

The State Department of Ecology (DOE) has issued five volumes – each about 6” thick – of rules and regulations dealing with “stormwater” issues.

Several regional organizations of Realtors employed a researcher to review the volumes, and present some of the areas covered.

The document which follows is the resulting report.

2.4.1 New Development

All new development that shall be required to comply with Minimum Requirement #2. In addition, new development that exceeds certain thresholds shall be required to comply with additional Minimum Requirements as follows.

The following new development shall comply with Minimum Requirements #1 through #5:

- Creates or adds 2,000 square feet, or greater, of new, replaced, or new plus replaced impervious surface area, or
- Has land disturbing activity of 7,000 square feet or greater,

The following new development shall comply with Minimum Requirements #1 through 10:

- Creates or adds 5,000 square feet, or more, of new impervious surface area, or
- Converts 3/4 acres, or more, of native vegetation to lawn or landscaped areas, or
- Converts 2.5 acres, or more, of native vegetation to pasture.

Supplemental Guidelines

Basin planning is encouraged and may be used to tailor certain of the Minimum Requirements to a specific basin (Minimum Requirement #9). Treatment and flow control requirements may be achieved through construction of regional facilities. Such facilities must be operational prior to and must have capacity for new development.

2.4.2 Redevelopment

All redevelopment shall be required to comply with Minimum Requirement #2. In addition, all redevelopment that exceeds certain thresholds shall be required to comply with additional Minimum Requirements as follows.

The following redevelopment shall comply with Minimum Requirements #1 through #5 for the new and replaced impervious surfaces and the land disturbed:

- The new, replaced, or total of *new plus* replaced impervious surfaces is 2,000 square feet or more, or
- 7,000 square feet or more of land disturbing activities.

The following redevelopment shall comply with Minimum Requirements #1 through 10 for the new impervious surfaces and converted pervious areas:

- Adds 5,000 square feet or more of *new* impervious surfaces or,
- Converts 3/4 acres, or more, of native vegetation to lawn or landscaped areas, or
- Converts 2.5 acres, or more, of native vegetation to pasture.

If the runoff from the new impervious surfaces and converted pervious surfaces is not separated from runoff from other surfaces on the project site, the stormwater treatment facilities must be sized for the entire flow that is directed to them.

The local government may allow the Minimum Requirements to be met for an equivalent (flow and pollution characteristics) area within the same site. For public roads' projects, the equivalent area does not have to be within the project limits, but must drain to the same receiving water.

Additional Requirements for the Project Site

For road-related projects, runoff from the replaced and new impervious surfaces (including pavement, shoulders, curbs, and sidewalks) shall meet all the Minimum Requirements if the new impervious surfaces total 5,000 square feet or more and total 50% or more of the existing impervious surfaces within the project limits. The project limits shall be defined by the length of the project and the width of the right—of-way.

Other types of redevelopment projects shall comply with all the Minimum Requirements for the new and replaced impervious surfaces if the total of new plus replaced impervious surfaces is 5,000 square feet or more, and the valuation of proposed improvements—including interior improvements—exceeds 50% of the assessed value of the existing site improvements.

A local government may exempt or institute a stop-loss provision for redevelopment projects from compliance with Minimum Requirements for treatment, flow control, and wetlands protection as applied to the replaced impervious surfaces if the local government has adopted a plan and a schedule that fulfills those requirements in regional facilities.

Objective

Redevelopment projects have the same requirements as new development projects in order to minimize the impacts from new surfaces. To not discourage redevelopment projects, replaced surfaces aren't required to be brought up to new stonnwater standards unless the noted cost or space

thresholds are exceeded. As long as the replaced surfaces have similar pollution-generating potential, the amount of pollutants discharged shouldn't be significantly different. However, if the redevelopment project scope is sufficiently large that the cost or space criteria noted above are exceeded, it is reasonable to require the replaced surfaces to be brought up to current stormwater standards. This is consistent with other utility standards. When a structure or a property undergoes significant remodeling, local governments often require the site to be brought up to new building code requirements (e.g., onsite sewage disposal systems, fire systems).

Supplemental Guidelines

If runoff from new impervious surfaces, converted pervious surfaces, and replaced impervious surfaces (if the applicable cost or space threshold has been exceeded) is not separated from runoff from other existing surfaces within the project site or the site, the guidance in Volume III for offsite inflow shall be used to size the detention facilities.

Local governments can select from various bases for identifying projects that must retrofit the replaced impervious surfaces on the project site. Those can include:

- Exceeding 50% of the assessed value of the existing improvements;
- Exceeding 50% of the replacement value of the existing site improvements as determined by the Marshall Value System, or a similar valuation system; and
- Exceeding a certain dollar value of improvements; and
- Exceeding a certain ratio of the new impervious surfaces to the total of replaced plus new impervious surfaces.

A local government's thresholds for the application of stormwater controls to replaced impervious surfaces must be at least as stringent as Ecology's thresholds. Local governments should be prepared to demonstrate that by comparing the number and types of historical projects that would have been regulated using the Ecology thresholds versus the local government's thresholds.

Local governments are allowed to institute a stop-loss provision on the application of stormwater requirements to replaced impervious surfaces. A stop-loss provision is an upper limit on the extent to which a requirement is applied. For instance, there could be a maximum percentage of the estimated total project costs that are dedicated to meeting stormwater requirements. A project would not have to incur

additional stormwater costs above that maximum though the standard redevelopment requirements will not be fully achieved. The allowance for a stop-loss

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provision pertains to the extent that treatment, flow control and wetlands protection requirements are imposed on replaced impervious surfaces. It does not apply to meeting stormwater requirements for new impervious surfaces.

Local governments can also establish criteria for allowing redevelopment projects to pay a fee in lieu of constructing water quality or flow control facilities on a redeveloped site. At a minimum, the fee should be the equivalent of an engineering estimate of the cost of meeting all applicable stormwater requirements for the project. The local government should use such funds for the implementation of stormwater control projects that would have similar benefits to the same receiving water as if the project had constructed its required improvements. Expenditure of such funds is subject to other state statutory requirements.

Ecology cautions local governments about the potential long-term consequences of allowing a fee-in-lieu of stormwater facilities. Sites that are allowed to pay a fee continue without stormwater controls. If it is determined, through future basin planning for instance, that controls on such sites are necessary to achieve water quality goals or legal requirements, the public may bear the costs for providing those controls.

Underground utility projects that replace the ground surface with in-kind material or materials with similar runoff characteristics should not be subject to redevelopment requirements except construction site erosion control.

Local governments are also encouraged to review all road projects for changes in elevations or drainage flowpath that could cause flooding, upland or stream erosion, or changes to discharges to wetlands. For example, adding curbs will result in redirecting flows and possibly causing new downstream impacts. The local government should set project-specific requirements to avoid or mitigate those impacts.

2.5 Minimum Requirements

This section describes the minimum requirements for stormwater management at development and redevelopment sites. Section 2.4 should be consulted to determine which requirements apply to any given project. Volumes II through V of this manual present Best Management Practices (BMP5) for use in meeting the Minimum Requirements.

Throughout this Chapter, guidance to meet the requirements of the Puget Sound Water Quality Management Plan is written in bold and supplemental guidelines that serve as advice and other materials are not in bold.

2.5.1 Minimum Requirement #1: Preparation of Stormwater Site Plans

All projects meeting the thresholds in Section 2.4 shall prepare a Stormwater Site Plan for local government review. Stormwater Site Plans shall be prepared in accordance with Chapter 3 of this volume.

Objective

The 2,000 square feet threshold for impervious surfaces and 7,000 square foot threshold for land disturbance are chosen to capture most single family home construction and their equivalent. Note that the scope of the stormwater site plan only covers compliance with Minimum Requirements #2 through #5 if the thresholds of 5,000 square feet of impervious surface or conversion of $\frac{3}{4}$ acre of native vegetation to lawn or landscape, or conversion of 2.5 acres of native vegetation to pasture are not exceeded.

Supplemental guidelines

Projects proposed by departments and agencies within the local government with jurisdiction must comply with this requirement. The local government shall determine the process for ensuring proper project review, inspection, and compliance by its own departments and agencies.

2.5.2 Minimum Requirement #2: Construction Stormwater Pollution Prevention (SWPP)

All new development and redevelopment shall comply with Construction SWPP Elements #1 through #12 below.

Projects in which the new, replaced, or new plus replaced impervious surfaces total 2,000 square feet or more, or disturb 7,000 square feet or more of land must prepare a Construction SWPP Plan (SWPPP) as part of the Stormwater Site Plan (see 2.5.1). Each of the twelve elements must be considered and included in the Construction SWPPP unless site conditions render the element unnecessary and the exemption from that element is clearly justified in the narrative of the

SWPPP.

Projects that add or replace less than 2,000 square feet of impervious surface or disturb less than 7,000 square feet of land are not required to prepare a Construction SWPPP, but must consider all of the twelve Elements of Construction Stormwater Pollution Prevention and develop controls for all elements that pertain to the project site.

Element 1: Mark Clearing Limits

- Prior to beginning land disturbing activities, including clearing and grading, all clearing limits, sensitive areas and their buffers, and trees that are to be preserved within the construction area should be clearly marked, both in the field and on the plans, to prevent damage and offsite impacts.
- Plastic, metal, or stake wire fence may be used to mark the clearing limits.

Element 2: Establish Construction Access

- Construction vehicle access and exit shall be limited to one route if possible.
- Access points shall be stabilized with quarry spall or crushed rock to minimize the tracking of sediment onto public roads.
- Wheel wash or tire baths should be located on-site, if applicable.
- Public roads shall be cleaned thoroughly at the end of each day. Sediment shall be removed from roads by shoveling or pickup sweeping and shall be transported to a controlled sediment disposal area. Street washing will be allowed only after sediment is removed in this manner.
- Street wash wastewater shall be controlled by pumping back on-site, or otherwise be prevented from discharging into systems tributary to state surface waters.

Element 3: Control Flow Rates

- Properties and waterways downstream from development sites shall be protected from erosion due to increases in the volume, velocity, and peak flow rate of stormwater runoff from the project site, as required by local plan approval authority.
- Downstream analysis is necessary if changes in flows could impair or alter conveyance systems, streambanks, bed sediment or aquatic habitat. See Chapter 3 for offsite analysis guidance.
- Where necessary to comply with Minimum Requirement #7, Stormwater retention/detention facilities shall be constructed as one of the first steps in grading. Detention facilities shall be functional prior to construction of site improvements (e.g. impervious surfaces).
- The local permitting agency may require pond designs that provide additional or different stormwater flow control if

waterways downstream from erosion due to increases in the volume, velocity, and peak flow rate of stormwater runoff from the project site.

- If permanent infiltration ponds are used for flow control during construction, these facilities should be protected from siltation during the construction phase.

Element 4: Install Sediment Controls

- The duff layer, native topsoil, and natural vegetation shall be retained in an undisturbed state to the maximum extent practicable.
- Prior to leaving a construction site, or prior to discharge to an infiltration facility, stormwater runoff from disturbed areas shall pass through a sediment pond or other appropriate sediment removal BMP. Runoff from fully stabilized areas may be discharged without a sediment removal BMP, but must meet the flow control performance standard of Element #3, bullet #1. Full stabilization means concrete or asphalt paving; quarry spalls used as ditch lining; or the use of rolled erosion products, a bonded fiber matrix product, or vegetative cover in a manner that will fully prevent soil erosion. The Local Permitting Authority shall inspect and approve areas stabilized by means other than pavement or quarry spalls.
- Sediment ponds, vegetated buffer strips, sediment barriers or filters, dikes, and other BMPs intended to trap sediment on-site shall be constructed as one of the first steps in grading. These BMPs shall be functional before other land disturbing activities take place.
- Earthen structures such as dams, dikes, and diversions shall be seeded and mulched according to the timing indicated in Element #5.

Element 5: Stabilize Soils

- All exposed and unworked soils shall be stabilized by application of effective BMPs, that protect the soil from the erosive forces of raindrop impact and flowing water, and wind erosion.
- From October 1 through April 30, no soils shall remain exposed and unworked for more than 2 days. From May 1 to September 30, no soils shall remain exposed and unworked for more than 7 days. This condition applies to all soils on site, whether at final grade or not. These time limits may be adjusted by the local permitting authority if it can be shown that the average time between storm events justifies a different standard.

- Applicable practices include, but are not limited to, temporary and permanent seeding, sodding, mulching, plastic covering, soil application of polyacrylamide (PAM), early application of gravel base on areas to be paved, and dust control.
- Soil stabilization measures selected should be appropriate for the time of year, site conditions, estimated duration of use, and potential water quality impacts that stabilization agents may have on downstream waters or ground water.
- Soil stockpiles must be stabilized and protected with sediment trapping measures.
- Work on linear construction sites and activities, including right-of-way and easement clearing, roadway development, pipelines, and trenching for utilities, shall not exceed the capability of the individual contractor for his portion of the project to install the bedding materials, roadbeds, structures, pipelines, and/or utilities, and to re-stabilize the disturbed soils, meeting the timing conditions listed above.

Element 6: Protect Slopes

- Cut and fill slopes shall be designed and constructed in a manner that will minimize erosion.
- Consider soil type and its potential for erosion.
- Reduce slope runoff velocities by reducing the continuous length of slope with terracing and diversions, reduce slope steepness, and roughen slope surface.
- Divert upslope drainage and run-on waters from off-site with interceptors at top of slope. Off-site stormwater should be handled separately from stormwater generated on the site. Diversion of off-site stormwater around the site may be a viable option. Diverted flows shall be redirected to the natural drainage location at or before the property boundary.
- Contain downslope collected flows in pipes, slope drains, or protected channels.
- Provide drainage to remove ground water intersecting the slope surface of exposed soil areas.
- Excavated material shall be placed on the uphill side of trenches, consistent with safety and space considerations.
- Check dams shall be placed at regular intervals within trenches that are cut down a slope.

- Stabilize soils on slopes, as specified in Element #5.

Element 7: Protect Drain Inlets

- All storm drain inlets made operable during construction shall be protected so that stormwater runoff shall not enter the conveyance system without first being filtered or treated to remove sediment.
- All approach roads shall be kept clean, and all sediment and street wash water shall not be allowed to enter storm drains without prior and adequate treatment unless treatment is provided before the storm drain discharges to waters of the State.

Element 8: Stabilize Channels and Outlets

- All temporary on-site conveyance channels shall be designed, constructed and stabilized to prevent erosion from the expected velocity of flow from a 2 year, 24-hour frequency storm for the developed condition.
- Stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent streambanks, slopes and downstream reaches shall be provided at the outlets of all conveyance systems.

Element 9: Control Pollutants

- All pollutants, including waste materials and demolition debris, that occur on-site during construction shall be handled and disposed of in a manner that does not cause contamination of stormwater.
- Cover, containment, and protection from vandalism shall be provided for all chemicals, liquid products, petroleum products, and non-inert wastes present on the site (see Chapter 173-304 WAC for the definition of inert waste).
- Maintenance and repair of heavy equipment and vehicles involving oil changes, hydraulic system drain down, solvent and de-greasing cleaning operations, fuel tank drain down and removal, and other activities which may result in discharge or spillage of pollutants to the ground or into stormwater runoff must be conducted using spill prevention measures, such as drip pans. Contaminated surfaces shall be cleaned immediately following any discharge or spill incident. Emergency repairs may be performed on-site using temporary plastic placed beneath and, if raining, over the vehicle.
- Wheel wash, or tire bath wastewater, shall be discharged to a separate on-site treatment system or to the sanitary sewer.
- Application of agricultural chemicals, including fertilizers and pesticides, shall be conducted in a manner and at application

rates that will not result in loss of chemical to stormwater runoff. Manufacturers' recommendations shall be followed for application rates and procedures.

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- Management of pH-modifying sources shall prevent contamination of runoff and stormwater collected on the site. These sources include, but are not limited to, bulk cement, cement kiln dust, fly ash, new concrete washing and curing waters, waste streams generated from concrete grinding and sawing, exposed aggregate processes, and concrete pumping and mixer washout waters.

Element 10: Control De-Watering

- All foundation, vault, and trench de-watering water, which has similar characteristics to stormwater runoff at the site, shall be discharged into a controlled conveyance system, prior to discharge to a sediment trap or sediment pond. Channels must be stabilized, as specified in Element #8.
- Clean, non-turbid de-watering water, such as well-point ground water, can be discharged to systems tributary to state surface waters, as specified in Element #8, provided the de-watering flow does not cause erosion or flooding of the receiving waters. These clean waters should not be routed through sediment ponds with stormwater.
- Highly turbid or otherwise contaminated dewatering water, such as from construction equipment operation, clamshell digging, concrete tremie pour, or work inside a cofferdam, shall be handled separately from stormwater at the site.
- Other disposal options, depending on site constraints, may include: 1) infiltration, 2) transport off-site in vehicle, such as a vacuum flush truck, for legal disposal in a manner that does not pollute state waters, 3) on-site treatment using chemical treatment or other suitable treatment technologies, or 4) sanitary sewer discharge with local sewer district approval if there is no other option.

Element 11: Maintain BMPs

- All temporary and permanent erosion and sediment control BMPs shall be maintained and repaired as needed to assure continued performance of their intended function. All maintenance and repair shall be conducted in accordance with BMPs.
- Sediment control BMPs shall be inspected weekly or after a runoff-producing storm event during the dry season and daily during the wet season.
- All temporary erosion and sediment control BMPs shall be removed within 30 days after final site stabilization is achieved or

after the temporary BMPs are no longer needed. Trapped sediment shall be removed or stabilized on site. Disturbed soil areas resulting from removal of BMPs or vegetation shall be permanently stabilized.

Element 12: Manage The Project

- Phasing of Construction - Development projects shall be phased where feasible in order to prevent, to the maximum extent practicable, the transport of sediment from the development site during construction. Revegetation of exposed areas and maintenance of that vegetation shall be an integral part of the clearing activities for any phase.

Clearing and grading activities for developments shall be permitted only if conducted pursuant to an approved site development plan (e.g., subdivision approval) that establishes permitted areas of clearing, grading, cutting, and filling. When establishing these permitted clearing and grading areas, consideration should be given to minimizing removal of existing trees and minimizing disturbance/compaction of native soils except as needed for building purposes. These permitted clearing and grading areas and any other areas required to preserve critical or sensitive areas, buffers, native growth protection easements, or tree retention areas as may be required by local jurisdictions, shall be delineated on the site plans and the development site.

- Seasonal Work Limitations - From October 1 through April 30, clearing, grading, and other soil disturbing activities shall only be permitted if shown to the satisfaction of the local permitting authority that silt-laden runoff will be prevented from leaving the construction site through a combination of the following:
 1. Site conditions including existing vegetative coverage, slope, soil type and proximity to receiving waters; and
 2. Limitations on activities and the extent of disturbed areas; and
 3. Proposed erosion and sediment control measures.

Based on the information provided, and/or local weather conditions, the local permitting authority may expand or restrict the seasonal limitation on site disturbance. If, during the course of any construction activity or soil disturbance during the seasonal limitation period, silt-laden runoff leaving the construction site causes a violation of the surface water quality standard or if clearing and grading limits or erosion and sediment control measures shown in the approved plan are not maintained, the local permitting authority shall take enforcement action,

including, but not limited to a notice of violation, administrative order, penalty, or stop-work order.

The following activities are exempt from the seasonal clearing and grading limitations:

1. Routine maintenance and necessary repair of erosion and sediment control BMPs;
 2. Routine maintenance of public facilities or existing utility structures that do not expose the soil or result in the removal of the vegetative cover to soil; and
 3. Activities where there is one hundred percent infiltration of surface water runoff within the site in approved and installed erosion and sediment control facilities.
- Coordination with Utilities and Other Contractors - The primary project proponent shall evaluate, with input from utilities and other contractors, the stormwater management requirements for the entire project, including the utilities, when preparing the Construction SWPPP.
 - Inspection and Monitoring - All BMPs shall be inspected, maintained, and repaired as needed to assure continued performance of their intended function.

A Certified Professional in Erosion and Sediment Control shall be identified in the Construction SWPPP and shall be on-site or on-call at all times. Certification may be through the Washington State Department of Transportation/Associated General Contractors (WSDOT/AGC) Construction Site Erosion and Sediment Control Certification Program or any equivalent local or national certification and/or training program.

Sampling and analysis of the stormwater discharges from a construction site may be necessary on a case-by-case basis to ensure compliance with standards. Monitoring and reporting requirements may be established by the local permitting authority when necessary.

Whenever inspection and/or monitoring reveals that the BMPs identified in the Construction SWPPP are inadequate, due to the actual discharge of or potential to discharge a significant amount of any pollutant, the SWPPP shall be modified, as appropriate, in a timely manner.

- Maintenance of the Construction SWPPP - The Construction

SWPPP shall be retained on-site or within reasonable access to the site. The Construction SWPPP shall be modified whenever there is a significant change in the design, construction, operation, or maintenance of any BMP.