

STORMWATER MANAGEMENT

Chapter 11

STORMWATER QUALITY

Sec. 1101. STORMWATER QUALITY CONTROL PLANS

Development activities which must comply with the requirements of these standards as set forth in Section 103 shall be conducted only after the City approves a Stormwater Quality Control Plan which includes one or more of the following as required by this chapter:

- A. Small Parcel Erosion Sedimentation Control Plan
- B. Large Parcel Erosion Sedimentation Control Plan
- C. Permanent Stormwater Quality Control (PSQC) Plan

Sec. 1102. GENERAL REQUIREMENTS

- A. **Stormwater Management Manual Adopted.** The latest edition of the Department of Ecology Stormwater Management Manual for the Puget Sound Basin is hereby adopted by reference and is hereinafter referred to as the Manual.
- B. **Stormwater Best Management Practices (BMP's)**
 - 1. **General.** Best Management Practices (BMP's) shall be used to control pollution from stormwater and shall be used to comply with the standards in this Ordinance. Approved BMP's are in those set forth in the Manual.
 - 2. **Experimental BMP's.** In those instances where appropriate BMP's are not in the Manual, experimental BMP's may be approved by the City in accordance with the approval process set forth in the Manual.
- C. **Illicit Discharge.** Illicit discharges to stormwater drainage systems are prohibited.

Sec. 1103.

SMALL PARCEL

- A. **General.** New development subject to the provisions of these standards and included in one of the three categories below shall be required to control erosion and sediment during construction, to permanently stabilize soil exposed during construction, to comply with Small Parcel Requirements in Section 1104 and to prepare a small parcel stormwater management plan:
1. Individual, detached, single family residences and duplexes.
 2. Creation or addition of less than 5,000 square feet of impervious surface area.
 3. Land disturbing activities of less than one acre.

Sec. 1104.

SMALL PARCEL MINIMUM REQUIREMENTS

1. **Construction Access Route.** Construction vehicle access shall be, whenever possible, limited to one route. Access points shall be stabilized with quarry spall or crushed rock to minimize the tracking of sediment onto public roads.
2. **Stabilization of Denuded Areas.** All exposed soils shall be stabilized by suitable application of BMP's, including but not limited to sod or other vegetation, plastic covering, mulching, or application of ground base on areas to be paved. All BMP's shall be selected, designed and maintained in accordance with an approved manual. From October 1 through April 30, no soils shall remain exposed for more than 2 days. From May 1 through September 30, no soils shall remain exposed for more than 7 days.
3. **Protection of Adjacent Properties.** Adjacent properties shall be protected from sediment deposition by appropriate use of vegetative buffer strips, sediment barriers or filters, dikes or mulching, or by a combination of these measures and other appropriate BMP's.
4. **Maintenance.** All erosion and sediment control BMP's shall be regularly inspected and maintained to ensure continued performance of their intended function.
5. **Other BMP's.** As required by the local plan approval authority, other appropriate BMP's to mitigate the effects of increased runoff may be required.

LARGE DEVELOPMENT MINIMUM REQUIREMENTS

A. **New Development.** New development that includes the creation or addition of 5,000 square feet, or greater, of new impervious surface area; and/or land disturbing activity of one acre or greater shall comply with minimum BMP's set forth in Sections 1106 through 1116. Section 1105 does not apply to the construction of individual, detached, single family residences or duplexes (see section 1104).

B. **Redevelopment**

1. Where redevelopment of 5,000 square feet or greater occurs, the requirements set forth in Sections 1106 through 1116 shall apply to that portion of the site that is being redeveloped, and source control BMP's shall be applied to the entire site, including adjoining parcels if they are part of the project.
2. In addition to other redevelopment requirements, where one or more of the following conditions apply, a stormwater management plan shall be prepared that includes a schedule for implementing the minimum requirements to the maximum extent practicable for the entire site, including adjoining parcels if they are part of the project. An adopted and implemented basin plan may be used to develop redevelopment requirements that are tailored to a specific basin.
 - (a) Existing sites greater than 1 acre with 50 percent or more impervious surface.
 - (b) Sites that discharge to a receiving water that has a documented water quality problem.
 - (c) Sites where the need for additional stormwater control measures have been identified through a basin plan, the watershed ranking process under Ch. 400-12 WAC, or through Growth Management planning.

EROSION SEDIMENTATION CONTROL

Large Site Erosion and sediment control for land disturbing activities 1 acre and greater. All new development and redevelopment that includes land disturbing activities greater than 1 acre, shall comply with Erosion and Sediment Control Requirements set forth as follows. Compliance with the Erosion and Sediment Control Requirements shall be demonstrated through implementation of an Erosion and Sediment Control Plan.

The following erosion and sediment control requirements shall be met:

1. **Stabilization and Sediment Trapping.** All exposed soils shall be stabilized by suitable application of BMP's. From October 1 to April 30, no soils shall remain exposed for more than 2 days. From May 1 to September 30, no soils shall remain exposed for more than 7 days. Prior to leaving the site, stormwater runoff shall pass through a sediment pond or sediment trap, or other appropriate BMP's.
2. **Delineate Clearing and Easement Limits.** In the field, stake and flag clearing limits and/or any easements, setbacks, sensitive/critical areas and their buffers, trees and drainage courses.
3. **Protection of Adjacent Properties.** Properties adjacent to the project site shall be protected from sediment deposition.
4. **Timing and Stabilization of Sediment Trapping Measures.** Sediment ponds and traps, perimeter dikes, sediment barriers, and other BMP's intended to trap sediment on-site shall be constructed as a first step in grading. These BMP's shall be functional before land disturbing activities take place. Earthen structures such as dams, dikes, and diversions shall be seeded and mulched according to the timing indicated in Sec. 1106(1).
5. **Cut and Fill Slopes.** Cut and fill slopes shall be designed and constructed in a manner that will minimize erosion. In addition, slopes shall be stabilized in accordance with Sec 1106(1).
6. **Controlling Off-Site Erosion.** 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.

7. **Stabilization of Temporary Conveyance 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 adequate to prevent erosion of outlets, adjacent streambanks, slopes and downstream reaches shall be provided at the outlets of all conveyance systems.
8. **Storm Drain Inlet Protection.** 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 otherwise treated to remove sediment.
9. **Underground Utility Construction.** The construction of underground utility lines shall be subject to the following criteria:
 - (a) Where feasible, no more than 500 feet of trench shall be opened at one time.
 - (b) Where consistent with safety and space considerations, excavated material shall be placed on the uphill side of trenches.
 - (c) Trench dewatering devices shall discharge into a sediment trap or sediment pond.
10. **Construction Access Routes.** Wherever construction vehicle access routes intersect paved roads, provisions must be made to minimize the transport of sediment (mud) onto the paved road. If sediment is transported onto a road surface, the roads shall be cleaned thoroughly at the end of each day. Sediment shall be removed from roads by shoveling or sweeping and be transported to a controlled sediment disposal area. Street washing shall be allowed only after sediment is removed in this manner.
11. **Removal of Temporary BMP's.** All temporary erosion and sediment control BMP's shall be removed within 30 days after final site stabilization is achieved or after the temporary BMP's are no longer needed. Trapped sediment shall be removed or stabilized on site. Disturbed soil areas resulting from removal shall be permanently stabilized.
12. **Dewatering Construction Sites.** Dewatering devices shall discharge into a sediment trap or sediment pond.

13. **Control of Pollutants other than Sediment on Construction Sites.** All pollutants other than sediment that occur on-site during construction shall be handled and disposed of in a manner that does not cause contamination of stormwater.
14. **Maintenance.** All temporary and permanent erosion and sediment control BMP's 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 an approved manual.
15. **Financial Liability.** Performance bonding, or other appropriate financial instruments, shall be required for all projects to ensure compliance with the approved erosion and sediment control plan.

Sec. 1107. PRESERVATION OF NATURAL DRAINAGE SYSTEMS

Natural drainage patterns shall be maintained, and discharges from the site shall occur at the natural location, to the maximum extent practicable.

Sec. 1108. SOURCE CONTROL OF POLLUTION

- A. Source control BMP's shall be applied to all projects to the maximum extent practicable. Source control BMP's shall be selected, designed, and maintained according to an approved manual.
- B. An adopted and implemented basin plan may be used to develop source control requirements that are tailored to a specific basin. However, in all circumstances, source control BMP's shall be required for all sites.

Sec. 1109. RUNOFF TREATMENT BMP's

- A. All projects shall provide treatment of stormwater. Treatment BMP's shall be sized to capture and treat the water quality design storm, defined as the six-month, 24-hour return period storm, which is defined as 64 percent of the 2-year, 24-hour storm. The first priority for treatment shall be to infiltrate as much as possible of the water quality design storm, only if site conditions are appropriate and ground water quality will not be impaired. Direct discharge of untreated stormwater to ground water is prohibited. All treatment BMP's shall be selected, designed, and maintained according to an approved manual.
- B. An adopted and implemented basin plan may be used to develop runoff treatment requirements that are tailored to a specific basin.

Sec. 1110.

STREAMBANK EROSION CONTROL

- A. The requirement below applies only to situations where stormwater runoff is discharged directly or indirectly to a stream. In such situations, this requirement must be met in addition to meeting the requirements of Sec. 1109:
1. Stormwater discharges to streams shall control streambank erosion by limiting the peak rate of runoff from individual development sites to 50 percent of the existing condition 2-year, 24-hour design storm during 2-year, 24-hour storm events, while maintaining the existing condition peak runoff rates for the 10-year, 24-hour and 100-year, 24-hour design storms. As the first priority, streambank erosion control BMP's shall utilize infiltration to the fullest extent practicable, only if site conditions are appropriate and ground water quality is protected. Streambank erosion control BMP's shall be selected, designed, and maintained according to an approved manual. A factor of safety incorporating a 20 to 50 percent horizontal volume increase should be used to compensate for design limitations using unit hydrograph methods. Design storm rates are identified in Section 1002.
 2. An adopted and implemented basin plan may be used to develop streambank erosion control requirements that are tailored to a specific basin.

Sec. 1111.

WETLANDS

The requirements below apply only to situations where stormwater discharges directly or indirectly through a conveyance system into a wetland as defined within ordinance #955. In such situations the requirements of this section must be met in addition to meeting the requirements Sec. 1109.

- A. Stormwater discharges to wetlands must be controlled and treated to the extent necessary to meet the State Water Quality Standards, Ch. 173-201 WAC, or Ground Water Quality Standards, Ch. 173-200 WAC, as appropriate.
- B. Discharges to wetlands shall maintain the hydroperiod and flows of existing site conditions to the extent necessary to protect the characteristic uses of the wetland. Prior to discharging to a wetland, alternative discharge locations shall be evaluated, and natural water storage and infiltration opportunities outside the wetland shall be maximized.

- C. Created wetlands that are intended to mitigate for loss of wetland acreage, function and value shall not be designed to also treat stormwater.
- D. In order for constructed wetlands to be considered treatment systems, they must be constructed on sites that are not wetlands and be managed for stormwater treatment. These wetlands shall be maintained in accordance with an approved maintenance schedule for a period exceeding three years (maintenance bond required). Discharges from constructed wetlands to waters of the state (including discharges to natural wetlands) are regulated under Ch. 90.48 RCW, Ch. 173-201 WAC, and Ch. 173-200 WAC.
- E. An adopted and implemented basin plan may be used to develop requirements for wetlands that are tailored to a specific basin.

Sec. 1112. WATER QUALITY SENSITIVE AREAS

Where the City of Ferndale determines that the minimum requirements do not provide adequate protection from a project of water quality sensitive areas, either on-site or immediately downstream, more stringent controls shall be required to protect water quality.

An adopted and implemented basin plan may be used to develop requirements for water quality sensitive areas that are tailored to a specific basin.

Sec. 1113. OFF-SITE ANALYSIS AND MITIGATION Follow through

All development projects shall conduct an analysis of off-site water quality impacts resulting from the project and shall mitigate these impacts. The analysis shall extend a minimum of one-fourth of a mile downstream from the project. The existing or potential impacts to be evaluated and mitigated shall include, at a minimum, but not be limited to:

- A. Excessive sedimentation
- B. Streambank erosion
- C. Discharges to ground water contributing or recharge zones
- D. Violations of water quality standards
- E. Spills and discharges of priority pollutants

Sec. 1114. BASIN PLANNING

Adopted and implemented watershed-based basin plans may be used to modify the requirements of Sections 1108 through 1112, provided that the level of protection for surface or ground water achieved by the basin plan will equal or exceed that which would be achieved by the Minimum Requirements in the absence of a basin plan. Basin plans shall evaluate and include, as necessary, retrofitting of BMP's for existing development and/or redevelopment in order to achieve watershed-wide pollutant reduction goals. Standards developed from basin plans shall not modify any of the City of Ferndale's requirements until the basin plan is formally adopted and fully implemented by local government. Basin plans shall be developed using an approved manual.

Sec. 1115. OPERATION AND MAINTENANCE

An operation and maintenance schedule shall be provided as required in these standards for proposed stormwater facilities and BMP's, and those responsible for maintenance and operation shall be identified.

Sec. 1116. FINANCIAL LIABILITY

Performance bonding or other appropriate financial instruments shall be required for all projects to ensure compliance with these standards.

Sec. 1117. EXCEPTIONS

Exceptions to requirements in Sections 1106 through 1116 may be granted by the City Council prior to permit approval and construction. An exception may be granted following a public hearing, provided that a written finding of fact is prepared, that addresses the following:

- A. The exception provides equivalent environmental protection and is in the public interest; and that the objectives of safety, function, environmental protection and facility maintenance, based upon sound engineering, are fully met;
- B. That there are special physical circumstances or conditions affecting the property such that the strict application of these provisions would deprive the applicant of all reasonable use of the parcel of land in question, and every effort to find creative ways to meet the intent of the minimum standards has been made;

- C. That the granting of the exception will not be detrimental to the public health and welfare, nor injurious to other properties in the vicinity and/or downstream, and to the quality of waters of the state;
- D. The exception is the least possible exception that could be granted to comply with the intent of these requirements.
- E. The exception shall be approved prior to permit approval and construction; and
- F. Exceptions granted shall be valid for 2 years, unless specified for a shorter period.