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STORMWATER SITE PLAN INSTRUCTIONS AND SUBMITTAL TEMPLATE “Medium” and “Large” Projects

[Includes Construction Stormwater Pollution Prevention Plan (SWPPP) and Permanent Stormwater Control Plan]

The submittal template for a Stormwater Site Plan has been developed from information presented in the Department of Ecology 2012 *Stormwater Management Manual for Western Washington* (Manual), which is the set of stormwater management standards for new development and redevelopment in Jefferson County.

The Stormwater Site Plan, Minimum Requirement #1 in the Manual, is the comprehensive report containing all of the technical information and analysis necessary to evaluate a proposed new development or redevelopment for compliance with stormwater requirements. A Stormwater Site Plan is required for all “medium” and “large” projects. (For background information, refer to the **Stormwater Management Information Sheet**.)

The Stormwater Site Plan includes a *Construction Stormwater Pollution Prevention Plan* (SWPPP – Minimum Requirement #2) that addresses sediment and erosion control during construction and a *Permanent Stormwater Control Plan* that addresses stormwater on the project site in its developed condition through dispersion, infiltration, or, if necessary, flow control and/or treatment facilities.

The steps for preparing and the content of a Stormwater Site Plan are summarized below and more fully described in Chapter 3 of Volume I of the Manual. The attached submittal template is intended to be a format applicable to typical rural residential construction. For these cases, completion and submittal of the template results in a complete land use application.

THE TWO MAIN COMPONENTS OF A STORMWATER SITE PLAN

I. Construction Stormwater Pollution Prevention Plan

A Construction Stormwater Pollution Prevention Plan (SWPPP) is a document that describes the potential for pollution problems on a construction project and which explains and illustrates the measures to be taken to control these problems. The basis for requiring a SWPPP, the twelve elements required to be in a SWPPP, the suggested step-by-step procedure to follow, and the suggested Best Management Practices (BMPs) to follow, are all described in Volume II of the Manual. A SWPPP consists of two sections, a narrative and the drawings. A description of the contents of the narrative and the drawings sections, and checklists for each of these sections, are in Section 3.3 of Volume II. For typical rural residential projects, DCD provides a **Construction Stormwater Pollution Prevention (SWPP) Best Management Practices (BMPs) Packet** to assist with the preparation of the Construction SWPPP.

II. Permanent Stormwater Control Plan

A Permanent Stormwater Control Plan is a document that describes the basis for, and the means of implementing, permanent Best Management Practices (BMPs) for flow control and treatment facilities after the project is completed. The content of a Permanent Stormwater Control Plan is described in Section 3.1.5 of Volume I of the Manual. The permanent BMPs and facilities for flow control and treatment are described in Volumes III, IV, and V of the Manual. The submittal template is intended for rural residential projects that can fully disperse or infiltrate stormwater. The template may not be appropriate or sufficient for applications involving larger or more complex projects.

INSTRUCTIONS

To prepare a Stormwater Site Plan, follow the steps outlined below, complete the Stormwater Site Plan template, sign and submit together with the Master Land Use Application (MLA). This information may also be provided on other diagrams, plans, studies, or attachments submitted with the project application. If so, please indicate such on this supplemental permit application. As the template is designed mostly for rural residential development, it may not be as useful for a larger project as an independently prepared Stormwater Site Plan. For any particular project, the Administrator may waive specific submittal requirements determined to be unnecessary for review of the application.

Note: *Prior to filling out the submittal template, read through these steps for preparing a Stormwater Site Plan. Preliminary or draft versions of the individual components may be helpful in the case that redesigning an original layout would result in a proposal that has less environmental impacts and is significantly simpler in terms of meeting stormwater requirements. For example, if the proposal can utilize the “full dispersion” BMP (T5.30 in the Manual), there is no need to provide for flow control or flow treatment on the site. For more information on the easiest way to meet stormwater requirements, refer to the “Low Impact Development” Information Sheet. BMPs used during the construction phase and that are included in the Construction SWPPP may also be useful as elements of the Permanent Stormwater Control Plan.*

STEP 1: COLLECT AND ANALYZE INFORMATION ON EXISTING CONDITIONS

Collect and review information on existing site conditions, including topography, drainage patterns, soils, ground cover, critical areas, adjacent areas, existing development, existing stormwater facilities. The Jefferson County website provides an Internet Map Server (IMS) function (<http://www.co.jefferson.wa.us>). If available, a Development Review Division (DRD) planner may be able to assist you in collecting this information.

Analyze the information to determine site limitations, including:

- Areas with high potential for erosion and sediment deposition (based on soil properties, slope, etc.);
- Locations of sensitive and critical areas (e.g., vegetative buffers, wetlands, steep slopes, floodplains, geologically hazardous areas, streams, susceptible aquifer recharge areas, etc.); and
- The natural receiving waters to which the stormwater runoff either directly or eventually discharges.

This information will be useful in site design and in the completion of the Permanent Stormwater Control Plan and Construction SWPPP.

STEP 2: PREPARE PRELIMINARY DEVELOPMENT LAYOUT

Based upon the analysis of existing site conditions, locate the buildings, driveways, roads, parking lots, and landscaping features for the proposed development. Consider the following points when laying out the site:

- Fit development to the terrain to minimize land disturbance; confine construction activities to the least area necessary and away from critical areas;
- Preserve areas with natural vegetation (especially forested areas) as much as possible;
- On sites with a mix of soil types, locate impervious areas over less permeable soil (e.g., till) and try to restrict development over more porous soils (e.g., outwash);
- Cluster buildings together;
- Minimize impervious areas; and
- Maintain and utilize the natural drainage patterns.

The preliminary development layout will assist in determining threshold discharge areas for calculating whether size thresholds under Minimum Requirements #6, #7, and #8 (for “large” projects) are exceeded and as a basis for the drawings and maps required for the Stormwater Site Plan.

STEP 3: PERFORM AN OFF-SITE ANALYSIS

This step is for “large” projects (i.e., adding 5,000 square feet or more of new impervious surface, converting $\frac{3}{4}$ acres of pervious surfaces to lawn or landscaped areas, or converting $2\frac{1}{2}$ acres of forested area to pasture) at the discretion of the UDC Administrator. See Volume I, Section 2.6.2 for more information.

STEP 4: REVIEW THE APPLICABLE MINIMUM REQUIREMENTS

The **Stormwater Calculation Worksheet** is a required submittal for all development and redevelopment land use applications. Completing the Worksheet helps determine the broad category of the proposal—“small,” “medium,” or “large” project—and the applicable Minimum Requirements. “Small” projects need to meet Minimum Requirement #2 only. “Medium” projects need to meet Minimum Requirements #1 through #5. “Large” projects need to meet all the Minimum Requirements, #1 through #9. The Minimum Requirements are as follows:

1. Preparation of Stormwater Site Plans (Chapter 3 of Manual)
2. Construction Stormwater Pollution Prevention
3. Source Control of Pollution
4. Preservation of Natural Drainage Systems and Outfalls
5. On-site Stormwater Management
6. Runoff Treatment
7. Flow Control
8. Wetlands Protection
9. Operations and Maintenance

The Manual provides descriptions and instructions in Volume I, Chapter 2. Information sheets, application materials, and DRD planners can help describe the Minimum Requirements to applicants.

Note: “Large” projects, as part of meeting Minimum Requirements #6 – Runoff Treatment – and #7 – Flow Control, are compared to Volume I, Chapter 2 in the Manual to determine whether on-site stormwater management BMPs are sufficient or treatment facilities or flow control facilities are required. The flow control determination may necessitate use of the Western Washington Hydrology Model managed by the Department of Ecology. Consult Sections 2.5.6 and 2.5.7 of Volume I, Chapter 2 of the Manual for more information.

Again, the easiest way to meet stormwater requirements is to design the project so that natural drainage is preserved, impervious surface is limited, and full dispersion (BMP T5.30) is implemented. By using “low impact development” techniques in the site design, the need for treatment and flow control facilities is eliminated, simplifying preparation of the Stormwater Site Plan and often the site construction process itself. For more information on these techniques, consult the “**Low Impact Development**” **Information Sheet**.

STEP 5: PREPARE A PERMANENT STORMWATER CONTROL PLAN

Select stormwater control BMPs and facilities that will serve the project site in its developed condition. The selection process is presented in Volume I, Chapter 4. After consideration is given to how selected BMPs and facilities fit within and serve the entire preliminary development layout, the designer may want to reconsider the site layout to reduce the need for construction of facilities or the size of the facilities by reducing the amount of impervious surfaces created and increasing the areas to be left undisturbed. The Permanent Stormwater Control Plan should contain the following sections (Section 3.1.5 of Volume I, Chapter 3):

- Existing Site Hydrology (i.e., the behavior of water on the site—above, below, and on the ground)
- Developed Site Hydrology (special requirements for projects and threshold discharge areas within projects that requirement treatment and flow facilities)
- Performance Standards and Goals
- Flow Control System
- Water Quality System
- Conveyance System Analysis and Design

Essentially, in terms of site hydrology, the developed condition of the site should match the pre-developed condition, with is forested land cover (unless reasonable, historic information is provided that indicates the site was prairie prior to settlement). For “large” projects, totals of impervious surfaces, pollution-generating impervious surfaces, and pollution generating pervious surfaces must be tabulated for each threshold discharge area for which on-site BMPs are the sole stormwater management approach.

STEP 6: PREPARE A CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

The Construction SWPPP for projects adding or replacing 2,000 square feet of impervious surface or more or clearing 7,000 square feet or more (i.e., “medium” or “large” projects), must contain sufficient information to demonstrate to the UDC Administrator that the potential pollution problems have been adequately addressed for the proposed project. An adequate Construction SWPPP includes a narrative and drawings. The narrative is a written statement to explain and justify the pollution prevention decisions made for a particular project. The narrative contains concise information concerning existing site conditions, construction schedules, and other pertinent items that are not contained on the drawings. The drawings and notes describe where and when the various BMPs should be installed, the performance the BMPs are expected to achieve, and actions to be taken if the performance goals are not achieved. There are 13 Elements that must be considered in the development of a Construction SWPPP, unless site conditions render that element unnecessary and the exemption from that element is clearly justified in the narrative. The 13 Elements cover the general water quality protection strategies for limiting site impacts during construction and are described in detail in Section 2.5.2, Volume I of the Manual.

The 13 Elements of Minimum Requirement #2, Construction Stormwater Pollution Prevention, are:

- | | | |
|----------------------------------|-----------------------------------|--|
| 1. Mark Clearing Limits | 6. Protect Slopes | 11. Maintain BMPs |
| 2. Establish Construction Access | 7. Protect Drain Inlets | 12. Manage the Project |
| 3. Control Flow Rates | 8. Stabilize Channels and Outlets | 13. Protect Low Impact Development BMP's |
| 4. Install Sediment Controls | 9. Control Pollutants | |
| 5. Stabilize Soils | 10. Control De-watering | |

For ease of use, the Stormwater Site Plan submittal template below includes a section that lists the 13 Elements and provides the opportunity to include sufficient information for rural residential and other relatively simple Construction SWPPPs. For more complex projects, a separate narrative and set of plans may be preferred or required.

Volume II of the Manual is dedicated to Construction Stormwater Pollution Prevention. A step-by-step BMP selection process and a complete description of the BMPs applicable to each element is provided in Chapters 3 and 4. Additionally, DCD provides a **Construction Stormwater Pollution Prevention (SWPP) Best Management Practices (BMPs) Packet** that summarizes the 12 Elements and excerpts from the Manual sample sediment and erosion control measures for typical rural residential development. The Packet should prove useful for completing the Construction SWPPP component of the submittal template.

On construction sites that infiltrate all stormwater runoff, the primary consideration in the preparation of the Construction SWPPP is the protection of the infiltration facilities from fine sediments during the construction phase and protection of ground water from other pollutants. On construction sites that discharge to surface water, the primary consideration in the preparation of the Construction SWPPP is compliance with the State Water Quality Standards. The step-by-step procedure outlined in Volume II, Section 3.2 is recommended for the development of these Construction SWPPPs.

STEP 7: COMPLETE THE STORMWATER SITE PLAN

The Stormwater Site Plan encompasses the entire submittal to Jefferson County in conjunction with a land use or building permit application. The following documents or sections should be included:

- Project Overview
- Existing Conditions Summary
- Off-site Analysis Report (if required; usually for “large” projects)
- Permanent Stormwater Control Plan
- Special Reports and Studies (such as soil testing, wetland delineation, etc., if applicable)
- Other Permits (approvals required by other regulatory agencies that include stormwater management conditions)
- Operation and Maintenance Manual (for each flow control and treatment facility, if applicable)
- Bond Quantities Worksheet (for performance bond or other financial guarantee for proper construction and operation of construction site BMPs and permanent drainage facilities, if required)

The submittal template below is designed for rural residential and other relatively small or simple projects. For larger and more complex projects—particularly those that involve stormwater treatment and/or flow control—more information may be required and an independent Stormwater Site Plan may be the preferable submittal format.

STEP 8: CHECK COMPLIANCE WITH ALL APPLICABLE MINIMUM REQUIREMENTS

A Stormwater Site Plan as designed and implemented should specifically fulfill all Minimum Requirements applicable to the project. The applicant should review to check that these requirements are satisfied and that all information provided is true and correct prior to signing and submitting the Stormwater Site Plan. (The signature box appears at the end of the submittal template.)



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STORMWATER SITE PLAN SUBMITTAL TEMPLATE

MLA # _____ PROJECT/APPLICANT NAME: _____

Please answer all of the following questions to the best of your ability. Where the question calls for depiction on a site map, the applicant may choose to either incorporate the elements into the general plot plan for the Master Land Use Application or to submit a separate stormwater site plan map.

Project Overview

1. Describe the proposed developed conditions of the site. Indicate position and relative size of proposed improvements on the site map.

Existing Conditions Summary

2. Describe the existing topography. Indicate contours on the site map.

3. Describe the existing vegetation. Indicate native vegetation areas on the site map.

4. Describe the existing soils. Indicate soil type on the site map.

5. Describe the existing site hydrology (i.e., drainage; behavior of water on the site—above, below, and on the ground). Indicate existing stormwater drainage to and from the site on the site map. Depict separate drainage basins on the site map, if applicable, and indicate acreage of each.

6. Describe any excess levels of noise generated by the proposed use or activity:

7. Describe significant geographic features and critical areas (i.e., environmentally sensitive areas such as wetlands, streams, steep slopes, etc.) on the site. Indicate location on the site map.

8. Describe the general vicinity of the site, including adjacent land uses and structures, utilities, roads, and sensitive/critical areas (streams, wetlands, lakes, steep slopes, etc.).

Permanent Stormwater Control Plan

This portion of the Stormwater Site Plan consists of the selection and installation of the appropriate stormwater control BMPs and facilities to remain in place after construction of the project is completed.

“Medium” size projects are required to have the totals calculated of all impervious surfaces, pollution-generating impervious surfaces, and pollution-generating pervious surfaces to verify that the thresholds for treatment facilities and flow control facilities are not exceeded.

9. Describe the developed site hydrology, as proposed. Indicate whether stormwater will be fully dispersed (i.e., per BMP T5.30 in the Manual) or, if not, what types of stormwater flow control will be utilized for the site or specific threshold discharge areas within the site. Locate these facilities on the site plan and differentiate proposed facilities from existing facilities.

10. If the project requires the use of stormwater treatment facilities, describe the types of stormwater treatment facilities proposed for use on the site. Locate these facilities on the site plan and differentiate proposed facilities from existing facilities. [This is normally for “large” projects or projects that involve the potential for dispersion of contaminants.]

11. Describe the performance goals and standards applicable to the project.

12. Describe the flow control system.

13. Describe the water quality system.

14. Describe the conveyance system analysis and design.

15. Describe the source of fill material, physical characteristics of fill material, and deposition of excess material.

16. Proposed methods of placement and compaction consistent with the applicable standards on Appendix Chapter 33 of the Uniform Building Code.

17. Describe the proposed surfacing material.

18. Describe methods for restoration of the site.

19. An Operation and Maintenance Manual is required for each flow control and treatment facility. [This is normally required for "large" projects only and only those for which facilities are required to control flow or treat runoff.] If included, list the Manuals here.

20. List here and include any special reports or studies conducted to prepare the Stormwater Site Plan.

21. List other necessary permits and approvals as required by other regulatory agencies. If those permits or approvals include conditions that affect the drainage plan or contain more restrictive drainage-related requirements, describe those conditions or restrictions here.

CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

The Construction SWPPP addresses sediment and erosion control during construction. The BMPs indicated by the applicant in the template that follows must be installed on the ground during all construction phases of the project. The proponent is responsible for preventing sediment and erosion impacts to environmentally sensitive areas and off-site areas. Consult the **Construction Stormwater Pollution Prevention (SWPP) Best Management Practices (BMPs) Packet** for guidance, particularly with rural residential development.

SECTION I – CONSTRUCTION SWPPP NARRATIVE

1. **Construction Stormwater Pollution Plan Elements.** Describe how each of the Construction SWPPP elements has been or will be addressed. Identify the type and location of BMPs used to satisfy the required element. If an element is not applicable to the proposal, justify in writing. Detailed descriptions of the 13 Elements are found at Volume II Section 3.3.3 of the Manual (beginning on page 3-11).

13 Required Elements – Construction SWPPP

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.

13 Required Elements – Construction SWPPP (continued)

8. Stabilize Channels and Outlets.

9. Control Pollutants.

10. Control De-Watering (the act of pumping groundwater or stormwater away from an active construction site).

11. Maintain Best Management Practices (BMPs).

12. Manage the Project.

13. Protect Low Impact Development BMP's

2. **Adjacent Areas.**

a. Description of the adjacent areas that may be affected by site disturbance (e.g., streams, lakes, wetlands, residential areas, roads).

b. Description of the downstream drainage path leading from the site to the receiving body of water (minimum distance of 400 yards).

3. **Environmentally Sensitive Areas.**

a. Description of environmentally sensitive areas that are on or adjacent to the site.

b. Description of special requirements for working in or near environmentally sensitive areas.

4. **Erosion Problem Areas.** Description of potential erosion problems on site in the context of the characteristics of the on-site soils (e.g., erodibility, settleability, permeability, depth, texture, soil structure).

5. **Construction Phasing.**

a. Construction sequence

b. Construction phasing (if proposed)

6. **Construction Schedule.** Wet season is October 1 through April 30 (page 2-20 of the Manual).

I. Provide a proposed construction schedule.

II. Wet Season Construction Activities.

a. Proposed wet season construction activities.

b. Proposed wet season construction activities for environmentally sensitive areas.

7. **Financial/Ownership Responsibilities.**

a. Identify the property owner responsible for the initiation of bonds and/or other financial securities.

b. Describe bonds and/or other evidence of financial responsibility for liability associated with erosion and sedimentation impacts.

8. **Engineering Calculations.** Provide Design Calculations on a separate sheet for the following, if applicable.

a. Sediment Ponds/Traps. _____

b. Diversions. _____

c. Waterways. _____

d. Runoff/Stormwater Detention Calculations _____

SECTION II – EROSION AND SEDIMENT CONTROL PLAN

Sediment and erosion control measures may be depicted on the master land use application plot plan, a stormwater site plan, and/or a separate Construction SWPPP site plan. This is a checklist to ensure that the following are depicted on a site plan:

<p>1. General.</p> <ul style="list-style-type: none">a. Vicinity Mapb. Jefferson County Approval Blockc. Erosion and Sediment Control Notes
<p>2. Site Plan.</p> <ul style="list-style-type: none">a. Legal description of subject property.b. North arrow.c. Indicate boundaries of existing vegetation (e.g., tree lines, pasture areas, etc.).d. Identify and label areas of potential erosion problems.e. Identify FEMA base flood boundaries and Shoreline Management boundaries (if applicable).f. Show existing and proposed contours.g. Indicate drainage basins and direction of flow for individual drainage areas.h. Label final grade contours and identify developed condition drainage basins.i. Delineate areas that are to be cleared and graded.j. Show all cut and fill slopes indicating top and bottom of slope catch lines.
<p>3. Conveyance Systems.</p> <ul style="list-style-type: none">a. Designate locations for swales, interceptor trenches, or ditches.b. Show all temporary and permanent drainage pipes, ditches, or cut-off trenches required for erosion & sediment control.c. Provide minimum slope and cover for all temporary pipes or call out pipe inverts.d. Shows grades, dimensions, and direction of flow in all ditches, swales, culverts and pipes.e. Provide details for bypassing off-site runoff around disturbed areas.f. Indicate locations and outlets of any dewatering systems.
<p>4. Location of Detention Best Management Practices (BMPs). Identify location of detention BMPs.</p>
<p>5. Erosion and Sediment Control Facilities.</p> <ul style="list-style-type: none">a. Show the locations of sediment trap(s), pond(s), pipes and structures.b. Dimension pond berm widths and inside and outside pond slopes.c. Indicate the trap/pond storage required and the depth, length, and width dimensions.d. Provide typical section views through pond and outlet structure.e. Provide typical details of gravel cone and standpipe, and/or other filtering devices.f. Detail stabilization techniques for outlet/inlet.g. Detail control/restrictor device location and details.h. Specify mulch and/or recommended cover of berms and slopes.i. Provide rock specifications and detail for rock check dam(s), if applicable.j. Specify spacing for rock check dams as required.k. Provide front and side sections of typical rock check dams.l. Indicate the locations and provide details and specifications for silt fabric.m. Locate the construction entrance and provide a detail.
<p>6. Detailed Drawings. Any structural practices used that are not referenced in the Ecology Manual should be explained and illustrated with detailed drawings.</p>
<p>7. Other Pollutant BMPs. Indicate on the site plan the locations of BMPs to be used for the control of pollutants other than sediment (e.g., concrete wash water).</p>
<p>8. Monitoring Locations. Indicate on the site plan the water quality sampling locations to be used for monitoring water quality on the construction site. Sampling stations should be located upstream and downstream of the project site.</p>

Stormwater Site Plan Changes

If the designer wishes to make changes or revisions to the originally approved Stormwater Site Plan, the proposed revisions shall be submitted to DCD prior to construction. The submittal shall include substitute pages that include all proposed changes, revised drawings showing any structural changes, and any other supporting information that explains and supports the reason for the change.

Final Corrected Plan Submittal

If the project included construction of conveyance systems, treatment facilities, flow control facilities, or structural source control BMPs (not standard on-site stormwater management BMPs), the applicant shall submit a final corrected plan ("as-builts") when the project is completed. These should be engineering drawings (stamped by a licensed civil engineer) that accurately represent the project as constructed.

APPLICANT SIGNATURE

By signing the Construction SWPPP worksheet, I as the applicant/owner attest that the information provided herein is true and correct to the best of my knowledge. I also certify that this application is being made with the full knowledge and consent of all owners of the affected property.

(LANDOWNER OR AUTHORIZED REPRESENTATIVE SIGNATURE)

(DATE)

THIS SPACE MAY BE USED FOR ADDITIONAL NOTES, IF NEEDED: