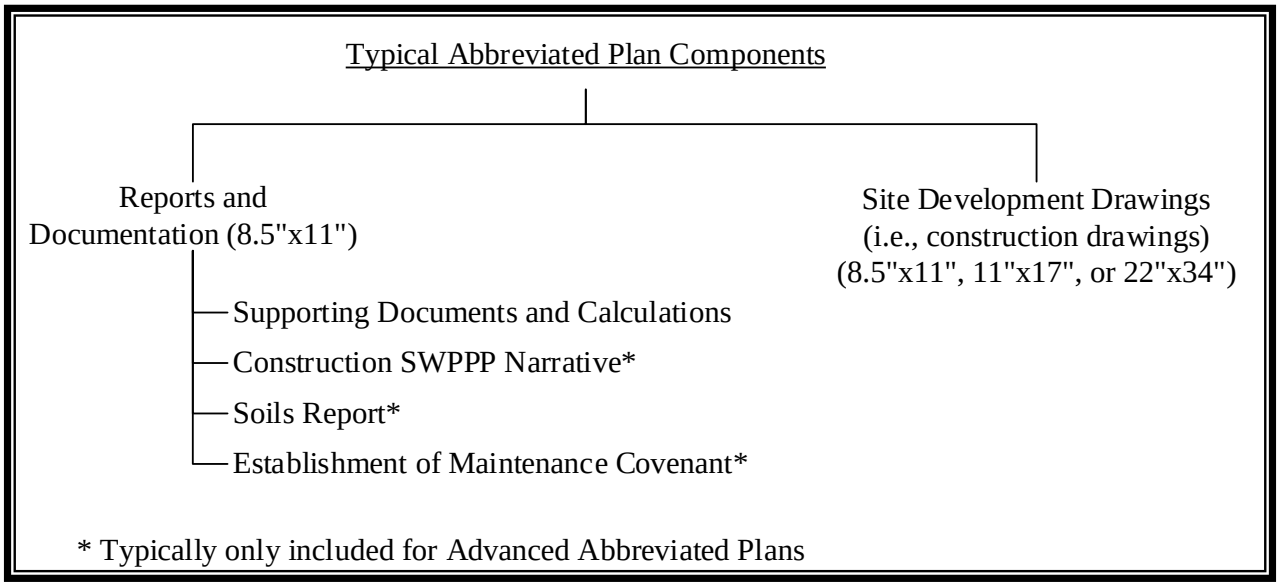

Figure 3.1. Typical Abbreviated Plan Components.

3.2.1 Abbreviated Plans – Basic and Advanced Plan Requirements

Basic Abbreviated Plans

Regardless of project size and type, all Abbreviated Plans have several basic requirements that must be met and reflected in the plan drawings and documentation. If

new, replaced, or new plus replaced hard surfaces are greater than or equal to 500 square feet but less than 2,000 square feet, or land-disturbing activity is less than 7,000 square feet, a Basic Abbreviated Plan can be submitted. The Basic Abbreviated Plan must demonstrate that Minimum Requirements #2 and #4 are being met. For Minimum Requirement #2, the project must demonstrate and document that the 13 Construction Stormwater Pollution Prevention elements are being considered and addressed as applicable. For Minimum Requirement #4, projects must document how they are preventing downstream impacts to the extent necessary. Application of Minimum Requirement #4 will be project-specific, and will be based on an assessment by county staff of the proposed project's potential to cause stormwater runoff impacts to downstream properties.

Advanced Abbreviated Plans

If new, replaced, or new plus replaced hard surfaces are greater than or equal to 2,000 square feet, or if land-disturbing activity is greater than or equal to 7,000 square feet, an Advanced Abbreviated Plan must be submitted. The Advanced Abbreviated Plan must demonstrate how Minimum Requirements #1 through #5 are being met. Note that Minimum Requirement #5 includes detailed requirements and decision points that can affect the project significantly, which must be reflected in the Abbreviated Plan documentation. Likewise, compliance with Minimum Requirement #2 will require preparation of a full Construction SWPPP.

In many situations, it will be necessary for a licensed professional to prepare components of the Advanced Abbreviated Plan. In some cases, the additional required information pertinent to the Abbreviated Plan may be available within the plat or other approved documents related to the project.

The following subsections provide further detail on the requirements for Basic and Advanced Abbreviated Plans. The following topics are discussed:

- Critical Areas requirements
- Supporting documents and calculations
- Drawing size and quality requirements
- Drawing requirements for Basic and Advanced Abbreviated Plans, including topographic survey requirements
- Construction SWPPP requirements (Advanced plans only)
- Soils Report requirements (Advanced plans only)
- Establishment of maintenance obligation (Advanced plans only).

3.2.2 Abbreviated Plan – Critical Areas Requirements

In addition to the core requirements for Basic or Advanced Abbreviated Plans, projects that involve work in or near critical areas must demonstrate compliance with PCC

Title 18E. The Abbreviated Plan must indicate any specific site design and construction requirements that implement the applicable critical area standards and requirements.

3.2.3 Abbreviated Plan – Supporting Documents and Calculations

Abbreviated Plans must include all calculations and/or analyses necessary to demonstrate compliance with applicable minimum requirements. This may include calculations related to sizing stormwater BMPs or conveyance systems, analyses of site or downstream conditions, documentation of infeasibility issues, etc.

3.2.4 Abbreviated Plan – Licensed Engineer Required For Roads

Abbreviated Plans that propose work on public roads, private roads, and unopened county right-of-way must be prepared by a professional engineer licensed in Washington State.

3.2.5 Abbreviated Plan – Drawing Size and Quality

Lines shall be drawn with a straight edge (with the exception of curved lines) and features shall be to scale. Drawings shall be sufficiently clear to see footprints of structures and other features described above, and shall be on 8.5 x 11-inch paper; 11 x 17-inch paper, or plan-size sheets (22 x 34-inch).

3.2.6 Abbreviated Plan – Site Development Drawings

Basic Plan Requirements

The Abbreviated Plan site development drawings generally contain all the pertinent information necessary for construction of a project. This may include applicable drainage, grading, sediment control, and topographic survey information, as well as any applicable notes or details. At a minimum, Basic Abbreviated Plan drawings must contain:

- The location and type of any onsite stormwater management BMPs (e.g., soil amendment, infiltration trenches, dispersion, rain gardens, permeable pavement, etc.)
- The location and type of construction stormwater pollution prevention BMPs used for erosion and sediment control
- The location and type of other construction stormwater pollution prevention BMPs (such as refueling areas)
- Location of stormwater conveyance systems for runoff from structures
- Notes, specifications, and details related to selected BMPs
- Name, address, telephone number, and email address of the applicant
- Name, address, telephone number, and email address of the person preparing the plan

- Name, address, telephone number, and email address of the contractor, if known
- Parcel number(s)
- Scale and north arrow
- Legend if symbols are used
- Property boundaries, dimensions, and area
- Contour lines from the best available source (specify datum used)
- Adjoining street names
- Existing and proposed structures and other hard surfaces such as driveways, patios, etc.
- Location of onsite sewage disposal systems and reserve areas
- Existing and proposed easements
- Established buffers, significant trees (per PCC title 18J), and natural vegetation easements
- Natural drainage channels, wetlands, canyons, gullies, water bodies, etc.
- Clearing limits
- Areas to be graded, filled, excavated, or otherwise disturbed
- Location of known wells, and underground storage tanks
- Proposed location(s) determined for stockpiled materials, i.e., excavation wastes
- Location and details of construction entrance
- Earthwork requirements of PCC Title 17A.

It is useful when these drawings also include:

- Applicable standard driveway approach detail (driveway approaches shall be constructed or reconstructed to meet the requirements of PCC Title 17B)
- Building setbacks from property lines.

Advanced Plan Requirements

The following additional information must be provided on the site development drawings for projects required to submit an Advanced Abbreviated Plan (i.e., projects subject to Minimum Requirements #1 through #5).

All Advanced Abbreviated Plans must include survey information prepared by a registered land surveyor or other qualified professional that includes:

- Existing public and private development, including utility infrastructure on and adjacent to the site if publicly available
- Minor hydrologic features, including seeps, springs, closed depression areas, and drainage
- Major hydrologic features including streams, wetlands, and water bodies, as well as wetland and buffer boundaries and classifications
- Flood hazard areas on or adjacent to the site
- Geologic hazard areas and associated buffer requirements on or adjacent to the site
- Aquifer and wellhead protection areas on or adjacent to the site
- Topographic features that may act as natural stormwater storage, infiltration, or conveyance
- Locations of soil surveys, soil test pits, and soil borings conducted as part of the required soils report.

In addition, if a geotechnical assessment is required per PCC Title 17A, Soil Engineering – Stability, any recommendations contained in the report must be incorporated into the site development drawings.

3.2.7 Abbreviated Plan – Construction SWPPP Requirements (Advanced Plans Only)

Advanced Abbreviated Plans must include a complete Construction SWPPP. See Volume II, Section 2.2 of this manual for information on the items that shall be included as part of the Construction SWPPP narrative (i.e., report) and drawings.

3.2.8 Abbreviated Plan – Soils Report Requirements (Advanced Plans Only)

In support of the requirements of Minimum Requirement #5, Advanced Abbreviated Plans must include a soils report prepared by: a professional soil scientist certified by the Soil Science Society of America (or an equivalent national program); a locally licensed onsite sewage designer; or by other suitably trained persons working under the supervision of a professional engineer, geologist, hydrogeologist, or engineering

geologist registered in the State of Washington. The report shall include the following information:

- Soil surveys, soil test pits, soil borings, or soil grain analyses sufficient to identify underlying soils on the site.
- The results of saturated hydraulic conductivity (Ksat) testing to assess infiltration capability and the feasibility of rain gardens, bioretention, and permeable pavement. Use one of the infiltration testing methods outlined in Volume III, Appendix III-A.
- The results of testing for a hydraulic restriction layer (groundwater, soil layer with less than 0.3 in/hr Ksat, bedrock, etc.) under possible sites for a rain garden, bioretention area, or permeable pavement. Testing with a monitoring well or an excavated pit must extend to a depth at least 1 foot below the estimated bottom elevation of a rain garden/bioretention excavation and at least 1 foot below the subgrade surface of a permeable pavement. This analysis should be performed in the winter season (December 21 through March 21). Site historic information and evidence of high groundwater in the soils can also be used.
- If onsite infiltration may result in shallow lateral flow (interflow), the conveyance and possible locations where that interflow may re-emerge shall be assessed by a professional engineer, geologist, hydrogeologist, or engineering geologist registered in the State of Washington.

3.2.9 Abbreviated Plan – Establishment of Maintenance Covenant (Advanced Plans Only)

To ensure future maintenance of onsite stormwater management BMPs used to meet the requirements of Minimum Requirement #5, a maintenance covenant must be recorded for each parcel that contains onsite stormwater management BMPs. The proposed covenant must be reviewed and approved by the county prior to recording. All required covenants must be recorded prior to final construction approval for the proposed project.

The recorded maintenance covenant must be created on a county-approved form (obtainable from Pierce County Planning and Land Services' website: <piercecountywa.org/PALS>). The covenant shall include an 8.5″ x 11″ plan view showing the location of onsite stormwater management BMPs relative to structures and property lines, and maintenance instructions for each onsite stormwater management BMP. A map showing the location of newly planted and retained trees claimed as flow reduction credits shall also be attached. All documents and attachments shall meet the recording requirements of the Pierce County Auditor. After approval by the county, the declaration of covenant must be signed and recorded at the Pierce County Auditor's office.

Table 3.1. Thresholds for Abbreviated Plans, Construction Stormwater Pollution Prevention Plans, and Drainage Control Plans.

Category [1, 2]		≥500 sf New or Replaced Impervious/Hard Surface	≥2,000 sf New or Replaced Impervious/Hard Surface or ≥7,000 sf Land Disturbed	≥5,000 sf New or Replaced Impervious/Hard Surface, or ≥0.75 ac of Vegetation Converted to Lawn, or ≥2.5 ac Native Vegetation Converted to Pasture, or ≥250 cy Materials Moved
1	Subdivisions, Short Plats, Large Lots, One-Lot Subdivisions	AP	AP, SWPPP	SWPPP, DCP
2	Creation of New Impervious/Hard Surface [6]	AP	AP, SWPPP	SWPPP, DCP [3]
3	Construction of Roads, Shared Accesses, and Alleyways	AP	AP, SWPPP	SWPPP, DCP
4	Maintenance and Repair of Roads, Shared Accesses, and Alleyways		AP, SWPPP	SWPPP, DCP
5	Utility Line Work (construction or maintenance – inside R/W) [4]		AP, SWPPP	SWPPP, DCP
6	Utility Line Work (construction or maintenance – outside R/W) [5, 6]		AP, SWPPP	SWPPP, DCP
7	Building Permit	AP	AP, SWPPP	SWPPP, DCP [3]
8	Clearing	AP	AP, SWPPP	SWPPP, DCP
9	Grading	AP	AP, SWPPP	SWPPP, DCP
10	Driveway culvert installation in Roadside Swales/Ditches [7]			

AP = Abbreviated Plan
DCP = Drainage Control Plan
SWPPP = Construction Stormwater Pollution Prevention Plan

List #1: Onsite Stormwater Management BMPs for Projects Triggering Minimum Requirements #1 through #5

For each surface, consider the BMPs in the order listed for that type of surface. Use the first BMP that is considered feasible. No other onsite stormwater management BMP is necessary for that surface. Feasibility shall be determined by evaluation against:

- Design criteria, limitations, and infeasibility criteria identified for each BMP in this manual; and
- Competing Needs Criteria listed below.
- (See also Volume III, Appendix III-D for a summary of infeasibility criteria for all BMPs.)

Lawn and landscaped areas:

1. Soil preservation and amendment BMP in Volume III, Section 3.1.

Roofs:

1. 65/10 dispersion BMP in Volume VI, Section 2.3 or downspout infiltration BMP in Volume III, Section 3.9.3.
2. Rain garden BMP in Volume III, Section 3.8 or bioretention BMP in Volume III, Section 3.4; or ONLY for sites that are underlain by Spanaway soils[1], downspout dispersion BMP in Volume III, Section 3.9.4. The rain garden or bioretention area must have a minimum horizontal projected surface area below the overflow which is at least 5 percent of the area draining to it. The downspout dispersion BMP must have a slope of 10 percent or less.
3. Downspout dispersion BMP in Volume III, Section 3.9.4.
4. Perforated Stub-out Connections in Volume III, Section 3.9.5

Other Hard Surfaces:

1. 65/10 dispersion BMP in Volume VI, Section 2.3.
2. Permeable pavement[2] BMP in Volume III, Section 3.5 or rain garden BMP in Volume III, Section 3.8 or bioretention BMP in Volume III, Section 3.4. The rain garden or bioretention area must have a minimum

1 As defined by the Soils Survey of Pierce County Area (USDA 1979), and field verified by a professional soil scientist certified by the Soil Science Society of America (or an equivalent national program); a locally licensed onsite sewage designer; or by other suitably trained persons working under the supervision of a professional engineer, geologist, hydrogeologist, or engineering geologist registered in the State of Washington.
2 This is not a requirement to pave these surfaces. Where pavement is proposed, it must be permeable to the extent feasible unless 65/10 dispersion is employed.

horizontal projected surface area below the overflow which is at least 5 percent of the area draining to it.

3. Sheet flow dispersion BMP in Volume III, Section 3.2.3, or concentrated flow dispersion BMP in Volume III, Section 3.2.4.

2.4 Minimum Requirements

This section describes the minimum requirements for stormwater management at development and redevelopment sites. Section 2.3 should be consulted to determine which requirements apply to any given project. Figures 2.1 and 2.2 should be consulted to determine whether the minimum requirements apply to new surfaces, replaced surfaces, or new and replaced surfaces. Volumes II through VI of this manual present BMPs for use in meeting the minimum requirements.

2.4.1 Minimum Requirement #1: Preparation of Stormwater Site Plans

All projects meeting the thresholds in Section 2.3 are required to prepare one or more stormwater site planning documents for county review. **In addition, Pierce County requires Abbreviated Plan submittals for some projects that fall below the Minimum Requirement #1 threshold identified in Section 2.3.** The information required in the various stormwater site plans varies depending on the nature of the project and its location. Stormwater Site Plans shall use site-appropriate development principles, as required by PCC Title 18A and 18J, to retain native vegetation and minimize impervious surfaces to the extent feasible. Each of the plan submittals listed below are described in detail in Chapter 3. See Chapter 3 and Table 3.1 for the specific information on required plans and plan content.

- Abbreviated Plan
- Drainage Control Plan
- Construction Stormwater Pollution Prevention Plan.

Completing the applicable plan in accordance with the requirements in Chapter 3 will meet Minimum Requirement #1.

Objective

The 2,000 square feet threshold for hard surfaces and 7,000 square foot threshold for land disturbance are specified by Ecology to capture most single family home construction and their equivalent. The county-specific thresholds identified in Chapter 3, Table 3.1, were developed to meet more specific Pierce County needs and interests, without negating Ecology's requirements.

2.4.2 Minimum Requirement #2: Construction Stormwater Pollution Prevention

Thresholds

All new development and redevelopment projects are responsible for preventing erosion and discharge of sediment and other pollutants into receiving waters, and shall comply with Construction SWPPP Elements #1 through #13 as detailed in Volume II, Section 2.3.3. The thirteen elements are summarized below, but project applicants must refer to Volume II, Section 2.3.3 for the full description of applicable requirements.

Projects which result in 2,000 square feet or more of new plus replaced hard surface area, or which disturb 7,000 square feet or more of land must prepare a Construction SWPPP as part of the Stormwater Site Plan (see Section 2.4.1). Each of the thirteen elements must be considered and included in the Construction SWPPP unless site conditions render the element unnecessary and the exemption from that element is clearly justified in the narrative of the Construction SWPPP.

Projects that result in less than 2,000 square feet of new plus replaced hard surface area, or disturb less than 7,000 square feet of land are not required to prepare a Construction SWPPP, but must consider all of the thirteen elements of Construction Stormwater Pollution Prevention and develop controls for all elements that pertain to the project site.

These elements cover the general water quality protection strategies of limiting site impacts, preventing erosion and sedimentation, and managing activities and sources during the construction phase of a project.

The 13 elements are:

1. Mark clearing limits
2. Establish construction access
3. Control flow rates
4. Install sediment controls
5. Stabilize soils
6. Protect slopes

7. Protect drain inlets
8. Stabilize channels and outlets
9. Control pollutants
10. Control dewatering
11. Maintain BMPs
12. Manage the project
13. Protect Low Impact Development BMPs.

If a Construction SWPPP is found to be inadequate (with respect to Erosion and Sediment Control requirements), Pierce County may require that other BMPs be implemented as needed.

A complete description of each element and the associated BMPs are given in Volume II, Chapter 2.

2.4.3 Minimum Requirement #3: Source Control of Pollution

All known, available and reasonable source control BMPs must be applied to all projects. Source control BMPs must be selected, designed, and maintained according to this manual.

Objective

The intent of source control BMPs is to prevent stormwater from coming in contact with pollutants. They are a cost-effective means of reducing pollutants in stormwater, and, therefore, should be a first consideration in all projects.

Supplemental Guidelines

An adopted and implemented basin plan or a TMDL (also known as a Water Cleanup Plan) may be used to develop more stringent source control requirements that are tailored to a specific basin.

Source control BMPs include operational BMPs and structural source control BMPs. See Volume IV for design details of these BMPs. For construction sites, see Volume II.

Structural source control BMPs should be identified in the stormwater site plan and should be shown on all applicable plans submitted for county review and approval.

2.4.4 Minimum Requirement #4: Preservation of Natural Drainage Systems and Outfalls

All new development and redevelopment projects are responsible for maintaining natural drainage patterns, and discharges from the project site shall occur at the natural location, to the maximum extent practicable. The manner by which runoff is discharged from the

project site must not cause a significant adverse impact to downstream receiving waters and downgradient properties. When downstream drainage courses are inadequate or systems are undersized, or when in the opinion of the county, property or properties may be adversely affected by the existing and/or proposed stormwater release rates, additional stormwater flow control measures may be required. Such determination by the county may be based upon existing information indicating problem areas or based upon current or past litigation over drainage problems within the vicinity of the project. If additional stormwater flow control measures are required by the county, the applicant may have the option to correct and/or improve downstream drainage conditions so that the proposed stormwater release rate does not have to be further restricted. Any offsite improvements will require the applicant to obtain easements from the owners of any property where work is to take place.

All outfalls require energy dissipation**.**

Objective

To preserve and utilize natural drainage systems to the fullest extent because of the multiple stormwater benefits these systems provide; and to prevent erosion at and downstream of the discharge location.

2.4.5 Minimum Requirement #5: Onsite Stormwater Management

Projects shall employ onsite stormwater management BMPs in accordance with the following projects thresholds, standards, and lists to infiltrate, disperse, and retain stormwater runoff onsite to the extent feasible without causing flooding or erosion impacts. A flow chart (Figure 2.3) is provided at the end of this section to help summarize the core components of this minimum requirement.

Projects qualifying as flow control exempt per Section 2.4.7 of this chapter do not have to achieve the LID performance standard, nor consider bioretention, rain gardens, permeable pavement, and 65/10 dispersion BMPs if using List #1 or List #2. However, those projects must implement the following BMPs:

1. Soil preservation and amendment (see Volume III, Section 3.1);
2. Downspout infiltration (see Volume III, Section 3.9.3), or downspout dispersion (see Volume III, Section 3.9.4); and
3. Concentrated flow dispersion (see Volume III, Section 3.2.4) or sheet flow dispersion (see Volume III, Section 3.2.3), if feasible. See Volume III, Chapters 2 and 3 for additional details on each BMP.

In addition, projects subject to the county's Comprehensive LID Site Design requirements (per PCC Title 18A and 18J) should review Volume VI in conjunction with Minimum Requirements #5, #6, and #7. Some of the requirements of PCC Title 18J will partially or fully achieve the requirements of Minimum Requirements #5, #6, and #7.

Project Thresholds

Projects triggering only Minimum Requirements #1 through #5 shall either:

a. Use onsite stormwater management BMPs from List #1 for all surfaces within each type of surface in List #1; or

b. Demonstrate compliance with the LID Performance Standard. Projects selecting this option cannot use rain gardens. They may choose to use bioretention areas as described in Volume III, Section 3.4 to achieve the LID Performance Standard. Projects selecting this option must implement the soil preservation and amendment BMP described in Volume III, Section 3.1 if feasible.

Projects triggering Minimum Requirements #1 through #10, must meet the requirements in Table 2.1.

Table 2.1. Onsite Stormwater Management Requirements for Projects Triggering Minimum Requirements #1 – #10.

Project Type and Location	Requirement
New development on any parcel inside the UGA, or new development or road-related project outside the UGA on a parcel less than 5 acres	Low Impact Development Performance Standard, and Soil Preservation and Amendment BMP (see Volume III, Section 3.1); or List #2 (applicant option).
New development outside the UGA on a parcel of 5 acres or larger	Low Impact Development Performance Standard, and Soil Preservation and Amendment BMP (see Volume III, Section 3.1).
Redevelopment on any parcel inside the UGA, or redevelopment or road-related project outside the UGA on a parcel less than 5 acres	Low Impact Development Performance Standard, and Soil Preservation and Amendment BMP (see Volume III, Section 3.1); or List #2 (applicant option).
Redevelopment outside the UGA on a parcel of 5 acres or larger	Low Impact Development Performance Standard, and Soil Preservation and Amendment BMP (see Volume III, Section 3.1).

Note: This table refers to the Urban Growth Area (UGA) as designated under the Growth Management Act (GMA) (Chapter 36.70A RCW) of the State of Washington.

Low Impact Development Performance Standard

Stormwater discharges shall match developed discharge durations to pre-developed durations for the range of pre-developed discharge rates from 8 percent of the 2-year peak flow to 50 percent of the 2-year peak flow. Refer to the Standard Flow Control Requirement section in Minimum Requirement #7 for information about the assignment of the pre-developed condition. Project sites that must also meet Minimum Requirement #7 – flow control – must match flow durations between 8 percent of the 2-year flow through the full 50-year flow.

List #1: Onsite Stormwater Management BMPs for Projects Triggering Minimum Requirements #1 through #5

For each surface, consider the BMPs in the order listed for that type of surface. Use the first BMP that is considered feasible. No other onsite stormwater management BMP is necessary for that surface. Feasibility shall be determined by evaluation against:

- Design criteria, limitations, and infeasibility criteria identified for each BMP in this manual; and
- Competing Needs Criteria listed below.
- (See also Volume III, Appendix III-D for a summary of infeasibility criteria for all BMPs.)

Lawn and landscaped areas:

1. Soil preservation and amendment BMP in Volume III, Section 3.1.

Roofs:

1. 65/10 dispersion BMP in Volume VI, Section 2.3 or downspout infiltration BMP in Volume III, Section 3.9.3.
2. Rain garden BMP in Volume III, Section 3.8 or bioretention BMP in Volume III, Section 3.4; or ONLY for sites that are underlain by Spanaway soils[1], downspout dispersion BMP in Volume III, Section 3.9.4. The rain garden or bioretention area must have a minimum horizontal projected surface area below the overflow which is at least 5 percent of the area draining to it. The downspout dispersion BMP must have a slope of 10 percent or less.
3. Downspout dispersion BMP in Volume III, Section 3.9.4.
4. Perforated Stub-out Connections in Volume III, Section 3.9.5

Other Hard Surfaces:

1. 65/10 dispersion BMP in Volume VI, Section 2.3.
2. Permeable pavement[2] BMP in Volume III, Section 3.5 or rain garden BMP in Volume III, Section 3.8 or bioretention BMP in Volume III, Section 3.4. The rain garden or bioretention area must have a minimum horizontal projected surface area below the overflow which is at least 5 percent of the area draining to it.
3. Sheet flow dispersion BMP in Volume III, Section 3.2.3, or concentrated flow dispersion BMP in Volume III, Section 3.2.4.

Footnotes 1 and 2 are located on the next page

1 As defined by the Soils Survey of Pierce County Area (USDA 1979), and field verified by a professional soil scientist certified by the Soil Science Society of America (or an equivalent national program); a locally licensed onsite sewage designer; or by other suitably trained persons working under the supervision of a professional engineer, geologist, hydrogeologist, or engineering geologist registered in the State of Washington.
2 This is not a requirement to pave these surfaces. Where pavement is proposed, it must be permeable to the extent feasible unless 65/10 dispersion is employed.

3.4.3 Infeasibility Criteria

The following criteria describe conditions that make bioretention not required for consideration in the List #1 or List #2 option of Minimum Requirement #5. In addition, other bioretention design criteria and site limitations that make bioretention areas infeasible (e.g., setback requirements) may also be used to demonstrate infeasibility, subject to approval by the county. See also Appendix III-D for a summary of infeasibility criteria for all BMPs. If a project proponent wishes to use a bioretention BMP though not required to because of these feasibility criteria, they may propose a functional design to the county.

Note: Criteria with setback distances are as measured from the bottom edge of the bioretention soil mix.

Citation of any of the following infeasibility criteria must be based on an evaluation of site-specific conditions and a written recommendation from an appropriate licensed professional (e.g., engineer, geologist, hydrogeologist):

- Where professional geotechnical evaluation recommends infiltration not be used due to reasonable concerns about erosion, slope failure, or downgradient flooding
- In accordance with PCC Title 18E limitations may exist and reports may be required when bioretention area is within 300 feet of a landslide hazard area or within 200 feet of an erosion hazard area
- Where the only area available for siting would threaten the safety or reliability of pre-existing underground utilities, pre-existing underground storage tanks, pre-existing structures, or pre-existing road or parking lot surfaces

- Where the only area available for siting does not allow for a safe overflow pathway to a stormwater drainage system or private storm sewer system
- Where there is a lack of usable space for bioretention areas at re-development sites, or where there is insufficient space within the existing public right-of-way on public road projects
- Where infiltrating water would threaten existing below grade basements
- Where infiltrating water would threaten shoreline structures such as bulkheads.

The following criteria can be cited as reasons for infeasibility without further justification (though some require professional services to make the observation):

- Within setbacks provided in Section 3.4.6.
- Where they are not compatible with a surrounding drainage system as determined by the county (e.g., project drains to an existing stormwater collection system whose elevation or location precludes connection to a properly functioning bioretention area).
- Where land for bioretention is within an erosion hazard, or landslide hazard area (as defined by PCC Title 18E.80).
- Where the site cannot be reasonably designed to locate bioretention areas on slopes less than 8 percent.
- For properties with known soil or groundwater contamination (typically federal Superfund sites or state cleanup sites under the Model Toxics Control Act (MTCA)):
    - Within 100 feet of an area known to have deep soil contamination
    - Where groundwater modeling indicates infiltration will likely increase or change the direction of the migration of pollutants in the groundwater
    - Wherever surface soils have been found to be contaminated unless those soils are removed within 10 horizontal feet from the bioretention area
    - Any area where these facilities are prohibited by an approved cleanup plan under the state Model Toxics Control Act or Federal Superfund Law, or an environmental covenant under Chapter 64.70 RCW.
- Within 100 feet of a closed or active landfill.
- For sites with onsite or adjacent septic systems, the discharge point must be at least 30 feet upgradient, or 10 feet downgradient, of the drainfield primary and reserve areas (per WAC 246-272A-0210. This requirement may be modified by the Tacoma-Pierce County Health Department if site topography clearly

prohibits flows from intersecting the drainfield or where site conditions (soil permeability, distance between systems, etc.) indicate that this is unnecessary.

- Within 10 feet of an underground storage tank and connecting underground pipes when the capacity of the tank and pipe system is 1,100 gallons or less. (As used in these criteria, an underground storage tank means any tank used to store petroleum products, chemicals, or liquid hazardous wastes of which 10 percent or more of the storage volume (including volume in the connecting piping system) is beneath the ground surface.

- Within 100 feet of an underground storage tank and connecting underground pipes when the capacity of the tank and pipe system is greater than 1,100 gallons.

- Where the field testing indicates potential bioretention area sites have a measured (a.k.a., initial) native soil saturated hydraulic conductivity less than 0.30 inches per hour. A small-scale or large-scale PIT in accordance with Appendix III-A shall be used to demonstrate infeasibility of bioretention areas. If the measured native soil infiltration rate is less than 0.30 in/hour, this option is not required to be evaluated as an option in List #1 or List #2 of Minimum Requirement #5. In these slow draining soils, a bioretention area with an underdrain may be used to treat pollution-generating surfaces to help meet Minimum Requirement #6, Runoff Treatment. If the underdrain is elevated within a base course of gravel, it will also provide some modest flow reduction benefit that will help achieve Minimum Requirement #7.

Other Site Suitability Factors:

- **Utility conflicts**: Consult Pierce County requirements for horizontal and vertical separation required for publicly-owned utilities, such as sewer. Consult the appropriate franchise utility owners for separation requirements from their utilities, which may include communications, water, power, and gas. When separation requirements cannot be met, designs should include appropriate mitigation measures, such as impermeable liners over the utility, sleeving utilities, fixing known leaky joints or cracked conduits, and/or adding an underdrain to the bioretention.

- **Transportation safety**: The design configuration and selected plant types should provide adequate sight distances, clear zones, and appropriate setbacks for roadway applications in accordance with the County's requirements.

- **Ponding depth and surface water draw-down**: Flow control needs, as well as location in the development, and mosquito breeding cycles will determine draw-down timing. For example, front yards and entrances to residential or commercial developments may require rapid surface dewatering for aesthetics.

- **Impacts of surrounding activities**: Human activity influences the location of the facility in the development. For example, locate bioretention areas away from traveled areas on individual lots to prevent soil compaction and damage to

vegetation or provide elevated or bermed pathways in areas where foot traffic is inevitable and provide barriers, such as wheel stops, to restrict vehicle access in roadside applications.

- **Visual buffering**: Bioretention areas can be used to buffer structures from roads, enhance privacy among residences, and for an aesthetic site feature.

- **Site growing characteristics and plant selection**: Appropriate plants should be selected for sun exposure, soil moisture, and adjacent plant communities. Native species or hardy cultivars are recommended and can flourish in the properly designed and placed bioretention soil mix with no nutrient or pesticide inputs and 2 to 3 years irrigation for establishment. Invasive species control may be necessary.

3.4.4 Modeling and Sizing

Bioretention areas receiving runoff from roads or a combination of roads and other impervious/pervious surfaces will be larger than rain gardens. For bioretention areas designed to meet Minimum Requirement #5, the bioretention area shall have a horizontally projected surface area below the overflow which is at least 5 percent of the total surface area draining to it. If lawn/landscape area will also be draining to the bioretention area, the horizontally projected surface area below the overflow shall be increased by 2 percent of the lawn/landscape area. For bioretention areas designed to meet Minimum Requirement #6 or #7, the bioretention area must be sized using an approved continuous simulation model.

When using continuous modeling to size bioretention areas, the assumptions listed in Table 3.3 shall be applied. It is recommended that bioretention cells be modeled as a layer of soil (with specified infiltration rate) with infiltration to underlying soil, ponding, and overflow. The bioretention soil is designed in accordance with the treatment soil requirements outlined in the design criteria below. To meet Minimum Requirement #6, at least 91 percent of the influent runoff file produced using a continuous simulation model must be infiltrated. Applicable water quality design storm volume drawdown requirements must also be met (see Volume V, Section 6.3).

If 91 percent of the influent runoff file cannot be infiltrated, the percent infiltrated may be subtracted from the 91 percent volume that must be treated, and downstream treatment facilities may be significantly smaller as a result.

The tributary areas, cell bottom area, and ponding depth should be iteratively sized until the duration curves and/or peak values meet the applicable flow control requirements (see Volume I). For additional guidance on bioretention modeling and sizing see the 2014 Ecology Stormwater Management Manual for Western Washington, Volume III, Appendix III-C.

At the time of publication of this volume, the professional version of WWHM includes a bioretention module that can be used to size the cell with or without an underdrain as a function of tributary area, land use type, native soil infiltration rate, side slopes, etc. It

is anticipated that other modeling programs will develop similar modules to represent bioretention cells in the future.

Refer to Appendix III-C in Volume III of the Ecology Manual for additional modeling and design guidance for bioretention areas.

Infiltration rates of the native soil (i.e., the undisturbed soil below the imported and/or amended facility soil) and bioretention soil mix infiltration rate must be used when sizing and modeling bioretention areas. The native infiltration rate shall be determined using the methods outlined above. The method for determining infiltration rate of bioretention soil mix is described in Section 3.4.6.

Table 3.3. Continuous Modeling Assumptions for Bioretention Cells.

Variable	Assumption
Precipitation Series	Pierce County
Computational Time Step	15 minutes
Inflows to Facility	Surface flow and interflow from drainage area routed to facility
Precipitation and Evaporation Applied to Facility	Yes. If model does not apply precipitation and evaporation to facility, include the facility area in the basin area (note that this will underestimate the evaporation of ponded water).
Bioretention Soil Mix Measured Infiltration Rate	For imported soil, rate is 6.0 inch per hour before applying the correction factor.
Bioretention Soil Porosity	30 percent
Bioretention Soil Depth	Minimum of 18 inches
Native Soil Infiltration Rate	Measured infiltration rate, including applicable safety factors (see Volume III, Appendix III-A)
Infiltration Across Wetted Surface Area	Only if side slopes are 3:1 or flatter
Underdrain (optional)	If an underdrain is placed at bottom extent of the bioretention soil layer, all water that filters through the bioretention soil must be routed through the underdrain (i.e., no losses to infiltration). If there is no liner or impermeable layer and the underdrain is elevated above the bottom extent of the bioretention soil or aggregate layer, water stored in the bioretention soil or aggregate below the underdrain invert may be allowed to infiltrate.
Overflow	Overflow elevation set at maximum ponding elevation (excluding freeboard). May be modeled as weir flow over riser edge or riser notch. Note that the total facility depth (including freeboard) must be sufficient to allow water surface elevation to rise above the overflow elevation to provide head for discharge.

Appendix III-D – Onsite Stormwater Management BMP Infeasibility Criteria

The following tables present infeasibility criteria that can be used to justify not using various onsite stormwater management BMPs for consideration in the List #1 or List #2 option of Minimum Requirement #5. This information is also included under the detailed descriptions of each BMP, but is provided here in this appendix for additional clarity and efficiency. Where any inconsistencies or lack of clarity exists, the requirements in the main text of each volume shall be applied. If a project is limited by one or more of the infeasibility criteria specified below, but still wishes to use the given BMP, they may propose a functionally equivalent design to the county for review and approval.

Lawn and Landscaped Areas	
BMP	**Infeasibility Criteria**
Soil Preservation and Amendment	• Site setbacks and design criteria provided in Volume III, Section 3.1 cannot be achieved.
Roofs	
BMP	**Infeasibility Criteria**
65/10 Dispersion	• Site setbacks and design criteria provided in Volume VI, Section 2.3 cannot be achieved. • A 65 to 10 ratio of forested or native vegetation area to impervious area cannot be achieved. • A minimum forested or native vegetation flowpath length of 100 feet (25 feet for sheet flow from a non-native pervious surface) cannot be achieved.
Downspout Infiltration Systems	• Site setbacks and design criteria provided in Volume III, Section 3.9 cannot be achieved. • The lot(s) or site does not have outwash or loam soils. • There is not at least 12 inches or more of permeable soil from the proposed bottom (final grade) of the infiltration system to the seasonal high groundwater table.
Downspout Dispersion Systems	• Site setbacks and design criteria provided in Volume III, Section 3.9 cannot be achieved. • A vegetated flowpath at least 50 feet in length from the downspout to the downstream property line, structure, slope over 20 percent, stream, wetland, or other impervious surface is not feasible. • A vegetated flowpath of at least 25 feet in between the outlet of the trench and any property line, structure, stream, wetland, or impervious surface is not feasible.

Roofs (continued)	
BMP	**Infeasibility Criteria**
Bioretention or Rain Gardens	Note: criteria with setback distances are as measured from the bottom edge of the bioretention soil mix. • Site setbacks provided in Volume III, Section 3.4.6 cannot be achieved. Citation of any of the following infeasibility criteria must be based on an evaluation of site-specific conditions and a written recommendation from an appropriate licensed professional (e.g., engineer, geologist, hydrogeologist): • Where professional geotechnical evaluation recommends infiltration not be used due to reasonable concerns about erosion, slope failure, or downgradient flooding. • In accordance with PCC Title 18E limitations may exist and reports may be required when bioretention area is within 300 feet of a landslide hazard area or within 200 feet of an erosion hazard area. • Where the only area available for siting would threaten the safety or reliability of pre-existing underground utilities, pre-existing underground storage tanks, pre-existing structures, or pre-existing road or parking lot surfaces. • Where the only area available for siting does not allow for a safe overflow pathway to stormwater drainage system or private storm sewer system. • Where there is a lack of usable space for bioretention areas at re-development sites, or where there is insufficient space within the existing public right-of-way on public road projects. • Where infiltrating water would threaten existing below grade basements. • Where infiltrating water would threaten shoreline structures such as bulkheads. The following criteria can be cited as reasons for infeasibility without further justification (though some require professional services to make the observation): • Where they are not compatible with surrounding drainage system as determined by the county (e.g., project drains to an existing stormwater collection system whose elevation or location precludes connection to a properly functioning bioretention area).

Roofs (continued)	
BMP	**Infeasibility Criteria**
Bioretention or Rain Gardens (continued)	• Where land for bioretention is within an erosion hazard, or landslide hazard area (as defined by PCC Title 18E.80). • Where the site cannot be reasonably designed to locate bioretention areas on slopes less than 8 percent. • For properties with known soil or groundwater contamination (typically federal Superfund sites or state cleanup sites under the Model Toxics Control Act (MTCA)): o Within 100 feet of an area known to have deep soil contamination. o Where groundwater modeling indicates infiltration will likely increase or change the direction of the migration of pollutants in the groundwater. o Wherever surface soils have been found to be contaminated unless those soils are removed within 10 horizontal feet from the infiltration area. o Any area where these facilities are prohibited by an approved cleanup plan under the state Model Toxics Control Act or Federal Superfund Law, or an environmental covenant under Chapter 64.70 RCW. • Within 100 feet of a closed or active landfill. • Within 30 feet upgradient, or 10 feet downgradient, of the drainfield primary and reserve areas (per WAC 246-272A-0210). This requirement may be modified by the Tacoma-Pierce County Health Department if site topography clearly prohibits flows from intersecting the drainfield or where site conditions (soil permeability, distance between systems, etc.) indicate that this is unnecessary. • Within 10 feet of an underground storage tank and connecting underground pipes when the capacity of the tank and pipe system is 1100 gallons or less. (As used in these criteria, an underground storage tank means any tank used to store petroleum products, chemicals, or liquid hazardous wastes of which 10 percent or more of the storage volume (including volume in the connecting piping system) is beneath the ground surface. • Within 100 feet of an underground storage tank and connecting underground pipes when the capacity of the tank and pipe system is greater than 1,100 gallons.

Roofs (continued)	
BMP	**Infeasibility Criteria**
Bioretention or Rain Gardens (continued)	• Where field testing indicates potential bioretention/rain garden sites have a measured (a.k.a., initial) native soil saturated hydraulic conductivity less than 0.30 inches per hour. A small-scale or large-scale PIT in accordance with Appendix III-A shall be used to demonstrate infeasibility of bioretention areas. If the measured native soil infiltration rate is less than 0.30 in/hour, bioretention/rain garden BMPs are not required to be evaluated as an option in List #1 or List #2. In these slow draining soils, a bioretention area with an underdrain may be used to treat pollution-generating surfaces to help meet Minimum Requirement #6, Runoff Treatment. If the underdrain is elevated within a base course of gravel, it will also provide some modest flow reduction benefit that will help achieve Minimum Requirement #7.
Perforated Stub-Out Connections	• Site setbacks and design criteria provided in Volume III, Section 3.9.5 cannot be achieved. • There is not at least 12 inches or more of permeable soil from the proposed bottom (final grade) of the perforated stub-out connection trench to the highest estimated groundwater table. • The only location available for the perforated stub-out connection is under impervious or heavily compacted soils. • For sites with septic systems, the only location available for the perforated portion of the pipe is located upgradient of the drainfield primary and reserve areas. • The connecting pipe discharges to a stormwater facility designed to meet Minimum Requirement #7.

Other Hard Surfaces	
BMP	**Infeasibility Criteria**
65/10 Dispersion	• See 65/10 Dispersion under “roofs” section above.
Permeable Pavement	• Setbacks and site constraints provided in Volume III, Section 3.5.6 cannot be achieved. Citation of any of the following infeasibility criteria must be based on an evaluation of site-specific conditions and a written recommendation from an appropriate licensed professional (e.g., engineer, geologist, hydrogeologist)

Other Hard Surfaces (continued)	
BMP	**Infeasibility Criteria**
Permeable Pavement (continued)	• Where professional geotechnical evaluation recommends infiltration not be used due to reasonable concerns about erosion, slope failure, or downgradient flooding. • In accordance with PCC Title 18E limitations may exist and reports may be required when permeable pavement is within 300 feet of a landslide hazard area or within 200 feet of an erosion hazard area. • Where infiltrating and ponded water below the new permeable pavement area would compromise adjacent impervious pavements. • Where infiltrating water below a new permeable pavement area would threaten existing below grade basements. • Where infiltrating water would threaten shoreline structures such as bulkheads. • Down slope of steep, erosion prone areas that are likely to deliver sediment. • Where fill soils are used that can become unstable when saturated. • Excessively steep slopes where water within the aggregate base layer or at the subgrade surface cannot be controlled by detention structures and may cause erosion and structural failure, or where surface runoff velocities may preclude adequate infiltration at the pavement surface. • Where permeable pavements cannot provide sufficient strength to support heavy loads at industrial facilities such as ports. • Where installation of permeable pavement would threaten the safety or reliability of pre-existing underground utilities, pre-existing underground storage tanks, or pre-existing road subgrades. The following criteria can be cited as reasons for infeasibility without further justification (though some require professional services to make the observation): • For properties with known soil or groundwater contamination (typically federal Superfund sites or state cleanup sites under the Model Toxics Control Act (MTCA)): o Within 100 feet of an area known to have deep soil contamination. o Where groundwater modeling indicates infiltration will likely increase or change the direction of the migration of pollutants in the groundwater.

Other Hard Surfaces (continued)	
BMP	**Infeasibility Criteria**
Permeable Pavement (continued)	o Wherever surface soils have been found to be contaminated unless those soils are removed within 10 horizontal feet from the infiltration area. o Any area where these facilities are prohibited by an approved cleanup plan under the state Model Toxics Control Act or Federal Superfund Law, or an environmental covenant under Chapter 64.70 RCW. • Within 100 feet of a closed or active landfill. • Within 10 feet of any underground storage tank and connecting underground pipes, regardless of tank size. As used in these criteria, an underground storage tank means any tank used to store petroleum products, chemicals, or liquid hazardous wastes of which 10 percent or more of the storage volume (including volume in the connecting piping system) is beneath the ground surface. • At multi-level parking garages, and over culverts and bridges. • Where the site design cannot avoid putting pavement in areas likely to have long-term excessive sediment deposition after construction (e.g., construction and landscaping material yards). • Where the site cannot reasonably be designed to have a porous asphalt surface at less than 5 percent slope, or a pervious concrete surface at less than 10 percent slope, or a permeable interlocking concrete pavement surface (where appropriate) at less than 12 percent slope. Grid systems upper slope limit can range from 6 to 12 percent; check with manufacturer and local supplier. • Where the subgrade soils below a pollution-generating permeable pavement (e.g., road or parking lot) do not meet the soil suitability criteria for providing treatment. See soil suitability criteria for treatment in Chapter 6 of Volume V. Note: In these instances, the county may approve installation of a six-inch sand filter layer meeting county specifications for treatment as a condition of construction. • Where underlying soils are unsuitable for supporting traffic loads when saturated. Soils meeting a California Bearing Ratio of 5 percent are considered suitable for residential access roads. • Where appropriate field testing indicates soils have a measured (a.k.a., initial) subgrade soil saturated hydraulic conductivity less than 0.3 inches per hour. Only small-scale PIT or large-scale PIT methods in accordance with Appendix III-A shall be used to evaluate infeasibility of permeable pavement areas. (Note: In these instances, unless other infeasibility restrictions apply, roads and parking lots may be built with an underdrain, preferably elevated within the base course, if flow control benefits are desired.)

Other Hard Surfaces (continued)	
BMP	**Infeasibility Criteria**
Permeable Pavement (continued)	• Where the road type is classified as arterial or collector rather than access. See RCW 35.78.010, RCW 36.86.070, and RCW 47.05.021. Note: This infeasibility criterion does not extend to sidewalks and other non-traffic bearing surfaces associated with the collector or arterial. • Where replacing existing impervious surfaces unless the existing surface is a non-pollution generating surface over an outwash soil with a saturated hydraulic conductivity of four inches per hour or greater. • At sites defined as "high-use sites." For more information on high-use sites, refer to the Glossary in Volume I; and Volume V, Section 2.1, Step 3. • In areas with "industrial activity" as defined in the Glossary (located in Volume I). • Where the risk of concentrated pollutant spills is more likely such as gas stations, truck stops, and industrial chemical storage sites. • Where routine, heavy applications of sand occur in frequent snow zones to maintain traction during weeks of snow and ice accumulation.
Bioretention or Rain Gardens	• See Bioretention or Rain Gardens under "roofs" section above.
Sheet Flow Dispersion	• Site setbacks and design criteria provided in Volume III, Section 3.2 cannot be achieved. • Positive drainage for sheet flow runoff cannot be achieved. • Area to be dispersed (e.g., driveway, patio) cannot be graded to have less than a 15 percent slope. • At least a 10-foot wide vegetation buffer for dispersion of the adjacent 20 feet of impervious surface cannot be achieved.
Concentrated Flow Dispersion	• Site setbacks and design criteria provided in Volume III, Section 3.2 cannot be achieved. • A minimum 3 foot length of rock pad and 50-foot flowpath for every 700 sf of drainage area followed with applicable setbacks cannot be achieved. • More than 700 sf drainage area drains to any dispersion device.

Return to (Applicant):

_____
_____
_____

COVENANT
PROPERTY OWNER REQUIRED TO MAINTAIN STORMWATER FACILITIES
(INDIVIDUAL)

For purposes of this agreement and for indexing by the Auditor as required by R.C.W. Ch. 65.04, the parties to this agreement are_____

_____

Grantor, and Pierce County, Grantee.

PARCEL NUMBER(S): _____

PARCEL ADDRESS: _____

LEGAL DESCRIPTION: _____

_____

_____

PRESENT OWNER(S): _____

PERMIT NUMBER(S). _____

Grantor is the owner of certain real property in Pierce County, Washington, as described above and referred to in this agreement as the "Property".

Grantor proposes to develop (construct buildings, clear, grade, etc.) the Property, and the nature of the development necessitates the need for the installation of stormwater features to mitigate the impacts to groundwater, streams, rivers, and other surface waters. The upkeep and maintenance of these stormwater features is essential to the protection of the County's surface and groundwater resources.

The following stormwater features are located on the Property:

☐ Downspout Infiltration ☐ Permeable Pavement ☐ Rain Garden

☐ Perforated Stubout Connection ☐ Downspout Dispersion ☐ Sheet Flow Dispersion

☐ 65/10 Dispersion ☐ Bioretention ☐ Concentrated Flow Dispersion

☐ Other

In connection with the Grantor's development, Pierce County requires, and the Grantor agrees to maintain, the above stormwater features in accordance with the maintenance instructions attached herein.

Construction drawings for the stormwater features for this property can be viewed on the County web page. County approval must be obtained prior to any modification to, relocation of, or removal of these stormwater features.

Written County approval must be obtained prior to any modification to, relocation of, or removal of these stormwater features.

This covenant runs with the land, and is binding on all parties having or acquiring any right, title, or interest in the Property.

This covenant cannot be terminated unless a notice of covenant termination is recorded by Pierce County.

_____ _____

Signature of owner(s):

_____ _____

Print Name:

STATE OF WASHINGTON)
) ss.
County of Pierce)

I certify that I know or have satisfactory evidence that _____ _____is/are the person(s) who appeared before me, and that said person(s) acknowledged that he/she/they signed this instrument and acknowledged it to be his/her/their free and voluntary act for the uses and purposes mentioned in the instrument.

DATED this _____ day of _____, 20_____.

_____
Signature

_____
Print Name

_____
Title

My Appointment Expires _____

Abbreviated Plan
Construction SWPPP Narrative

Complete this form for the construction of a single family residence on a lot that was previously created (cleared and graded) as part of a subdivision process. This form should only be used for projects that will create less than 5,000 sq. ft. of impervious/hard surfacing on lots that are less than 12,000 sq. ft. in size.

BASIC PROJECT INFORMATION:

Site Development Permit Number: _____

Parcel Number(s): _____

Site Address: _____

Subdivision Name: _____ Lot Number: _____

Project Manager Name*: _____ Phone Number: _____

Project Manager Email: _____

Project Description:

*Project manager is the individual who coordinates the construction, schedules subcontractors, and makes project decisions. Usually is the home builder, general contractor, or homeowner.

Element 1 – Preserve Vegetation/Mark Clearing Limits

This element does not apply to my project because:

- ☐ The site was cleared as part of permitted clearing activity and there is no vegetation, buffer areas, or critical areas on the parcel.
- ☐ Additional comments:

If it does apply, describe the steps you will take and select the "best management practices" (BMPs) you will use to minimize the area of clearing and vegetation removal:

- ☐ To preserve vegetation, protect critical areas, and to clearly show the limits of disturbance, the perimeter of the project area shall be marked prior to any clearing or earthwork operations with visible flagging, orange plastic barrier fencing and/or orange silt fencing as shown on the site development drawings.
- ☐ Additional comments:

Check the BMPs you will use:

- ☐ C101 Preserving Natural Vegetation
- ☐ C102 Buffer Zones
- ☐ C103 High Visibility Plastic or Metal Fence
- ☐ C233 Silt Fence

Element 2 – Construction Access

This element does not apply to my project because:

- ☐ The driveway to the construction area already exists and will be used for construction access. All equipment and vehicles will be restricted to staying on that existing impervious surface.
- ☐ Additional comments:

If it does apply, describe the steps you will take and select the "best management practices" (BMPs) you will use to minimize sediment transport onto roads:

☐ A stabilized construction entrance will be installed prior to any vehicles entering the site, at the location shown on the site development drawings.

☐ Additional comments:

Check the BMPs you will use:

☐ C105 Stabilized Construction Entrance
☐ C107 Construction Road/Parking Area Stabilization

Element 3 – Control Flow Rates

This element does not apply to my project because:

☐ Additional comments:

If it does apply, describe the steps you will take and "best management practices" (BMPs) you will use to control runoff flow rates from the site, referring to Element 4 BMPs below:

☐ Flow rates will be controlled by using SWPPP Element 4 sediment controls and BMP T.5.13 Amended Soils if necessary.

Element 4 – Sediment Control

This element does not apply to my project because:

☐ The site has already been stabilized and revegetated.

☐ Additional comments:

If it does apply, describe the steps you will take and "best management practices" (BMPs) you will use to minimize sediment leaving the site in runoff:

☐ Sediment will be controlled on-site by placement of the required sediment control BMPs for the site at the locations shown on the Stormwater Pollution Prevention Plan (SWPPP).

Check the BMPs you will use:

☐ C231 Brush Barrier
☐ C233 Silt Fence
☐ C234 Vegetated Strip
☐ C235 Straw Wattles

Element 5 – Stabilize Soils

This element <u>does not</u> apply to my project because:

☐ Additional comments:

If it <u>does</u> apply, describe the steps you will take and "best management practices" (BMPs) you will use to minimize soil exposure to wind and rain:

☐ Exposed soils shall be worked during the week until they have been stabilized. Soil stockpiles will be located within the disturbed area shown on the site development drawings. Soil excavated for the foundation will be backfilled against the foundation and graded to drain away from the building. No soils shall remain exposed and unworked for more than 2 days from October 1 to April 30. Once the disturbed landscape areas are graded, the grass areas will be seeded or sodded. All stockpiles will be covered with plastic or burlap if left unworked.

☐ Additional comments:

Check the BMPs you will use:

- ☐ C120 Temp & PermSeeding
- ☐ C121 Mulching
- ☐ C122 Nets & Blankets
- ☐ C123 Plastic Covering
- ☐ C124 Sodding
- ☐ C125 Topsoil (for solid stabilization)
- ☐ C130 Surface Roughening
- ☐ C131 Gradient Terraces
- ☐ C140 Dust Control

Element 6 – Protect Slopes

This element <u>does not</u> apply to my project because:

☐ No cut slopes over 4 feet high or slopes steeper than 2 feet horizontal to 1 foot vertical, and no fill slopes over 4 feet high will exceed 3 feet horizontal to 1 foot vertical. Therefore, there is no requirement for additional engineered slope protection.

☐ Additional comments:

If it <u>does</u> apply, describe the steps you will take and "best management practices" (BMPs) you will use to control erosion from steep slopes:

☐ Additional comments:

Check the BMPs you will use:

- ☐ C120 Temporary and Permanent Seeding
- ☐ C208 Triangular Silt Dike (Geotextile-Encased Check Dam)

Element 7 – Protect Permanent Drain Inlets

This element does not apply to my project because:

- ☐ The site is in a rural area with an open ditch in the County right-of-way or private road easement.
- ☐ There are no catch basins on or near the site.

If it does apply, describe the steps you will take and "best management practices" (BMPs) you will use to keep runoff sediment out of storm drains:

- ☐ Catch basins on the site or immediately off site in the right-of-way are shown on the site development drawings. Storm drain inlet protection shall be installed.
- ☐ Additional comments:

Check the BMPs you will use:

- ☐ C220 Storm Drain Inlet Protection

Element 8 – Stabilize Channels and Outlets

This element does not apply to my project because:

- ☐ Construction will occur during the dry weather. No storm drainage channels or ditches shall be constructed either temporary or permanent. A small swale shall be graded to convey yard drainage around the structure using a shallow slope; it shall be seeded after grading and stabilized.
- ☐ Additional comments:

If it does apply, describe the steps you will take and "best management practices" (BMPs) you will use to prevent erosion from entering existing stormwater outfalls and conveyance systems, such as pipes and ditches:

- ☐ A straw wattle shall be placed at the end of the swale to prevent erosion at the outlet of the swale.
- ☐ Additional comments:

Check the BMPs you will use:

- ☐ C202 Channel Lining
- ☐ C209 Outlet Protection
- ☐ C235 Straw Wattles

Element 9 – Control Pollutants

This element does not apply to my project because:

☐ Additional comments:

If it does apply, describe the steps you will take and "best management practices" (BMPs) you will use to keep pollutants out of the stormwater. Address all potential pollution sources on your project, such as material storage, fuel handling, equipment cleaning, management of waste materials, etc.:

☐ Any and all pollutants, chemicals, liquid products and other materials that have the potential to pose a threat to human health or the environment will be covered, contained, and protected from vandalism. All such products shall be kept under cover in a secure location on-site. Concrete handling shall follow BMP C151.

Check the BMPs you will use:

- ☐ C151 Concrete Handling
- ☐ C152 Sawcutting and Surfacing Pollution Prevention
- ☐ C153 Material Storage, Delivery, and Containment

Element 10 – Control Dewatering

This element does not apply to my project because:

☐ No dewatering of the site is anticipated.

It is does apply, describe the steps you will take and "best management practices" (BMPs) you will use to separate contaminated dewatering water from stormwater:

☐ Additional comments:

Check the BMPs you will use:

☐ C220 Storm Drain Inlet Protection

Element 11 – Maintain Best Management Practices

Describe the steps you will take to ensure that BMPs are in place and properly functioning as needed throughout construction:

☐ Best Management Practices or BMPs shall be inspected and maintained during construction and removed within 30 days after the County inspector or engineer determines the site is stabilized, provided they may be removed when they are no longer needed.

Element 12 – Manage the Project

Check the box below to acknowledge your understanding of the following statement:

☐ *The SWPPP shall be fully implemented at all times and modified whenever there is a change in design, construction, operation, or maintenance at the construction site that has or could have a significant effect on the discharge of pollutants to waters of the state.*

Element 13 – Protect Permanent Low Impact Development BMPs

This element <u>does</u> apply to my project because:

☐ **Additional comments:**

If it does not apply, describe the steps you will take and temporary BMPs you will use to prevent compaction of soils in the permanent low impact BMP areas, prevent sedimentation of infiltration surfaces, and otherwise protect the permanent low impact BMPs as the home is being constructed.

☐ Special construction site planning and sequencing in accordance with Section 3.3.3 of Volume II "Construction Stormwater Pollution Prevention" of the Manual.

☐ Special Infiltration and dispersion facility construction techniques in accordance with Section 3.3.4 of Volume II "Construction Stormwater Pollution Prevention" of the Manual.

☐ Special permeable pavement protection techniques in accordance with Section 3.3.4 of Volume II "Construction Stormwater Pollution Prevention" of the Manual.

The SWPPP must be properly coordinated and managed until final site stabilization is achieved. Failure to do so will essentially mean the project is not in compliance with County regulations.

The sequencing and phasing of temporary construction BMPs and permanent BMPs (especially LID BMPs) is crucial to the success of a project from a stormwater runoff and water quality perspective. Failure to properly sequence construction, phase construction, coordinate sub-contractors, and otherwise protect the LID BMPs, can cause failure of the BMP and require reconstruction or redesign.

The following construction sequence is ordered in a manner that protects the LID BMPs as much as possible while still trying to follow a typical construction sequence. If your project requires any changes in this order, please renumber them (skipping those that are not applicable) and explain the need for the changes.

_____ 1. Mark clearing limits

_____ 2. Mark location of LID BMPs

_____ 3. Project manager should perform walk thru with equipment operators prior to construction to clarify construction boundaries, limits of disturbance, and applicable LID BMP protective measures

_____ 4. Project manager must inform all sub-contractors of LID BMP protective measures

_____ 5. Install stabilized construction entrance

_____ 6. Install protection for existing drainage systems and permanent drain inlets

_____ 7. Establish staging areas for storage and handling polluted material and BMPs

_____ 8. Install temporary sediment control BMPs

_____ 9. Perform grading, install site utilities

_____ 10. Construct residence

_____ 11. Install permanent LID BMPs. Immediately install temporary LID BMP protective measures. Keep the permanent LID BMPs offline (disconnected from receiving stormwater runoff) until such time there is no longer a potential for sedimentation and erosion damage to the BMP. For example, permeable pavement will need to remain covered until final stabilization of neighboring soils is achieved, and there is no longer a possibility of tracking sediments on the permeable pavement by construction equipment. When an LID BMP can be brought online is specific to each BMP, and should be identified on the site development drawings.

_____ 12. Remove temporary sediment control BMPs after site reaches final stabilization

Explain the need for any changes in sequence:

Project Manager Signature _____