



Final Feasibility Checklist *City of Kelso*

ELIGIBLE PROJECTS

Construction and land disturbing projects that have been referred from the **Abbreviated Stormwater Site Plan** for one or more permanent stormwater management Best Management Practices (BMPs) are eligible to use this form.

INSTRUCTIONS FOR USING THIS FORM

The purpose of this form is to assist the applicant in determining the feasibility of permanent stormwater management BMPs. You should have already begun filling out the **Abbreviated Stormwater Site Plan**. That application directed you to this form to determine final feasibility for BMPs. Once you have determined the feasibility of a BMP on this form, return to the **Abbreviated Stormwater Site Plan** and mark the appropriate checkboxes and follow the instructions. You may be directed back to this form multiple times until you find a BMP that is feasible on your site.

Find the appropriate BMP on this form and answer the questions to determine final feasibility. Then follow the instructions at the end of the list of questions before returning to the **Abbreviated Stormwater Site Plan**. Some questions require input from an appropriate licensed professional.

Submit the completed form with the **Abbreviated Stormwater Site Plan**.

Directory

- To find feasibility of "Full Dispersion," go to page 2.
- To find feasibility of "Downspout Full Infiltration," go to page 2.
- To find feasibility of "Rain Garden," start on page 3.
- To find feasibility of "Permeable Pavement," start on page 5.

PROJECT SITE INFORMATION

Parcel #:

Address/Location:

APPLICANT

Business Name:

Contact Name:

PROPERTY OWNER OR AUTHORIZED AGENT

I hereby certify that I have read and examined this application and know the same to be true and correct, and I am authorized to apply for this permit.

Signature:

Printed Name:

Date:

Full Dispersion, BMP T5.30

If the answer to any of the following questions is NO, Full Dispersion is **not feasible**. If you answer NO to any question, stop and mark “Full Dispersion is NOT feasible” below. You do not need to continue answering questions if the answer to any question is NO.

Feasibility Criteria and Setbacks	YES	NO
Can the dispersion device (see definition on page 8) be located more than 5 feet from any structure, foundation, or property line?	<input type="checkbox"/>	<input type="checkbox"/>
If there is septic system, can the dispersion device be located more than 10 feet downgradient from the drainfield or reserve area? If there is no septic system, mark YES.	<input type="checkbox"/>	<input type="checkbox"/>
Can the dispersion device be located more than 10 feet from any environmentally sensitive area (as defined by KMC 17.26), such as wetlands, geologically hazardous areas, fish and wildlife conservation areas, frequently flood areas, and critical aquifer recharge areas?	<input type="checkbox"/>	<input type="checkbox"/>

Full Dispersion is **NOT** feasible (the answer to ANY questions is NO). Return to the **Abbreviated Stormwater Site Plan**. Mark “NO” on Step 5 on page 7 of that form and follow the instructions.

Full Dispersion is **feasible** (the answer to ALL questions is YES). Return to the **Abbreviated Stormwater Site Plan**. Mark “YES” on Step 5 on page 7 of that form and follow the instructions.

Downspout Full Infiltration, BMP T5.10A

If the answer to any of the following questions is NO, Downspout Full Infiltration is **not feasible**. If you answer NO to any question, stop and mark “Downspout Full Infiltration is NOT feasible” below. You do not need to continue answering questions if the answer to any question is NO.

Feasibility Criteria and Setbacks	YES	NO
Can the drywell or trench be placed more than 10 feet from any structure, foundation, sensitive area (as defined by KMC 17.26), or property line?	<input type="checkbox"/>	<input type="checkbox"/>
If there is a septic system, can the dry well or infiltration trench be located more than 10 feet downgradient from the drainfield or reserve area? If there is no septic system, mark YES.	<input type="checkbox"/>	<input type="checkbox"/>

Downspout Full Infiltration is **NOT** feasible (the answer to ANY question is NO). Return to the **Abbreviated Stormwater Site Plan**. Mark “NO” on Step 6 on page 8 of that form and follow the instructions.

Downspout Full Infiltration is **feasible** (the answer to ALL questions is YES). Return to the **Abbreviated Stormwater Site Plan**. Mark “Yes” on Step 6 on pages 7 and 8 of that form and follow the instructions.

Rain Garden, BMP T5.14**Part 1**

If the answer to any of these questions is NO, Rain Garden is **not feasible**. If you answer NO to any question, stop and mark “Rain Garden is **NOT** feasible” on the next page. You do not need to continue answering questions if the answer to any question is NO.

Part 1: Feasibility Criteria and Setbacks	YES	NO
Can the rain garden be located more than 10 feet from any structure, foundation, sensitive area or property line?	<input type="checkbox"/>	<input type="checkbox"/>
Can the rain garden be located on a slope of 8% or less?	<input type="checkbox"/>	<input type="checkbox"/>
Can the proposed rain garden be located more than 100 feet from any closed or active landfill?	<input type="checkbox"/>	<input type="checkbox"/>
Can the proposed rain garden be located more than 100 feet from any drinking water well?	<input type="checkbox"/>	<input type="checkbox"/>
If there is an on-site sewage disposal system (septic), can the rain garden be located more than 10 feet downgradient from the drainfield, reserve area, or grey water reuse system? If there is not a septic system on site, mark YES.	<input type="checkbox"/>	<input type="checkbox"/>
If there is an underground storage tank on site (1100 gal or less), can the rain garden be located more than 10 feet from the tank and its connecting pipes? If there is not an underground storage tank on site, mark YES.	<input type="checkbox"/>	<input type="checkbox"/>
If there is an underground storage tank on site (1100 gal or more), can the rain garden be located more than 100 feet from the tank and its connecting pipes? If there is not an underground storage tank on site, mark YES.	<input type="checkbox"/>	<input type="checkbox"/>
Are the site and neighboring properties free of any known soil or groundwater contamination (e.g. not a Federal Superfund site or state cleanup site under the Model Toxics Control Act (MTCA))?	<input type="checkbox"/>	<input type="checkbox"/>

If the answer to ANY question in Part 1 above is NO, mark “Rain Garden is **NOT** feasible” on the next page.

If answer to ALL of the questions in Part 1 above is YES, continue to Part 2 of the Rain Garden feasibility determination on the next page.

Part 2 of Rain Garden

The following feasibility criteria must be based on an evaluation of the site-specific conditions and a written recommendation from an appropriate licensed professional (e.g. engineer, geologist, or hydrogeologist). Attach the evaluation along with this form to the **Abbreviated Stormwater Site Plan**.

An evaluation by a licensed professional is only necessary if you suspect a rain garden is **not feasible** on your site. You may choose to build a rain garden without hiring a licensed professional to evaluate these questions. If you choose not to consult a licensed professional, mark "Rain Garden is feasible" below and follow the instructions.

If the answer to ANY of the following questions is YES, Rain Garden is **not feasible**. If you answer YES to any question, stop and mark "Rain Garden is NOT feasible" below. You do not need to continue answering questions if the answer to any question is YES.

Part 2: Feasibility Criteria and Setbacks	YES	NO
If the project is re-development, is there a lack of usable space for a rain garden? If the site is not re-development, mark NO.	<input type="checkbox"/>	<input type="checkbox"/>
Is the only available site for the rain garden in an area that would not allow for a safe stormwater overflow pathway to a street drain, ditch, stream, channel, or private storm sewer?	<input type="checkbox"/>	<input type="checkbox"/>
Is the only available site for the rain garden in an area where infiltrating water would threaten existing below grade basements?	<input type="checkbox"/>	<input type="checkbox"/>
Is the site within an area whose groundwater drains into an erosion hazard or landslide hazard area?	<input type="checkbox"/>	<input type="checkbox"/>
Is the only available site for the rain garden in an area that 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?	<input type="checkbox"/>	<input type="checkbox"/>

The answer to ALL of the questions in Part 2 above must be NO for Rain Garden to be **feasible**.

Rain Garden is **NOT** feasible.

- 1) If there will be new/replaced other hard surfaces on the project site, then continue to the next page to evaluate using Permeable Pavement for those surfaces; or
- 2) If there will not be new/replaced other hard surfaces on the project site, then return to the **Abbreviated Stormwater Site Plan**. Mark "NO" in Step 7 on page 8 and follow the instructions.

Rain Garden is **feasible**.

- 1) If there will be new/replaced other hard surfaces on the project site *that will not flow into the Rain Garden*, then continue to the next page to evaluate using Permeable Pavement for those surfaces; or
- 2) If there will not be new/replaced other hard surfaces on the project, then return to the **Abbreviated Stormwater Site Plan**. Mark "YES" in Step 7 on page 8 and follow the instructions in item 2.

Permeable Pavement, BMP T5.15**Part 1**

If the answer to any of the following questions is NO, Permeable Pavement is **not feasible**. If you answer NO to any question, stop and mark "Permeable Pavement is NOT feasible" below. You do not need to continue answering questions if the answer to any question is NO.

Part 1: Feasibility Criteria and Setbacks	YES	NO
Can the proposed permeable pavement be located in areas unlikely to have long term excessive sediment deposition after construction (e.g. construction and landscaping material yards)?	<input type="checkbox"/>	<input type="checkbox"/>
Can the proposed permeable pavement be located on an area of the site NOT defined as a "high use location"? (See definition on page 8)	<input type="checkbox"/>	<input type="checkbox"/>
Can the proposed permeable pavement be located in areas without "industrial activity" as identified in 40 CFR 122.26(b)(14)?	<input type="checkbox"/>	<input type="checkbox"/>
Is the proposed permeable pavement located where the risk of concentrated pollutant spills is unlikely (i.e. NOT at gas stations, truck stops, industrial chemical storage sites, etc.)?	<input type="checkbox"/>	<input type="checkbox"/>
Can the proposed permeable pavement be located more than 100 feet from any closed or active landfill? (See definition on page 8)	<input type="checkbox"/>	<input type="checkbox"/>
If the pavement is a pollution-generating hard surface (see definition on page 8), can the proposed permeable pavement be located more than 100 feet from any drinking water well? If the pavement is not a pollution-generating hard surface, mark YES.	<input type="checkbox"/>	<input type="checkbox"/>
Can the proposed permeable pavement be located more than 10 feet from any structure, foundation, sensitive area or property line?	<input type="checkbox"/>	<input type="checkbox"/>
If there is an on-site sewage disposal system (septic), can the permeable pavement be located more than 10 feet downgradient from the drainfield, reserve area, or grey water reuse system? If there is not a septic system, mark YES.	<input type="checkbox"/>	<input type="checkbox"/>
If there is an underground storage tank on site, can the permeable pavement be located more than 10 feet from the tank and its connecting pipes? If there is not an underground storage tank, mark YES.	<input type="checkbox"/>	<input type="checkbox"/>
If replacing existing impervious surfaces, is the existing surface a non-pollution generating surface over soil with a saturated hydraulic conductivity (K_{SAT}) of less than four inches per hour? If you are not replacing impervious surfaces, mark YES.	<input type="checkbox"/>	<input type="checkbox"/>
Can the site 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? Or can the site be designed with a grid system (upper slope limit can range from 6 to 12 percent; check with manufacturer and local supplier)?	<input type="checkbox"/>	<input type="checkbox"/>
Are the site and neighboring properties free of any known soil or groundwater contamination (e.g. not a Federal Superfund site or state cleanup site under the Model Toxics Control Act (MTCA))?	<input type="checkbox"/>	<input type="checkbox"/>

Continued on next page

Part 1: Feasibility Criteria and Setbacks	YES	NO
<p>If the pavement is a pollution-generating hard surface (see definition on page 8), do the soils meet all of the following criteria for providing treatment:</p> <ul style="list-style-type: none"> • Cation exchange capacity (CEC) of the treatment soil is ≥ 5 milliequivalents CEC/100 g dry soil (USEPA Method 9081). • Depth of soil used for infiltration treatment is a minimum of 12 inches below permeable pavement. • Minimum one percent organic content. • Not consist of waste fill materials <p>Notes:</p> <ol style="list-style-type: none"> 1. If the pavement is not a pollution-generating hard surface, mark YES. 2. If the pavement is a pollution-generating hard surface, then a laboratory analysis is required to demonstrate the soil has the required treatment capacity. Alternately, the applicant may elect to omit the laboratory analysis and instead provide a 6-inch layer of sand under the pavement meeting the sand filter specification of BMP T8.10, Basic Sand Filter Basin. If the applicant chooses this option, mark YES and also mark the box below. <p><input type="checkbox"/> Permeable pavement design requires a 6-inch sand filter layer.</p>	<input type="checkbox"/>	<input type="checkbox"/>

If the answer to ANY question in Part 1 above is NO, mark “Permeable Pavement is **NOT** feasible” on the next page.

If answer to ALL of the questions in Part 1 above is YES, continue to Part 2 of the Permeable Pavement feasibility determination on the next page.

Part 2 of Permeable Pavement

The following criteria must be based on an evaluation of the site-specific conditions and a written recommendation from an appropriate licensed professional (e.g. engineer, geologist or hydrogeologist). Attach the evaluation along with this form to the **Abbreviated Stormwater Site Plan**.

An evaluation by a licensed professional is only necessary if you suspect permeable pavement is **not feasible** on your site. You may choose to build a permeable pavement without hiring a licensed professional to evaluate these questions. If you choose not to consult a licensed professional, mark “Permeable Pavement is feasible” below and follow the instructions.

If the answer to any of the following questions is YES, Permeable Pavement is **not feasible**. If you answer YES to any question, stop and mark “Permeable Pavement is NOT feasible” below. You do not need to continue answering questions if the answer to any question is YES.

Part 2: Feasibility Criteria and Setbacks	YES	NO
Is the site within an area whose groundwater drains into an erosion hazard, or landslide hazard area?	<input type="checkbox"/>	<input type="checkbox"/>
Is the proposed permeable pavement located where the infiltrating and ponding water below the proposed permeable pavement area compromise adjacent impervious pavements?	<input type="checkbox"/>	<input type="checkbox"/>
Is the proposed permeable pavement located where infiltrating water below the proposed permeable pavement area will threaten existing below grade basements?	<input type="checkbox"/>	<input type="checkbox"/>
Is the proposed permeable pavement located where infiltrating water will threaten shoreline structures such as bulkheads?	<input type="checkbox"/>	<input type="checkbox"/>
Is the proposed permeable pavement area down slope of steep, erosion prone areas that are likely to deliver sediment?	<input type="checkbox"/>	<input type="checkbox"/>
Is the proposed permeable pavement area where fill soils are used that can become unstable when saturated?	<input type="checkbox"/>	<input type="checkbox"/>
Is the proposed permeable pavement area located on an excessively steep slope where water within the aggregate base layer or at any sub-grade 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?	<input type="checkbox"/>	<input type="checkbox"/>
Would installation of permeable pavement threaten the safety or reliability of pre-existing underground utilities, pre-existing underground storage tanks, or pre-existing road sub-grades?	<input type="checkbox"/>	<input type="checkbox"/>
For pavement bearing vehicle traffic, are the underlying soils unsuitable for supporting traffic loads when saturated? Soils meeting a California Bearing Ratio of 5% are considered suitable for residential access roads. If the pavement will not bear vehicle traffic or if the pavement is a residential driveway, mark NO.	<input type="checkbox"/>	<input type="checkbox"/>

The answer to ALL of these questions must be NO for Permeable Pavement to be **feasible**.

- Permeable Pavement is **NOT** feasible. Return to the **Abbreviated Stormwater Site Plan**. Mark “NO” in Step 7 on page 8 of that form and follow the instructions.
- Permeable Pavement is **feasible**. Return to the **Abbreviated Stormwater Site Plan**. Mark “YES” in Step 7 on page 8 of that form and follow the instructions in item 2.

DEFINITIONS**Dispersion Device**

A dispersion device is a downspout dispersion trench or a splash block.

High-use Location

Those locations that typically generate high concentrations of oil due to high traffic turnover or the frequent transfer of oil. High use locations include:

- An area of a commercial or industrial site subject to an expected average daily traffic (ADT) count equal to or greater than 100 vehicles per 1,000 square feet of gross building area. Gasoline stations, with or without small food stores, will likely exceed the high-use site threshold.
- An area of a commercial or industrial site subject to petroleum storage and transfer in excess of 1,500 gallons per year, not including routinely delivered heating oil.
- An area of a commercial or industrial site subject to parking, storage or maintenance of 25 or more vehicles that are over 10 tons gross weight (trucks, buses, trains, heavy equipment, etc.).
- A road intersection with a measured average daily traffic (ADT) count of 25,000 vehicles or more on the main roadway and 15,000 vehicles or more on any intersecting roadway, excluding projects proposing primarily pedestrian or bicycle use improvements.

Landfill

A disposal facility or part of a facility at which solid waste is placed in or on land. (Cowlitz County Code 19.15.050)

Pollution-Generating Hard Surface (PGHS)

Those hard surfaces considered to be a significant source of pollutants in stormwater runoff. Such surfaces include those which are subject to: vehicular use; industrial activities (as further defined in this glossary); or storage of erodible or leachable materials, wastes, or chemicals, and which receive direct rainfall or the run-on or blow-in of rainfall; metal roofs unless they are coated with an inert, non-leachable material (e.g., baked-on enamel coating); or roofs that are subject to venting significant amounts of dusts, mists, or fumes from manufacturing, commercial, or other indoor activities. For projects using the **Abbreviated Stormwater Site Plan**, PGHS include residential roads, driveways, recreational vehicle parking areas, and parking lots.

Underground Storage Tank

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% or more of the storage volume (including volume in the connecting piping system) is beneath the ground surface.