



**CITY OF WENATCHEE**

P.O. BOX 519 ● WENATCHEE, WASHINGTON 98807-0519 ● (509) 888-3202

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**DEPARTMENT OF PUBLIC WORKS  
PRE-APPROVED PLANS POLICY**

**Policy D-2: STORMWATER POLICIES**

Stormwater management is required for all new development and re-development projects. In addition, land-disturbing activities of all sizes may require a Land Surface Modification permit and temporary stormwater control. Please note that stormwater requirements vary based on many factors including, the proposed site use, disturbed area, impervious surfaces, soils, parking spaces, structures, and location. Stormwater management practices that work at one site may not work for every project; it is important to review all of the options and select the stormwater management practice best-suited for your project.

Methods, measures, and facilities intended to control stormwater runoff quantity and quality are collectively referred to as Best Management Practices (BMPs). The Washington State Department of Ecology (DOE) has compiled a comprehensive manual on acceptable BMPs: The Stormwater Management Manual for Eastern Washington (SWMMEW) 2019 edition. This manual has been adopted by the City.

The following policy strives to clarify the stormwater development requirements of Wenatchee City Code (WCC 4.08, 9.20, 9.30 and 10.60), Development requirements (WCC 4.08, 9.20, and Title 10 and 11), Utility Policy and Regulations (WCC 9.16) and the requirements set forth by the SWMMEW. For the most current information on the City of Wenatchee’s municipal stormwater system, please see the Development Resources Map at <https://maps.wenatcheewa.gov/portal/apps/sites/#/publichome>.

**I. Stormwater Management for Projects Smaller than 1 Acre**

***This section does not apply to projects that disturb greater than one acre or are part of a common plan of development disturbing more than one acre as set forth in WCC 9.20. If the project is 1 acre or greater, please go to Section II, Stormwater Management for Projects 1 Acre and Greater or Part of a Common Plan of Development.***

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This section applies to new development or redevelopment projects that meet one or more of the following criteria:

1. Off-street parking
  - Off-street parking of six or more vehicles being approximately 1,000 sq. ft. of pollution generating impervious surface (PGIS) triggers stormwater collection into stormwater facilities per (WCC 10.60).
  - Other off-street parking triggers stormwater collection of PGIS into stormwater facilities per (WCC 10.65)
  - Off -street gravel areas of property are considered imperious surfaces (WCC 9.16) and are subject to the same conditions as other impervious surfaces.
  
2. Check Core Element #5 Treatment applicability for New Impervious surface or Replaced Impervious surface see Flow Chart Figure 2.2. on page 13 below.
  - Does the project add or change 5,000 square feet (SF) or more of Pollutant Generating impervious surface?
    - If yes, Check Figure 2.3, Runoff Treatment Applicability
      - Provide Basic Treatment
      - Provide metals treatment, if applicable
      - Provide oil control, if applicable
    - If no (being less than 5,000 SF), then no treatment is required.
  
3. Specific site use may trigger water quality requirements. See the SWMMEW, Section 2.7.6 Core Element #5, page 91-92.

If the project does not meet any of the criteria above, follow these steps:

- Check if a Land Surface Modification Permit is needed.
- Implement temporary best management practices to prevent stormwater pollution during construction. Common pollutants are dirt and wash water (concrete and paint).
- Consider whether the project will cause stormwater runoff that may impact neighboring properties.

Projects that meet one or more of the above criteria must meet the following requirements:

- Provide details for a drainage system in the application materials.
  
- Projects that have availability to connect to the City stormwater system and have less than 5,000 SF of pollutant generating impervious surface shall provide plans showing the collection of stormwater and discharge to the City storm system.
  
- Contain and convey runoff volumes from the 10-year, 24-hour storm event in the pipe and control runoff volumes from a 25-year, 24-hour design storm event to paved areas or within the street section for roadway design i.e. no stormwater can leave road and cannot flood adjacent right of way or property.

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- Use the City custom rainfall precipitation depths that use the 24-hour Soil Conservation Service (SCS) Type 1A storm distribution in Table 1.

**Table 1 Rainfall Distribution SCS Type 1A**

Storm event return period	24-hr depth (inches)	1-hour Depth (inches)
6 months	0.73	0.34
2 years	1.10	0.52
5 years	1.50	0.70
10 years	1.80	0.85
25 years	2.04	0.96
50 years	2.40	1.13
100 years	2.60	1.22

- Oil control is required under the following conditions per SWMMEW:
  - High density intersections with expected ADT of > 25,000 vehicles on main roadway and > 15,000 vehicles on any intersection roadway (include but are not limited to commercial or industrial nonemployee parking areas with more than 100 trip ends per 1,000 square feet of building area or any parking area receiving more than 300 total trip ends per day).
  - Areas of commercial and industrial sites subject to use, storage, or maintenance of a fleet of greater than or equal to 25 diesel vehicles that are greater than 10 tons gross weight
  - Fueling stations and facilities
  - Sites subject to petroleum transfer volumes of greater than 1,500 gallons per year, excluding routinely delivered heating oil
  - Proximity to drinking water wells when using Underground Injection Control (UIC)
  - If underground injection control best management practices are used
  - At the discretion of the Public Works Director
- Catch basins shall be located to meet spacing requirements based on a hydraulic analysis of the inlet capacity as provided in a drainage report prepared in accordance with City standards or per the following spacing and grate requirements for roads:
  - Local Roads and Collector Arterials (each curb line):  
Maximum Spacing = 300 feet with minimum 17 x 20 inches vaned grates
  - Arterial roads, Commercial roads and / or Industrial roads (each curb line):  
Maximum Spacing = 300 feet with minimum 17 x 20 inches vaned grates
 Roads, access drives, and parking lots at steeper grades or other site conditions may require inlet spacing less than the typical maximum specified as determined by the City Engineer.
- Stormwater Basins in North Wenatchee may require additional flow control for the City to comply with discharge permits granted by the PUD No. 1 of Chelan County. Please refer to the Basin Map Exhibit 1.

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- Flow control for developments that do not connect to the city Storm system are to provide for the 25-year, 24-hour city rainfall event. And provide downstream analysis of the 100-year 24-hour city rainfall event.
- Projects that have availability to connect to the City stormwater system and have 5,000 SF or more of pollutant generating impervious surface shall provide an analysis summarized in a drainage report prepared by a professional civil engineer and use the SWMMEW Washington Department of Ecology dated August 2019 or the latest edition thereof including any amendments by the City.
- Projects that include stormwater facilities on-site including any of the following shall provide a drainage report prepared by a professional engineer and use the SWMMEW published by the Washington Department of Ecology dated August 2019 or the latest edition thereof including any amendments by the City:
  - Retention
  - Detention
  - Water quality treatment
- Drainage reports must include at a minimum (Note: additional information may be required depending on the project):
  - A. Common address, parcel number and legal description
  - B. A map and/or drawing or sketch of the stormwater management facilities, including the location of nonstructural site design features and the placement of existing and proposed structural stormwater controls, including design water surface elevations, storage volumes available from zero to maximum head, location of inlets and outlets, location of bypass and discharge systems, and all orifice/restrictor sizes;
  - C. A narrative describing how the selected structural stormwater controls will be appropriate and effective; cross-section and profile drawings and design details for each of the structural stormwater controls in the system as well as the BMP identification number from the SWMMEW (Refer to Chapters 5 and 6 of the SWMMEW);
  - D. A hydrologic and hydraulic analysis of the stormwater management system demonstrating system performance for all hydraulic, treatment and disposal facilities for applicable design storms, including supporting calculations to show that the facility is designed according to the applicable design criteria (including stage-storage or outlet rating curves, and inflow and outflow hydrographs)

Capture rates of inlet grates shall be rated as follows:

  - Herringbone, rectangular patterns – 50 percent of manufacturer’s recommendations
  - Vaned Patterns – 80 percent of manufacturer’s recommendations

- E. Documentation and supporting calculations to show that the permanent stormwater control plan adequately meets the performance criteria in this policy, as applicable
  - F. A narrative describing how the permanent stormwater control plan applies all known, available and reasonable source control BMPs and corresponds with any applicable watershed protection plans or total maximum daily load (TMDL) requirements.
  - G. Operation and Maintenance Agreement (O & M) to be submitted for approval and then recorded.
- Projects choosing to retain stormwater onsite using a surface infiltration BMP shall conform to the applicable provisions of SWMMEW section 5.4.
  - Projects choosing to discharge to drywells and other constructed subsurface infiltration facilities for the purpose of stormwater runoff flow control must comply with the Underground Injection Control (UIC) Rule, Chapter 173-218 WAC, and SWMMEW 5.6, pages 398-408.
    - UIC treatment requirements can be determined in Tables 5.21, then 5.22, then 5.23: Treatment Requirements for Solids, Oil, and Metals.
    - Per the SWMMEW, Table 5.23, owners may use appropriate source control BMPs for low pollutant loading site, when treatment capacity is classified as “Low” or “None” in lieu of structure pretreatment BMPs preceding a UIC well. See table for applicability and Chapter 8 for source control BMPs. When using a source control BMP, an operations & maintenance agreement identifying maintenance procedures is required.
    - UIC wells may not receive stormwater from the activities or conditions listed in SWMMEW 5.6.12 (Page 408).
    - To determine infiltration rates, the presumptive numbers from the SWMMEW can be used or percolation testing can be done by a Competent person per the SWMMEW, such as a Professional Civil or Geotechnical Engineer.
      - An operations & maintenance agreement will be required for all UICs.
    - The City allows Low Impact Development (LID) techniques and measures to minimize disturbance of native soils and vegetation and reducing areas of impervious surfaces created by projects.
  - Refer to WCC 9.30 to determine if a Land Surface Modification Permit is needed. Implement construction-phase stormwater best management practices (For ideas that might work for your site, refer to SWMMEW Construction Stormwater Pollution Prevention - Chapter 7).

## II. Stormwater Management for Projects 1 Acre and greater or Part of a Common Plan of Development (WCC 9.20)

Projects that disturb greater than 1 acre or are part of a common plan of development, as defined by the Department of Ecology, must comply with the SWMMEW and WCC 9.20 and submit a full Stormwater Site Plan (SSP) report prepared by a licensed professional civil engineer. A complete SSP includes maps, charts, graphs, tables, photographs, narrative descriptions, explanations, citations to supporting references, a record of all major permit decisions, and other information as may be necessary for a review of the project's proposed storm drainage systems. Minimum SSP contents include:

- A. Common address, parcel number and legal description
- B. Existing conditions analysis
- C. Geotechnical site characterization report
- D. Permanent stormwater control plan (drainage report & plans)
  1. Wherever storage is provided as detention to limit downstream runoff, a hydrograph analysis shall be provided to show the stage storage relationship to verify that storage is adequate to detain flows.
  2. All facilities will identify emergency overflow routing in the stormwater site plan for on-site retention/detention facilities to avoid damage and impacts to adjacent property.
  3. Use of drywells and other man-made subsurface infiltration facilities for the purpose of stormwater run-off flow control must follow the Underground Injection Control (UIC) Rule, Chapter 173-218 WAC, and SWMMEW Section 5.6.
- E. Post-development downstream analysis
  1. Allowable discharge from a project may be restricted based on the analysis.
- F. Construction stormwater pollution prevention plan (SWPPP)
  1. The construction stormwater pollution prevention plan should cover all phases of construction.
  2. Please note that projects smaller than one acre which are part of a common plan of development are required to have a SWPPP (i.e. single-family home lot located in a subdivision which is one acre or larger). Projects smaller than one acre and part of a common plan of development may use the shortened SWPPP. The shortened SWPPP must cover all 13 Elements of Construction Stormwater Pollution Prevention and the selected preferred BMPs to accomplish each of the 13 elements. A shortened SWPPP template option is located on the City website.
- G. Operation and Maintenance agreement and plan

Additional Information:

- Contain and convey runoff volumes from the 10-year, 24-hour storm event in the pipe and control runoff volumes from a 25-year, 24-hour design storm event to paved areas or within the street section for roadway design i.e. no stormwater can leave road and cannot flood adjacent right of way or property.
- Onsite stormwater flow control facilities for developments that do not connect to the City storm drainage systems shall to maintain existing release rates for the 25-year, 24-hour storm event. And provide downstream analysis of the 100-year 24-hour city rainfall event.
- Projects within flow restricted basins and when there is no available connection to the City storm drainage systems shall to maintain existing release rates for the 25-year, 24-hour storm event. And provide downstream analysis of the 100-year 24-hour city rainfall event.
  - Stormwater Basins in North Wenatchee may require additional flow control for the City to comply with discharge permits granted by the PUD No. 1 of Chelan County. (refer to the Basin Map Exhibit 1).
- Use the City custom rainfall precipitation depths that use the 24-hour Soil Conservation Service (SCS) Type 1A storm distribution in Table 1.

**Table 1 Rainfall Distribution SCS Type 1A**

Storm event return period	24-hr depth (inches)	1-hour Depth (inches)
6 months	0.73	0.34
2 years	1.10	0.52
5 years	1.50	0.70
10 years	1.80	0.85
25 years	2.04	0.96
50 years	2.40	1.13
100 years	2.60	1.22

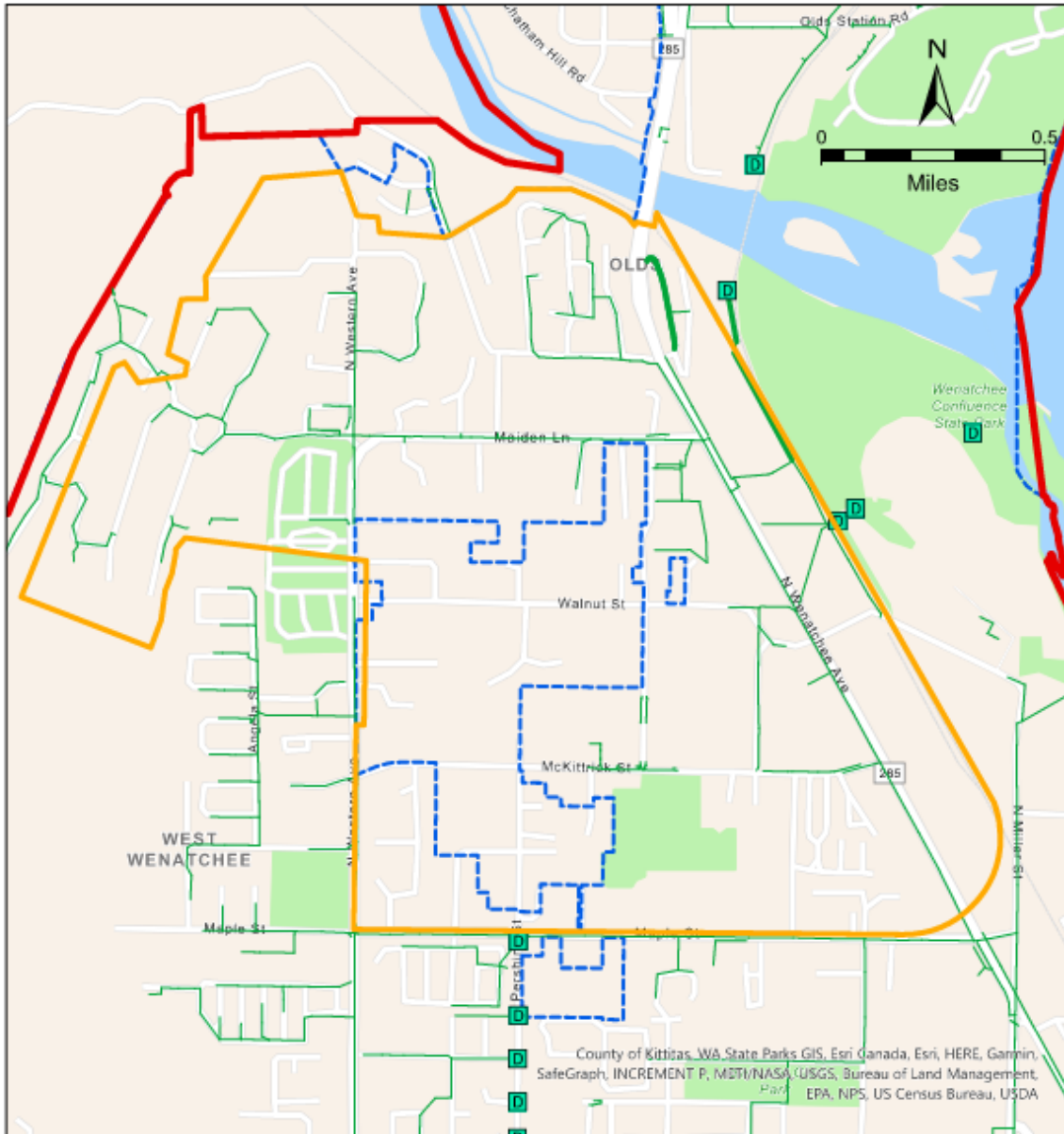
- Oil control is required under the following conditions per SWMMEW:
  - High density intersections with expected ADT of > 25,000 vehicles on main roadway and > 15,000 vehicles on any intersection roadway. (include but are not limited to commercial or industrial nonemployee parking areas with more than 100 trip ends per 1,000 square feet of building area or any parking area receiving more than 300 total trip ends per day).
  - Areas of commercial and industrial sites subject to use, storage, or maintenance of a fleet of greater than or equal to 25 diesel vehicles that are greater than 10 tons gross weight
  - Fueling stations and facilities

- Sites subject to petroleum transfer volumes of greater than 1,500 gallons per year, excluding routinely delivered heating oil
  - Proximity to drinking water wells when using Underground Injection Control (UIC)
  - If underground injection control best management practices are used
  - At the discretion of the Public Works Director
- Catch basins shall be located to meet spacing requirements based on a hydraulic analysis of the inlet capacity as provided in a drainage report prepared in accordance with City standards or per the following spacing and grate requirements for roads:
    - Local Roads and Collector Arterials (each curb line):  
Maximum Spacing = 300 feet with minimum 17 x 20 inches vaned grates
    - Arterial roads, Commercial roads and / or Industrial roads (each curb line):  
Maximum Spacing = 300 feet with minimum 17 x 20 inches vaned grates  
Roads, access drives, and parking lots at steeper grades or other site conditions may require inlet spacing less than the typical maximum specified as determined by the City Engineer
- Projects choosing to retain stormwater onsite using a surface infiltration BMPs shall follow SWMMEW section 5.4.
  - Projects choosing to discharge to drywells and other man-made subsurface infiltration facilities for the purpose of stormwater runoff flow control must comply with the Underground Injection Control (UIC) Rule, Chapter 173-218 WAC, and SWMMEW 5.6, pages 398-408.
    - UIC treatment requirements can be determined in Tables 5.21, then 5.22, then 5.23: Treatment Requirements for Solids, Oil, and Metals.
    - Per the SWMMEW, Table 5.23, owners may use appropriate source control BMPs for low pollutant loading site, when treatment capacity is classified as “Low” or “None” in lieu of structure pretreatment BMPs preceding a UIC well. See table for applicability and Chapter 8 for source control BMPs. When using a source control BMP, an operations & maintenance agreement identifying maintenance procedures is required.
    - UIC wells may not receive stormwater from the activities or conditions listed in SWMMEW 5.6.12 (Page 408).
    - To determine infiltration rates, the presumptive numbers from the SWMMEW can be used or percolation testing can be done by a Geotechnical Engineer.
    - An operations & maintenance agreement will be required for all UICs. This agreement has also been referred to as a Declaration of Stormwater Covenants.



- The City allows Low Impact Development techniques and measures to minimize disturbance of native soils and vegetation and reducing areas of impervious surfaces created by projects.
- Refer to WCC 9.30 to determine if a Land Surface Modification Permit is needed. Implement construction-phase stormwater best management practices (per applicable portions of SWMMEW Chapter 7).

# Chelan PUD North Wenatchee Avenue Discharge Agreement Boundary



County of Kittitas, WA State Parks GIS, Esri Canada, Esri, HERE, Garmin, SafeGraph, INCREMENT P, MSTN/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA

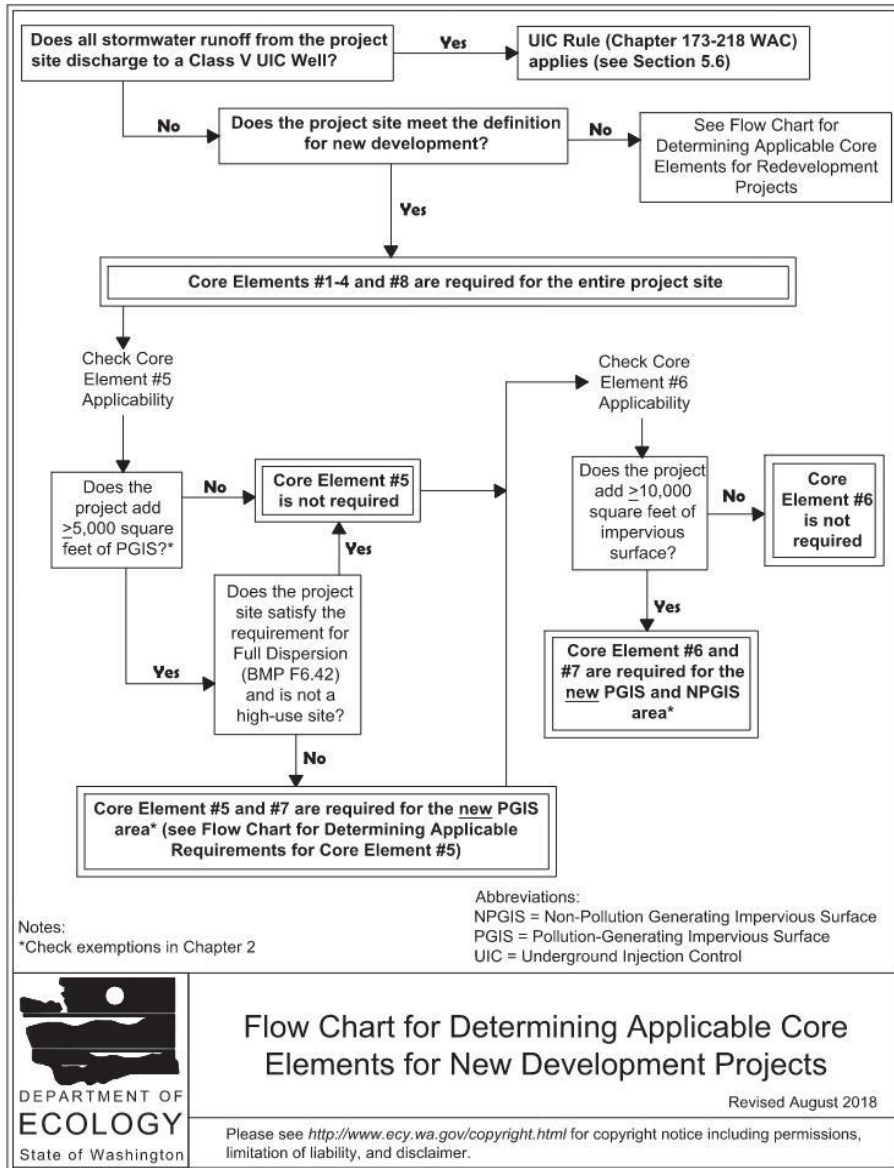


## Legend

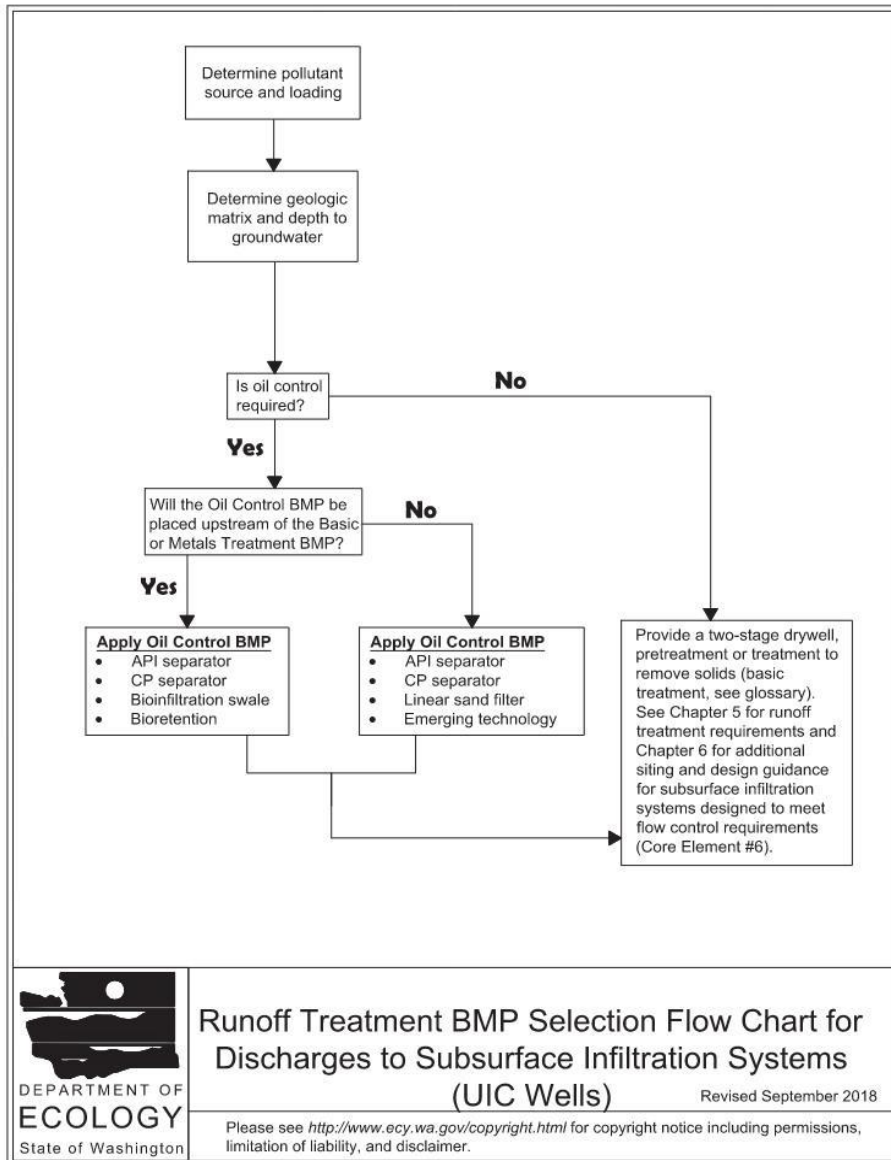
- ▬ Chelan PUD North  
Wenatchee Discharge  
Agreement
- D Outfall
- 2017 UGA
- Storm Water Main
- City Limits
- Parcels

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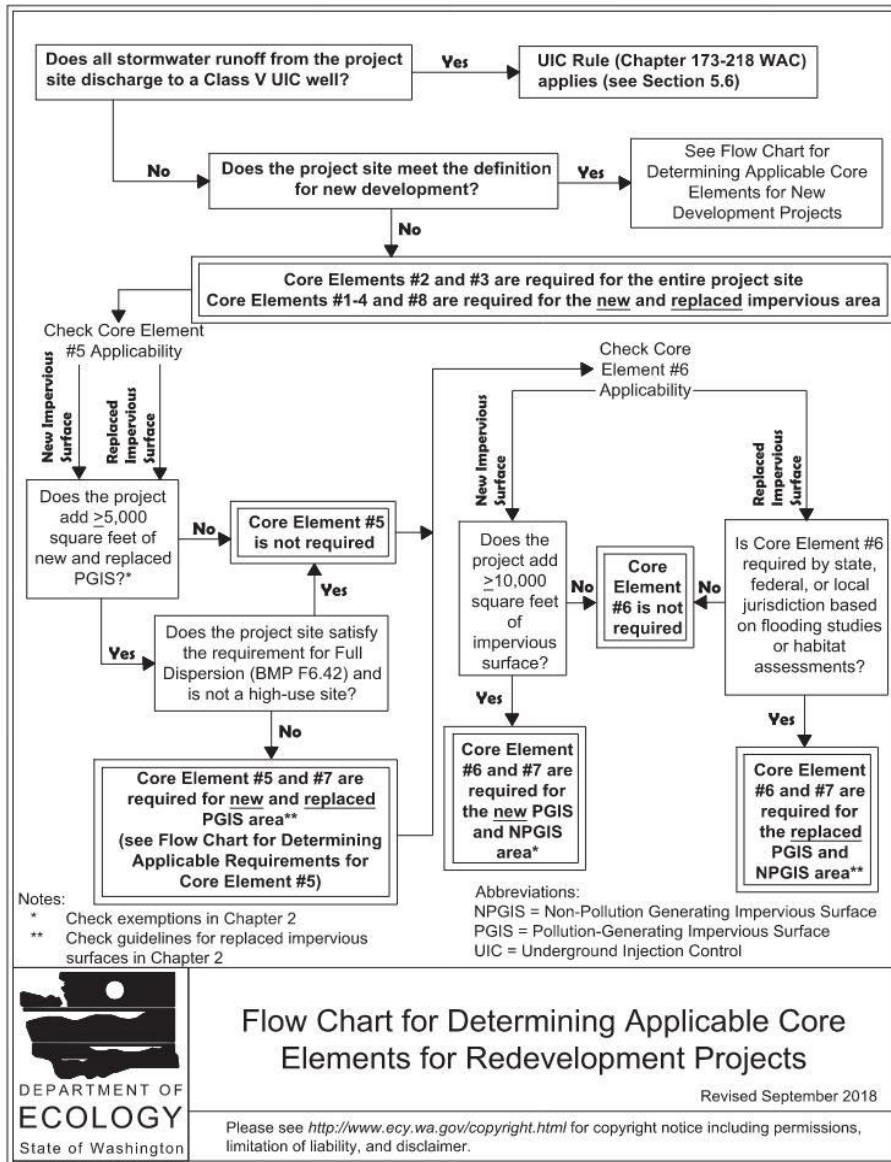
**Figure 2.1: Flow Chart for Determining Applicable Core Elements for New Development Projects**



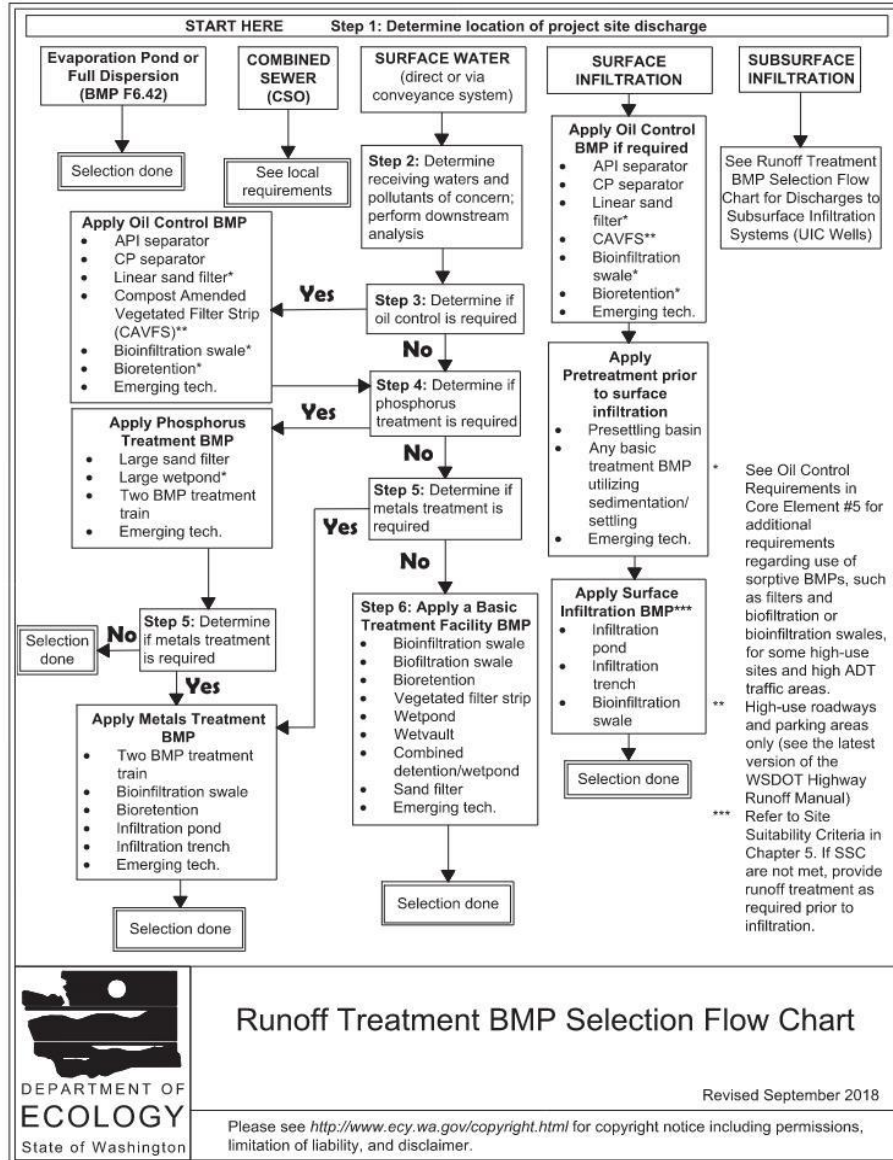
**Figure 5.2: Runoff Treatment BMP Selection Flow Chart for Discharges to Subsurface Infiltration Systems**



**Figure 2.2: Flow Chart for Determining Applicable Core Elements for Redevelopment Projects**



**Figure 5.1: Runoff Treatment BMP Selection Flow Chart**



**Table 5.21: Vadose Zone Treatment Capacity**

Treatment Capacity Classification and Required Minimum Thickness	Description of Vadose Zone Layer <sup>c,d</sup>
<p style="text-align: center;"><b>HIGH</b> A minimum thickness of 5 feet</p>	<p>Meets all of the following characteristics:</p> <ul style="list-style-type: none"> <li>• Materials with median grain size &lt; 0.125 mm</li> <li>• Having a sand to silt/clay ratio of &lt; 1:1 and sand plus gravel &lt; 50%</li> <li>• Field-tested saturated hydraulic conductivity below 2.4 in/hr at the bottom elevation of the proposed BMP</li> <li>• Materials with CEC of ≥ 5 milliequivalents CEC/100 g dry soils, and a minimum of 1% organic content, ≥ 18-inch minimum thickness</li> <li>• Typical geotechnical descriptive words for appropriate soils:               <ul style="list-style-type: none"> <li>○ Lean, fat, or elastic clay</li> <li>○ Sandy or silty clay</li> <li>○ Silt</li> <li>○ Clayey or sandy silt</li> <li>○ Sandy loam or loamy sand</li> <li>○ Silt/clay with interbedded sand</li> <li>○ Well-compacted, poorly sorted materials</li> </ul> </li> </ul> <p><i>This category generally includes till, hardpan, caliche, and loess.</i></p>
<p style="text-align: center;"><b>MEDIUM</b> A minimum thickness of 10 feet</p>	<p>Meets all of the following characteristics:</p> <ul style="list-style-type: none"> <li>• Materials with average grain size 0.125 to 4 mm</li> <li>• Having a sand to silt/clay ratio from 1:1 and 9:1 and percent sand &gt; percent gravel</li> <li>• Field-tested saturated hydraulic conductivity between 2.4 in/hr and 6 in/hr at the bottom elevation of the proposed BMP</li> <li>• Materials between 2 and 5 milliequivalents CEC/100 g dry soils, and a minimum of 0.5% to 1% organic content</li> <li>• Typical geotechnical descriptive words for appropriate soils:               <ul style="list-style-type: none"> <li>○ Fine, medium, or coarse sand</li> <li>○ Sand with interbedded clay and/or silt</li> <li>○ Poorly compacted, poorly sorted materials</li> </ul> </li> </ul> <p><i>This category includes some alluvium and outwash deposits.</i></p>

Excerpt Pages 422 - 424

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Treatment Capacity Classification and Required Minimum Thickness	Description of Vadose Zone Layer <sup>c,d</sup>
<p style="text-align: center;"><b>LOW</b> A minimum thickness of 25 feet</p>	<p>Meets all of the following characteristics:</p> <ul style="list-style-type: none"> <li>• Materials with median grain size &gt; 4 mm to 64 mm</li> <li>• Having a sand to silt/clay ratio &gt; 9:1 and percent sand less than percent gravel</li> <li>• Field-tested saturated hydraulic conductivity between 6 in/hr and 12 in/hr at the bottom elevation of the proposed BMP</li> <li>• Materials with CEC of ≤ 2 milliequivalents CEC/100 g dry soils and a minimum of &lt; 0.5% organic content</li> <li>• Typical geotechnical descriptive words for appropriate soils: <ul style="list-style-type: none"> <li>○ Poorly sorted, silty, or muddy gravel</li> <li>○ Sandy gravel, gravelly sand, or sand and gravel</li> </ul> </li> </ul> <p><i>This category includes some alluvium and outwash deposits.</i></p>
<p style="text-align: center;"><b>NONE</b> Minimum thickness not applicable</p>	<p>Meets any of the following characteristics:</p> <ul style="list-style-type: none"> <li>• Vadose zone conditions are unknown; or</li> <li>• Vadose zone conditions are known and are characterized in any of the following ways: <ul style="list-style-type: none"> <li>○ Sedimentary materials with median grain size &gt; 64 mm</li> <li>○ Total fines (sand and mud) &lt; 5%</li> <li>○ Field-tested saturated hydraulic conductivity &gt; 12 in/hr at the bottom elevation of the proposed BMP</li> <li>○ Materials with no measurable CEC or organic content</li> <li>○ Typical geotechnical descriptive words for appropriate soils: <ul style="list-style-type: none"> <li>▪ Well-sorted or clean gravel</li> <li>▪ Boulders and/or cobbles</li> <li>▪ Fractured rock</li> </ul> </li> </ul> </li> </ul> <p><i>This category generally includes vadose zones with conditions that are unknown or vadose zones that are known to be composed of fractured basalt, other fractured bedrock, and cavernous limestone.</i></p>
<p>a. This table is applicable to designers intending to use the presumptive approach to identify the necessary level of stormwater treatment prior to discharge to a UIC well. Designers for industrial sites with no outdoor processing, storage, or handling of raw or finished products may also use these tables.</p> <p>b. This table is not applicable to stormwater runoff from industrial activities, outdoor processing, storage, or handling of raw or finished products; or areas where stormwater runoff comes into contact with leachate or other prohibited discharges.</p> <p>c. If vadose zone conditions are unknown or if the vadose zone thicknesses are less than those listed, use "none" for the treatment capacity.</p> <p>d. Separation between the bottom of the UIC well and the top of the ground water table is required, see WAC 173-218-090(1)(b).</p>	

**Excerpt Pages 422 - 424**

Table from Stormwater Management Manual for Eastern Washington published February 2019  
Chapter 5 – Excerpt of pages 422 – 424, reformatted onto two pages by City of Wenatchee Public Works

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**Table 5.22: Pollutant Loading Classifications for Solids, Metals, and Oil in Stormwater Runoff Directed to UIC Wells**

Classification	Areas Contributing to Runoff to the UIC Well
Insignificant	<ul style="list-style-type: none"> <li>• Impervious surfaces not subject to motorized vehicle traffic or application of sand or deicing chemicals</li> <li>• Unmaintained open space</li> </ul>
Low	<ul style="list-style-type: none"> <li>• Parking areas with &lt; 40 total trip ends per 1,000 square feet (sf) of gross building area and &lt; 100 total trip ends (if you exceed either threshold, move to the Medium Classification)</li> <li>• Other land uses with similar traffic/use characteristics (e.g., most residential parking and employee-only parking areas for small office parks or other commercial buildings)</li> <li>• <b>Inside Urban Growth Management Areas</b> <ul style="list-style-type: none"> <li>○ Fully controlled and partially controlled limited access highways with ADT &lt; 15,000</li> <li>○ Other roads with ADT &lt; 7,500 vehicles</li> </ul> </li> <li>• <b>Outside Urban Growth Management Areas</b> <ul style="list-style-type: none"> <li>○ All roads with ADT &lt; 15,000 vehicles</li> </ul> </li> </ul>
Medium	<ul style="list-style-type: none"> <li>• Parking areas with between 40 and 100 trip ends per 1,000 sf of gross building area and between 100 and 300 total trip ends (if you exceed either threshold, move to the High Classification)</li> <li>• Primary access points for high-density residential apartments</li> <li>• Intersections controlled by traffic signals that do not meet the definition of a high-density intersection (see the Glossary)</li> <li>• Transit center bus stops</li> <li>• <b>Inside Urban Growth Management Areas</b> <ul style="list-style-type: none"> <li>○ Fully controlled and partially controlled limited access highways with ADT between 15,000 and 30,000 vehicles</li> <li>○ Other roads with ADT between 7,500 and 30,000 vehicles</li> </ul> </li> <li>• <b>Outside Urban Growth Management Areas</b> <ul style="list-style-type: none"> <li>○ All roads with ADT between 15,000 and 30,000 vehicles</li> </ul> </li> </ul>
High	<ul style="list-style-type: none"> <li>• High-use sites               <ul style="list-style-type: none"> <li>○ Includes roads with ADT &gt; 30,000 vehicles</li> </ul> </li> <li>• On-street parking areas of municipal streets in commercial and industrial areas</li> <li>• Highway rest areas</li> <li>• Other land uses with similar traffic/use characteristics (e.g., commercial buildings with a frequent turnover of visitors, such as grocery stores, shopping malls, restaurants, drive-through services, etc.)</li> </ul>
<p>Notes:</p> <ol style="list-style-type: none"> <li>a. This table is applicable to designers intending to use the presumptive approach to identify the necessary level of treatment upstream of a UIC well. Designers for industrial sites with no outdoor processing, storage, or handling of raw or finished products may also use these tables.</li> <li>b. This table is not applicable to stormwater runoff from industrial activities, outdoor processing, storage, or handling of raw or finished products; or areas where stormwater runoff comes into contact with leachate or other prohibited discharges.</li> </ol>	

Excerpt of Pages 425-426

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**Table 5.23: Treatment Required for Solids, Oil, and Metals**

Pollutant Loading	Treatment Capacity			
	High	Medium	Low	None
Insignificant	Two-stage drywell <sup>a</sup>	Two-stage drywell <sup>a</sup>	Two-stage drywell <sup>a</sup>	Two-stage drywell <sup>a</sup>
Low	Two-stage drywell <sup>a</sup>	Pretreatment <sup>b</sup>	Pretreatment <sup>b</sup>	Remove solids <sup>c</sup>
Medium	Pretreatment <sup>b</sup>	Remove solids <sup>c</sup>	Remove solids <sup>c</sup>	Remove solids <sup>c</sup>
High	Remove oil <sup>d</sup>	Remove oil <sup>d</sup>	Remove oil and solids <sup>c,d</sup>	Remove oil and solids <sup>c,d</sup>

Notes:

- A two-stage drywell has a catch basin or other presettling device that traps small quantities of oils and solids. Regularly inspect and maintain the catch basin or other presettling device.
- Pretreatment removes solids, but at a level less than basic treatment. Ecology’s definition for pretreatment is 50% removal. See the definition for pretreatment in the [Glossary](#).
- Treatment to remove solids means basic treatment. See the definition of basic treatment in the [Glossary](#). Removal of solids removes a large portion of the total metals in most stormwater runoff. Any special treatment requirements in this chapter still apply. Owners may use appropriate source control BMPs for low-pollutant-loading sites, in lieu of structural treatment BMPs.
- Treatment to remove oil is to be accomplished by applying one of the oil control BMPs identified in this manual. See BMP [BMP T5.100: API Separator Bay](#) and [BMP T5.110: Coalescing Plate \(CP\) Separator Bay](#).
  - At high-density intersections and at commercial or industrial sites subject to an expected average daily traffic (ADT) count of 100 vehicles/1,000 sf gross building area, sufficient quantities of oil may be generated to justify operation of a separator BMP.
  - At other high-use sites, project proponents may select a basic treatment BMP that also provides adsorptive capacity, such as a biofiltration or bioinfiltration swale, a filter, or other adsorptive technology, in lieu of a separator BMP. A catch basin with a turned down elbow is not adequate for oil control in this case.
  - For roads in eastern Washington with ADT >30K, basic treatment with sorptive characteristics (i.e., swale or sand filter) is required, and suffices for the oil treatment requirement.
  - The requirement to apply a basic treatment BMP with adsorptive characteristics also applies to commercial parking and to streets with ADT > 7,500.

Excerpt Pages 426 - 427

***Apple Capital of the World***

## Glossary:

**Best Management Practice(s), BMPs**, the schedules of activities, prohibitions of practices, maintenance procedures, and structural and/or managerial practices approved by Ecology that, when used singly or in combination, prevent or reduce the release of pollutants and other adverse impacts on waters of Washington State.

**Common Plan of Development** – A site where multiple separate and distinct construction activities may be taking place at different times on different schedules and/or by different contractors but still under a single plan. Examples include (1) phased projects and projects with multiple filings or lots, even if the separate phased or filings/lots will be constructed under separate contract or by separate owners (e.g. a development where lots are sold to separate builders); (2) a development plan that may be phased over multiple years but is still under a consistent plan for long-term development, and (3) projects in a contiguous area that may be unrelated but still under the same contract, such as construction of a build extension and a new parking lot at the same facility. If the project is part of a common plan of development or sale, the disturbed area of the entire plan shall be used in determining permit requirements.

**Drainage Report** – This report is a required element of a stormwater site plan for projects that meet the applicability criteria in WCC 9.20.030. A drainage report may also be required for projects that do not trigger WCC 9.20.

- **High ADT-roadways and parking lots**- average annual daily traffic exceeds 30,000 vehicles per day and for all high-use sites include but are not limited to, parking areas with more than 100 trip ends per 1,000ft<sup>2</sup> of floor area and any parking area receiving more than 300 total trip ends per day.

**Impervious surfaces – roads, driveways, sidewalks, swimming pools, parking lots, for example** – do not allow water to naturally infiltrate into the ground and are also often covered in residues from vehicle traffic and other human activities. Rainwater and melt-off instead wash over these surfaces, taking with them the contaminants. The increased runoff can clog drain systems, erode natural watercourses, flush pollutants into nearby rivers and lakes, and even cause flooding. Per WCC 9.16: “Impervious groundcover” shall mean those hard surfaced areas either which prevent or retard the entry of water into the soil in the manner that such water entered the soil under natural conditions preexistent to development, or which cause water to run off the surface in greater quantities or at an increased rate of flow than that present under natural conditions preexistent to development, including without limitation such surfaces as rooftops, asphalt or concrete sidewalks, paving, driveways and parking lots, walkways, patio areas, storage areas, and gravel, oiled macadam or other surfaces which similarly affect the natural infiltration or runoff patterns existing prior to development.

**Level of Service** – “Do not harm the neighbor” **All** facilities should be planned and designed to provide a minimum level of service for control, conveyance, and/or storage of runoff resulting from 10-year recurring antecedent conditions.

**Projects** – Any new development or re-development projects.

**SCS** – Soil conservation Service

**Stormwater Site Plan** - A compilation of reports, modeling and engineered plans that are required for projects under WCC 9.20. At a minimum a stormwater site plan must include: site information, existing conditions analysis, geotechnical characterization, drainage report, engineered plans, downstream analysis, construction stormwater pollution prevention plan and a maintenance plan and agreement.

**SWPPP**- Stormwater Pollution Prevention Plans (SWPPPs) shall be required for, at a minimum, regulated construction sites that disturb one acre or more or are less than one acre and are part of a common plan of development or sale.