CITY OF RENTON I PERMIT SERVICES

RESIDENTIAL DRAINAGE SUBMITTAL PROCESS AND REQUIREMENTS

SPECIFIC CODE SECTION(S) RELATED TO THIS DOCUMENT

RMC 4-6-030 Drainage and Water Quality (Surface Water) Standards

RMC 4-8 Permits – General and Appeals

PURPOSE

To ensure compliance with the City's drainage requirements associated with residential development or redevelopment projects in accordance with City of Renton's adopted standards (RMC 4-6-030), consistent with the City's goal to protect public health, safety, welfare and aesthetics, and providing adequate public services/ infrastructure.

ELECTRONIC FILE STANDARDS

All documents MUST be submitted electronically. Specific file naming conventions for submitted plans are required to facilitate the electronic plan review process. Failure to adhere to the sample file naming format listed in the Electronic File Standards may result in a request for resubmittal and/or delay the plan review process, deeming the application incomplete.

COMPLETE APPLICATION REQUIRED

In order to accept your Building Permit application, each of the items included in the Residential Drainage Application must be submitted concurrently with the Combination or Building Permit Application.

DRAINAGE REVIEW OR DRAINAGE EVALUATION REQUIRED?

All Residential development in the City of Renton require either Drainage Evaluation or Drainage Review. There are three (3) types of Drainage Reviews:

1. Simplified Drainage Review per Appendix C.1
2. Targeted Drainage Review per Appendix C.1.2
3. Directed Drainage Review per Section 1.1.2.3.

Drainage Review is triggered for any residential development in the City of Renton that results in:

- 2,000 square feet or more of new plus replaced impervious surface; OR
- 7,000 square feet of land disturbing activity; OR
- Construction or modification of a pipe/ditch that is 12 inches or more in size/depth, or received storm water runoff or surface water from a drainage pipe/ditch that is 12 inches or more in size/depth; OR
- The project contains or is adjacent to a flood, erosion, aquifer protection area, or steep slope hazard area as defined in RMC 4-3-050, or is located within a Landslide hazard area in RMC 4-3-050.

Those developments that do not trigger Drainage Review will require a Drainage Evaluation to ensure storm water is managed properly onsite and to verify that there are no erosion or flooding potential.

RESIDENTIAL DRAINAGE SUBMITTAL PROCESS AND REQUIREMENTS

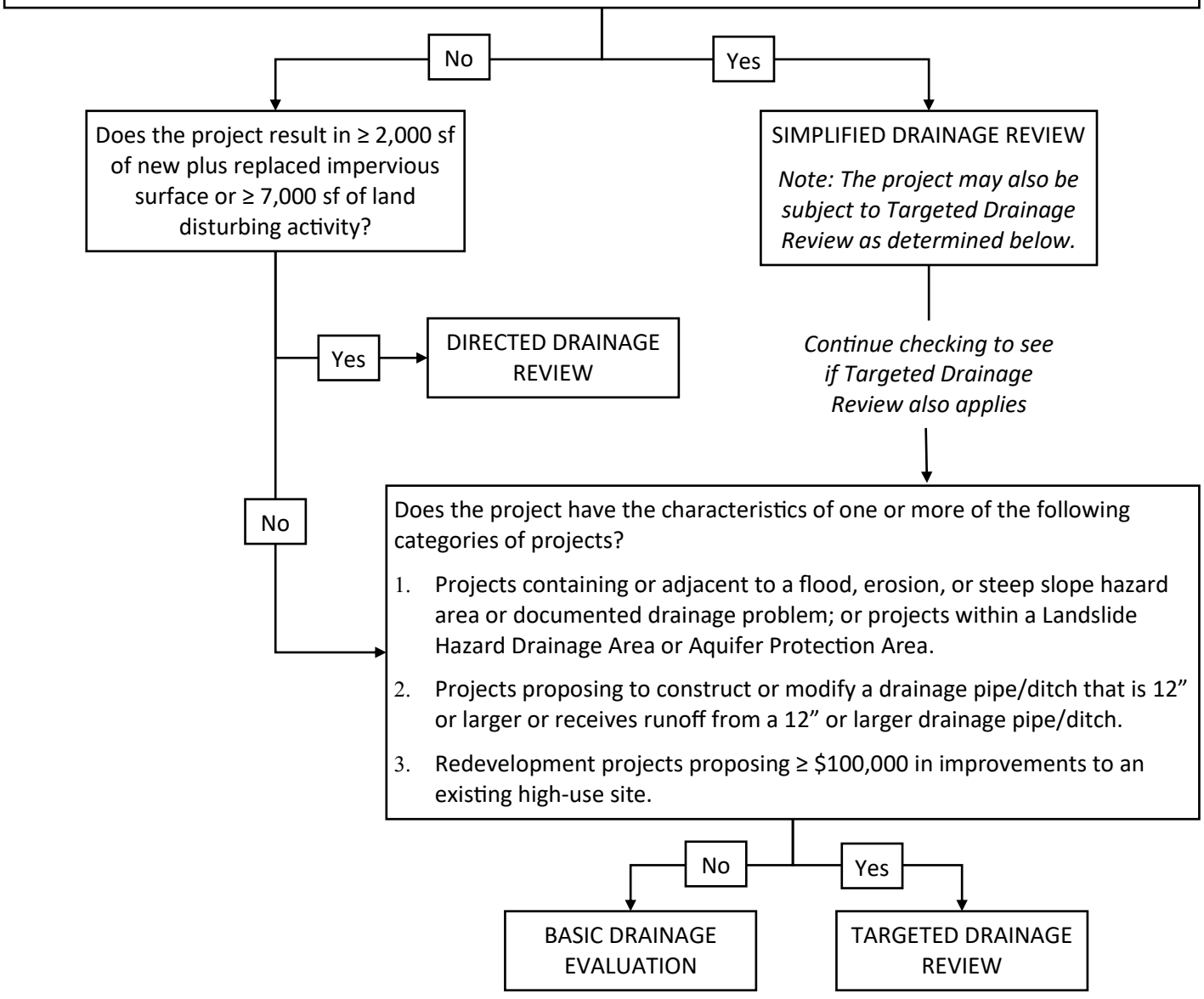
The flow chart below identifies the drainage review/evaluation thresholds. Check the drainage review/evaluation that is required for the project.

Is the project a single family residential project that results in:

- ≥ 2,000 sf of new plus replaced impervious surface or ≥ 7,000 sf of land disturbing activity, AND
- < 5,000 sf of new plus replaced pollution generating imperviuos surace, AND
- < 3/4 acre of pollution generating pervious surface

AND does the project meet one of the following criteria:

- The project results in < 5,000 sf of new plus replaced impervious surface, AND < 3/4 acres of new pervious surface.
- For projects on predominately till soils: the project results in < 7,947 sf of target impervious surfaces (as defined in 2022 Renton Surface Water Design Manual, RSWDM, Section 1.1.2.1) AND proposed pervious area is ≤ 14,.941 - 1.88 X (total target impervious surfaces)
- For projects on predominately outwash soils: The project results in < 6,872 sf of target impervious surfaces (as



SUBMITTAL REQUIREMENTS

☐ 1. **Engineering Improvement Determination Request and Results.** Residential Engineering Improvement Determination request online form is required to be submitted and a determination result obtained prior to submitting a Residential Drainage or Building Permit Applications with the exception of Interior Remodels, Pool/ Spa, Fence Installation, and Photo-Voltaic Installation. A determination is obtained by submitting a Residential Engineering Improvement Determination Request Online Form. A Determination will be sent back to the recipient within three (3) business days following receipt of submittal.

The Engineering Improvement Determination Results will help identify what Drainage Review required.

☐ 2. **Residential Drainage Application.**

☐ 3. **Drainage Review Checklist Items.** These items are specific to the type of Drainage Review required.

Refer to the Engineering Improvement Determination Results for type of Drainage Review required.

a. **Basic Drainage Evaluation.** No additional items need to be submitted.

-OR-

b. **Simplified Drainage Review Checklist Items** (See Page 4 for Checklist Items)

-OR-

c. Targeted Drainage Review

- If Simplified Drainage Review is required, then all items under Simplified Drainage Review Checklist Items (See Page 4 for Checklist Items) are required as well.
- Additional submittal requirements identified by RSWDM Appendix C Section 1.2 based on the identified site characteristic. Please contact Development Engineering at developmentengineering@rentonwa.gov if you need assistance with determining these requirements.

-OR-

d. **Directed Drainage Review Checklist Items** (See Page 7 for Checklist Items)

SIMPLIFIED DRAINAGE REVIEW—INTAKE CHECKLIST

Use the following checklist as a guide to prepare the permit submittal package as well as the submittal checklist provided as part of the Residential Engineering Improvement Determination. Marking an item as "Not Applicable" or "N/A", without acceptable justification, may result in the submittal being rejected at Intake. See Example Simplified Drainage Review. A civil engineer is not required to prepare these documents unless noted below.

☐ 1. **Site Plan** per Appendix C, Section C.4 of the 2022 (RSWDM). Must be plotted to scale, with all significant dimensions given. Site plans, should be drawn on 8½" x 11", with 1" clear border, minimum 9 pt font, and no hatching.

a. **Identification**

- Name, address, and phone number of Applicant.
- Parcel number
- Dimension of all property lines, easements, and building setback lines
- Street names and existing or proposed property addres
- Section, township, and range of proposoal
- North arrow, legend (if needed), and scale

b. **Building and Site Development Features**

- Footprint of all structures (existing and proposed)
- Parking, roads, and driveways (existing and proposed)
- Sport courts and any other paved or imprevious surfacts (existing and proposed)
- Pervious surfaces land cover (existing and proposed)
- Location of any retaining walls and rockeries (existing and proposed)
- Existing or proposed septic system, including all system components and both primary and reserve drainfields
- Utility structures (poles, fire hydrants, etc)
- Existing wells or wells to be abandoned

c. **Topography**

- Corner elevations of the site/lot
- Benchmark (a permanent mark indicating elevation and serving as a reference in the topgraphic survey
- Datum (assumed datum is acceptable in many cases (i.e., fire hydrant base = 100'); datum for projects in or near FEMA floodplain should be per the relevant Flood Insurance rate Mat (FIRM) (typically NGVD 1929, or NAVD 1988 on many recent updated maps; datum for project in or near unmapped floodplain shall use NAVD 1988)
- Show 5-foot contours for all slopes steeper than 15% and delineate the top and bottom of these slopes
- For sites/lots are 22,000 square feet and larger, show 2-foot or 5-foot contours as needed to design and demonstrate compliance with the minimum design requirements and specifications for proposed on-site BMPs and ESC and SWPPS measures

d. Drainage Features and Critical Areas: For a map detailing the critical areas on your site, visit the Self Help Area in the City's Permit Center or the City's GIS Mapping System (CORMaps). *Development within 200 feet of a critical area may require an engineered drainage plan.*

- Location of all existing and proposed ditches, swales, pipes, etc.
- Delineation of all streams, wetlands, lakes, closed depressions, or other water features (including any required buffer widths).
- Delineation of all flood hazard areas, erosion hazard areas, landscape hazard areas, and their buffers and building setback lines.
- Delineation of all drainage easements, tracts, and right-of-way.
- Delineation of all critical areas as shown on any recorded critical areas notice on title.

e. Information Specific to On-Site BMPs

- Location and dimensions of On-Site BMP devices such as dispersion trenches, infiltration trenches, drywells, ground surface depressions, bioretention, permeable pavements, rain water storage tanks, and perforated pipe connections for managing stormwater from all impervious surfaces.
- Delineation and dimensions of target impervious surface and new pervious surface.
- Delineation and dimensions of vegetated flow path segments if applicable.
- Delineation and native vegetated surface to be created and preserved.
- Setback lengths between on-site BMPs and any property line, structure, steep slope, stream, wetland, or septic system

☐ 2. **Drainage Site Plan and Maintenance Details:** per Section C.4.3 of 2022 RSWDM

a. Provide diagrams/figures (should be displayed on 8.5"x 11" format with 1 inch margins so they can be directly recorded as attachments to the required declaration of covenant), design specifications, and maintenance instructions for each on-site BMP proposed.

b. Provide maintenance instructions explaining for future property owners the purpose of each on-site BMP and how it must be maintained and operated.

☐ 3. **Small Site Construction Stormwater Pollution Preventation (CSWPP) Plan** (formally Erosion and Sediment Control (ESC) Plan): per Section C.4.2.2 of the 2022 RSWDM. Erosion and sediment control is required for all projects resulting in land disturbing activity.

a. All items identified under a Site Plan above.

b. Delineation of proposed clearing limits (i.e. area to be disturbed).

c. Type and location of ESC and SWPPS measures such as: construction entrance, mulching, nets, and blanket plastic covering, clearing limits/minimize clearing, silt fence, vegetated strip, triangler silt dike, storm drain inlet protection.

d. Notes indicating the location of any significant offsite drainage features within 200 feet of the discharge point(s) for the site/lot, including streams, lakes, roadside ditches, etc.

☐ 4. **Written Drainage Assessment:** per Section C.4.4 of the 2022 RSWDM

a. A narrative description of proposed project.

b. Any proposed changes to the project after preliminary approval.

c. A description of proposed on-site BMPs shown on the site plan and how they were selected.

d. Supporting documentation (e.g., soil tests, infiltration rates, geotechnical recommendations, etc.) where BMPs were not selected based upond determination of infeasibilty.

e. A description of proposed ESC and SWPPS Measures shown or noted on the plans and how they were selected.

f. A description of necessary special studies, soil reports, or any other information required by CED.

☐ 5. **Soils Report:** per Section C.1.3 of the 2022 RSWDM (additional requirements noted in RSWDM). This shall be prepared by or under the direction of a licensed onsite sewage system design or geotechnical professional (e.g., licensed engineer with geotechnical and/or hydrogeologic experience, licensed geologist, hydrogeologist, or engineering geologist.

a. Must include at least one soils log for each proposed infiltration location.

b. Must demonstrate the feasibility of full infiltration, permeable pavement, and bioretention BMPs where treating pollution generating surfaces. Not required if treating non-pollution generating surfaces only.

c. Infiltration testing required to demonstrate the feasibility of bioretention and permeable pavement BMPs for the site/lot (see additional requirements for infiltration testing in Section C.1.3 of 2022 RSWDM.

☐ 6. **Declaration of Covenant:** per Section C.5.2 of the 2022 RSWDM. Declaration of Covenant is for Maintenance and Inspection of On-Site BMPs. See Example Declaration of Covenant.

a. Fill out Declaration of Covenant.

b. Attach the Drainage Site Plan as Exhibit A. This was prepared under submittal item #2. (The Drainage Site Plan shall be drawn on 8½" x 11", with 1" clear border, minimum 9 pt font, and no hatching.)

c. Attach maintenance instructions on On-Site BMP(s). See City of Renton Surface Water Design Manual Reference 8-M for On-Site BMP Covenant and Maintenance Instructions in recordable format with 1" clear border, and minimum 9 pt font.

DIRECTED DRAINAGE REVIEW - INTAKE CHECKLIST

Use the following checklist as a guide to prepare the permit submittal package as well as the submittal checklist provided as part of the Residential Roadway/Drainage Improvement Determination. Marking an item as "Not Applicable" or "N/A", without acceptable justification, may result in the submittal being rejected at Intake. All plans required unless waived by City Staff. A civil engineer is required to prepare the documents required for a Directed Drainage Review.

☐ 1. **Civil Construction Plans:** per Section 2.3.1.2 of the 2022 RSWDM. Organize the plans such that they are separated into type of improvement and drawing order. Each improvement type should include all plans, profiles, notes, sections, details, schedules, diagrams, etc. for that facility. All plans shall be designed in accordance with the City of Renton "Construction Plan Drafting Standards" as required per RMC 4-8-120. The required order of drawings is as follows:

a. Cover Sheet;
b. Existing Conditions/Topography Plan;
c. Site Plan;
d. Temporary Erosion and Sediment Control Plan (TESC);
e. Grading Plan (may be combined with TESC or Storm Drainage Plan);
f. Conceptual Structural/Retaining Wall and/or Detention Vault Plans associated with Civil Improvements;
g. Road/Paving/Storm Drainage Plan and Profiles (Large projects may require separate Street Improvements and Storm Drainage Plans);
h. Wastewater and Water Utility Plan and Profiles (Large projects may require separate Wastewater and Water Plans);
i. City Standard Details (Organized by Private vs. Public);
j. Landscaping Plan and Details;
k. Tree Retention/Land Clearing (Tree Inventory) Plan;
l. Wetland or Stream Mitigation Plan
m. Miscellaneous Plans (Structural, Architectural, etc).

☐ 2. **Declaration of Covenant:** per Section C.5.2 of the 2022 RSWDM. Declaration of Covenant is for Maintenance and Inspection of On-Site BMPs. See Example Declaration of Covenant.

a. Fill out Declaration of Covenant.
b. Attach the Simplified Drainage Site Plan as Exhibit A. Site plans be drawn on 8½" x 11", with 1" clear border, minimum 9 pt font, and no hatching.
c. Attach maintenance instructions on On-Site BMP(s). See City of Renton Surface Water Design Manual Reference 8-M for On-Site BMP Covenant and Maintenance Instructions in recordable format with 1" clear border, and minimum 9 pt font.

☐ 3. **Technical Information Report per Section 2.3.1.1 of the 2022 RSWDM:** The Technical Information Report (TIR) shall be a complete report in accordance with the 2022 Renton Surface Water Design Manual. Each section of the report shall be clearly identified and all supporting documents clearly indexed within the report. The TIR shall include the following items as detailed in the Surface Water Design Manual:

a. **Section 1: Project Overview**

- Figure 1—TIR Worksheet

- Figure 2—Site Location
- Figure 3—Drainage Basins, Sub-basins, and Site Characteristics
  - ⇒ Show acreage and boundaries of sub-basins
  - ⇒ Identify all site characteristics
  - ⇒ Show existing discharge points to and from the site
  - ⇒ Show routes of existing discharge points to and from the site
  - ⇒ Show routes of existing, construction, and future flows at all discharge points and downstream hydraulic structures
  - ⇒ Topographic map as a base for the figure comparable to USGS or better. Show (and cite) the length of travel from the farthest upstream end of the proposed storm system in the development to any proposed flow control facility.
- Figure 4—Soils: Show the soils within the project site, the area draining to the site, and the drainage system downstream of the site for the distance of the downstream analysis.

b. **Section 2: Conditions and Requirements Summary**

c. **Section 3: Off-Site Analysis**

- Task 1: Study Area Definition and Maps
- Task 2: Resource Review
- Task 3: Field Inspection
- Task 4: Drainage System Description and Problem Descriptions
- Task 5: Mitigation of Existing of Potential Problems

d. **Section 4: Flow Control, Low Impact Development (LID), and Water Quality Facility Analysis and Design**

- Existing Site Hydrology (Part A) – Topographical map with listed site information
- Developed Site Hydrology (Part B) – Data/narrative for developed site conditions
- Performance Standards (Part C) – Summarize flow control and On-Site BMPs
- Flow Control System (Part D) – Illustrative sketch and documentation
- Water Quality System (Part E) – Illustrative sketch and documentation

e. **Section 5: Conveyance System Analysis and Design**

f. **Section 6: Special Reports and Studies (**Geotechnical Reports, Wetlands Reports, Floodplains Analysis, etc.)

g. **Section 7: Other Permits** (Special Use, WSDOT, DOE Permit with WAR #, etc.)

h. **Section 8: CSWPPP Analysis and Design**

- ESC Plan Analysis and Design (Part A)
- SWPPS Plan Design (Part B)

i. **Section 9: Bond Quantities, Facility Summaries, and Declaration of Covenant**

- City of Renton Bond Quantity Worksheet
- Flow Control and Water Quality Facility Summary Sheet and Sketch

KEY TERMS

Impervious surface

A non-vegetated surface area that either prevents or retards the entry of water into the soil mantle as under natural conditions before development; or that causes water to run off the surface in greater quantities or at an increased rate of flow compared to the flow present under natural conditions prior to development (e.g., roofs, driveways, etc.). Common impervious surfaces include, but are not limited to, roof, walkways, patios, driveways, parking lots, or storage areas, areas that are paved, graveled or made of packed or oiled earthen materials or other surfaces that similarly impede the natural infiltration of surface water or stormwater. For the purposes of applying the impervious surface thresholds, permeable pavement, vegetated roofs, and pervious surfaces with underdrains designed to collect stormwater runoff are considered impervious surface while an open uncovered flow control or water quality facility is not.

Land Disturbing Activity

Any activity that results in a change in the existing soil cover (both vegetative and non-vegetative) and/or the existing soil topography. Land disturbing activities include, but are not limited to demolition, construction, clearing, grading, filling, excavation, and compaction. Land disturbing activity does not include tilling conducted as part of agricultural practices, landscape maintenance, or gardening.

New impervious surface

The addition of a man-made, modified, or compacted surface like roofs, pavement, gravel, or dirt; or the addition of a more compacted surface, such as resurfacing by upgrading from dirt to gravel, asphalt, or concrete; upgrading from gravel to asphalt, or concrete; or upgrading from a bituminous surface treatment (“chip seal”) to asphalt or concrete. Permeable pavement and vegetated roofs are considered new impervious surface for purposes of determining whether the thresholds for application of minimum requirements are exceeded, as are lawns, landscaping, sports fields, golf courses, and other areas that have modified runoff characteristics resulting from the addition of underdrains designed to collect stormwater runoff. Open, uncovered retention/detention facilities shall not be considered impervious surfaces for purposes of determining whether the thresholds for application of minimum requirements are exceeded. Open, uncovered retention/detention facilities shall be considered impervious surfaces for purposes of runoff modeling.

New pollution generating impervious surface (PGIS)

New impervious surface that is pollution-generating impervious surface or any alteration of existing pollution-generating impervious surface that changes the type of pollutants or results in increased pollution loads and/or concentrations.

On-site BMP

Small scale drainage facility or feature that is part of a development site strategy to use processes such as infiltration, dispersion storage evaporation, transpiration, forest retention, and reduced impervious surface footprint to mimic pre-developed hydrology and minimize stormwater runoff.

Pervious surface

Any surface material that allows stormwater to infiltrate into the ground. Examples include lawn, landscape, pasture, and native vegetation areas. Note for purposes of threshold determination and runoff volume modeling for detention and treatment, vegetated roofs and permeable pavements are to be considered impervious surfaces along with lawns, landscaping, sports fields, golf courses and other areas that have modified runoff characteristics resulting from the addition of underdrains.

Pollution-generating impervious surface (PGIS)

An impervious surface considered to be a significant source of pollutants in stormwater runoff. Such surfaces include those that are subject to vehicular use, industrial activities, or storage of erodible or leachable materials, wastes, or chemicals and that receive direct rainfall or the run-on or blow-in of rainfall. A covered parking area would be considered PGIS if runoff from uphill could regularly run through it or if rainfall could regularly blow in and wet the pavement surface. Metal roofs are also considered PGIS unless they are coated with an inert, non-leachable material (see Reference Section 11-E); or roofs that are exposed to the venting of significant amounts of dusts, mists, or fumes from manufacturing, commercial, or other indoor activities. PGIS includes vegetated roofs exposed to pesticides, fertilizers, or loss of soil. Other roofing types that may pose risk but are not currently regulated are listed Reference Section 11-E. Lawns, landscaping, sports fields, golf courses, and other areas that have modified runoff characteristics resulting from the addition of underdrains that have the pollution generating characteristics described under the "pollution-generating pervious surface" definition are also considered PGIS.

Pollution-generating pervious surface (PGPS)

A non-impervious surface considered to be a significant source of pollutants in surface and storm water runoff. Such surfaces include those that are subject to vehicular use, industrial activities, storage of erodible or leachable materials, wastes, or chemicals, and that receive direct rainfall or the run-on or blow-in of rainfall; or subject to use of pesticides and fertilizers, or loss of soil. Such surfaces include, but are not limited to, the lawn and landscaped areas of residential, commercial, and industrial sites or land uses, golf courses, parks, sports fields (natural and artificial turf), cemeteries, and grassed modular grid pavement.

Replaced impervious surface

Any existing impervious surface on the project site that is proposed to be removed and re-established as impervious surface, excluding impervious surface removed for the sole purpose of installing utilities or performing maintenance on underground infrastructure. For structures, removed means the removal of buildings down to the foundation. For other impervious surfaces, removed means the removal down to base course or bare soil. For purposes of this definition, base course is the layer of crushed rock that typically underlies an asphalt or concrete pavement. It does not include the removal of pavement material through grinding or other surface modification unless the entire layer of PCC or AC is removed. Replaced impervious surface also includes impervious surface that is moved from one location to another on the project site where the following two conditions are met: (A) runoff characteristics and volumes remain the same or are improved in the area where the existing impervious surface is removed , and (B) impervious surface at the new location is either designated as non-pollution generating or the pollution generating characteristics remain unchanged compared to that of the original location.

Replaced pollution generating impervious surface (PGIS)

Replaced impervious surface that is pollution-generating impervious surface.

ADDITIONAL DESIGN RESOURCES AND CITY STANDARDS

City of Renton Surface Water Design Manual (RSWDM)

City of Renton Standard Details

City of Renton Forms

COR Maps