

7.83.140 Post-construction performance criteria for stormwater management.

(1) General Post-Construction Stormwater Management Criteria.

a) **Source Control.** All projects shall apply source control BMPs selected, designed, and maintained in accordance with the Stormwater Management Manual for Eastern Washington (or approved local equivalent).

1. Use of BMPs not selected, designed, and maintained in accordance with manuals identified in YMC 7.83.090 shall be subject to director approval and must be monitored for performance to demonstrate that they meet the minimum water quality performance standards of the Eastern Washington NPDES Phase II municipal stormwater permit requirements.

b) **Preservation of Natural Drainage.** Natural drainage patterns should be maintained for flood conveyances, conveyance of upland flow, and other purposes. Discharges from the project site should occur at the natural location to the maximum extent practicable. The preferred options for discharge of excess stormwater are, in order of preference to maintain natural drainage systems:

1. Maintain dispersed sheet flow to match natural conditions;
2. Infiltrate on-site;
3. Infiltrate off-site;
4. Discharge to existing ditch networks or canals, if allowed, or other dispersal methods that allow for potential groundwater recharge;
5. Discharge to wetlands, if allowed;
6. Discharge to existing private or municipally-owned stormwater systems, if allowed;
7. Evaporate on-site or off-site;
8. Create a new outfall for discharge to surface waters;
9. Preservation of natural drainage includes stormwater infiltration if that is the natural discharge method for the site;
10. The manner by which runoff is discharged from the project site must not cause an adverse impact to downstream receiving waters and down-gradient properties;
11. All outfalls must address energy dissipation as necessary;
12. The overflow of runoff in excess of the design storm quantities must be situated or directed to where it would have overflowed under the conditions existing prior to proposed development. The capacity of the drainage course downstream of the development may be required to be evaluated.

c) **Discharges to Adjacent Property.** Discharges from land development subject to this chapter, including from stormwater practices and upland flow, shall not be discharged onto adjacent property without appropriate authority and adequate conveyance in a natural stream or storm sewer system. The director may require drainage easements where

stormwater discharges must cross an adjacent or off-site property before reaching an adequate conveyance.

d) Flow Control. New development projects that meet the regulatory threshold and result in ten thousand square feet or more of new impervious surfaces shall construct stormwater flow control facilities for any discharge of stormwater directly, or through a conveyance system, into surface water. Redevelopment projects are not required to construct stormwater flow control facilities unless required under a basin plan or other federal, state or local requirement. The stormwater flow control facility shall be designed to protect stream morphology and associated instream habitat from adverse impacts due to increased peak flows and flow durations following development. Flow control facilities shall be selected, designed, constructed, operated and maintained consistent with guidance found in the Stormwater Management Manual for Eastern Washington or approved local equivalent.

1. In order to prevent localized erosion, energy dissipation at the point of discharge is required for all projects unless site-specific conditions warrant an exception.
2. Exemptions. Direct discharges to the following surface waters are exempt from flow control requirements to protect stream morphology:

- I. Any river or stream that is:

- Fifth order or greater as determined from a one-to-twenty-four-thousand scale map; or
- Fourth order or greater as determined from a one-to-one-hundred-thousand or larger scale map.

The maps should be standard USGS maps or GIS data sets derived from USGS base maps.

- II. Any lake or reservoir with a contributing watershed area greater than one hundred square miles.

- III. Reservoirs with outlet controls that are operated for varying discharges to the downstream reaches as for hydropower, flood control, irrigation, or drinking water supplies. Uncontrolled flow-through impoundments are not exempt.

- IV. Streams that flow only during runoff-producing events. The runoff carried by the stream following the two-year, Type IA rainfall event must not discharge via surface flow to a nonexempt surface water. To be exempt, the stream may carry runoff during an average annual snowmelt event but must not have a period of baseflow during a year of normal precipitation.

3. Flow Control. The stormwater site plan shall provide for the on-site detention and/or retention of the total water intercepted and collected by the development and the areas (improved or unimproved) lying and draining presently to and through the proposed development, for the design storm, unless other natural or manmade systems are available for use. Off-site stormwater (upland flow) conveyed through a land development shall be placed within an easement and conveyed in a manner that does not increase upstream or downstream flooding.

4. Flow control design calculations for peak flow and peak volume detention requirements shall be based on full retention of the postdevelopment condition for the stated design storm, and the contributing basin size, where contributing basin size refers to the total area above the inlet or hydraulic element.

I. For contributing basins of one-half acre or less, the larger of the twenty-five-year, three-hour storm or the twenty-five-year, twenty-four-hour design storm shall be used.

II. For contributing basins greater than one-half acre, the twenty-five-year, twenty-four-hour design storm shall be used.

III. The director may determine that the development is located in a drainage problem area, flood-prone basin, or area where the preceding requirements do not meet flood protection goals, whereby the design storm may be raised accordingly.

e) Runoff Treatment.

Basic Treatment. Basic treatment is intended to achieve a goal of eighty percent removal of total suspended solids for an influent concentration range of one hundred mg/L to two hundred mg/L. For influent concentration less than one hundred mg/L the effluent goal is twenty mg/L total suspended solids. For influent concentrations greater than two hundred mg/L a higher treatment goal is intended.

1. Basic runoff treatment to remove solids from stormwater runoff is required for all new development projects creating five thousand square feet or more of pollutant-generating impervious surface (PGIS) areas. Treatment is required for discharges to all surface waters of the state, including perennial and seasonal streams, lakes and wetlands where the PGIS threshold is met. Runoff treatment is also required for discharges of stormwater to ground where the vadose zone does not provide adequate treatment capacity (see Chapter 5.6 of the Stormwater Management Manual for Eastern Washington (2004), or another technical stormwater manual approved by Ecology).

2. Basic runoff treatment is required for redevelopment projects creating five thousand square feet or more of PGIS where:

I. The project takes place at an industrial site as defined by EPA (40 CFR 122.26(b)(14)) with outdoor handling, processing, storage, or transfer of solid raw materials or finished products, or

II. The project takes place at a commercial site with outdoor storage or transfer of solid raw materials or treated wood products, or

III. A need for additional stormwater control measures has been identified through a TMDL or other water cleanup plan or other planning process, or

IV. The project takes place at a high-use site, or

V. The project takes place in an area subject to vehicular traffic under any of the following conditions:

- The project improves a soft shoulder to a curb and gutter roadway with projected average daily traffic (ADT) of seven thousand five hundred or more vehicles.

- The project replaces and/or improves the surface of a parking area where the projected number of trip ends exceeds forty per one thousand square feet of building area or one hundred total trip ends per day.
- The project replaces and/or improves the surface of an urban road where the projected ADT is seven thousand five hundred or more vehicles per day.
- The project replaces and/or improves the surface of a freeway or rural road where the projected ADT is fifteen thousand or more vehicles per day.
- The project affects the area within five hundred feet of a controlled intersection on a limited access control highway with projected ADT of seven thousand five hundred or more vehicles per day. Only this area must be treated.

3. Exceptions. Nonpollutant-generating impervious surface (NPGIS) areas (roofs that are subject only to atmospheric deposition or normal heating, ventilation, and air conditioning vents are considered NPGIS, unless the roofing material is uncoated metal. The following may also be considered NPGIS: paved bicycle pathways and pedestrian sidewalks that are separated from and not subject to drainage from roads for motor vehicles, fenced fire lanes, infrequently used maintenance access roads, and “in-slope” areas of roads. Sidewalks that are regularly treated with sand, salt or other de-icing/anti-icing agents are not considered NPGIS) are exempt from basic treatment requirements unless the runoff from these areas is not separated from the runoff generated from PGIS areas. All runoff treatment facilities must be sized for the entire flow that is directed to them.

I. Projects that meet the requirements for dispersal and infiltration (see Chapter 6 of the Stormwater Management Manual for Eastern Washington (2004), particularly BMP T5.30) and do not meet the thresholds for requiring oil treatment are exempt from basic treatment requirements. Discharges to surface water from projects with a total PGIS area less than five thousand square feet are exempt from basic treatment requirements unless those areas are subject to the storage or handling of hazardous substances, materials or wastes as defined in 49 CFR 171.8, RCW 70.105.010, and/or RCW 70.136.020.

4. To protect water quality, reduce the discharge of pollutants to the maximum extent practicable, and to satisfy State All Known, Available, and Reasonable methods of prevention, control, and Treatment (AKART) requirements, the Stormwater Management Manual for Eastern Washington (1004) or another technical stormwater manual approved by the Washington State Department of Ecology shall be used for BMP selection, design, installation, and operation and maintenance standards.

f) Metals Treatment. Metals treatment is required in addition to basic treatment for new development projects with moderate-use sites, high-use sites, and sites that meet any of the following definitions:

1. Industrial sites as defined by EPA (40 CFR 122.26(b)(14)) with benchmark monitoring requirements for metals; or industrial sites subject to handling, storage, production, or disposal of metallic products or other materials, particularly those containing arsenic, cadmium, chromium, copper, lead, mercury, nickel or zinc.

2. On-street parking areas of municipal streets in commercial and industrial areas.

3. Highway rest areas.
 4. Runoff from metal roofs not coated with an inert, nonleachable material.
- g) Metals treatment is required in addition to basic treatment for redevelopment projects with high-use sites or high ADT roadways and parking areas and for projects where:
1. An additional need for stormwater control measures to remove metals has been identified through a TMDL or other water cleanup plan; or
 2. The project takes place at an industrial site that is subject to benchmark monitoring for metals;
 3. Exceptions. Unless a specific water quality problem has been identified, the following discharges are exempt from metals treatment requirements:
 - I. Discharges to non-fish-bearing streams.
 - II. Direct discharges to the main channels of the following rivers and direct discharges to the following lakes: Naches River, and Yakima River.
 - III. Subsurface discharges, unless identified as hydraulically connected to surface waters of the state.
 - IV. Restricted residential and employee-only parking areas, unless subject to through traffic.

Oil Treatment. Oil treatment is intended to achieve the goals of no ongoing or recurring visible sheen and a daily average total petroleum hydrocarbon concentration no greater than ten mg/L with a maximum of fifteen mg/L for discrete (grab) samples.

- h) Oil treatment is required for all high-use sites and high ADT roadways and parking areas at new development and redevelopment projects. Some sites will require a spill control type of oil control facility for source control separately from or in addition to this treatment requirement. Oil treatment/control is required in addition to any other runoff treatment required.
1. Separator technologies for oil treatment are required only for the following high-use sites:
 - I. High-density intersections with expected ADT of twenty-five thousand or more vehicles on main roadway and fifteen thousand or more vehicles on any intersecting roadway,
 - II. Nonemployee parking areas of commercial or industrial sites with trip end counts greater than one hundred vehicles per one thousand square feet gross building area,
 - III. Areas of commercial and industrial sites subject to use, storage, or maintenance of a fleet of twenty-five or more vehicles that are over ten tons gross weight—Fueling stations and facilities, and
 - IV. Sites subject to petroleum transfer in excess of one thousand five hundred gallons per year, not including routinely delivered heating oil.

2. For the following sites, a catch basin preceded by passive oil control vault, such as a chamber with a turned-down elbow, may be applied in lieu of an approved separator technology as long as they are inspected/maintained/cleaned at least once per year or more frequently as needs are identified:

I. A customer or visitor parking lot with an expected trip end count equal to or greater than three hundred vehicles (best professional judgment should be used in comparing this criterion with the preceding criterion); and

II. Commercial on-street parking areas on streets with an expected total ADT count equal to or greater than seven thousand five hundred.

3. At all other high-use sites and high ADT traffic areas subject to the oil treatment requirement, sorptive technologies, not separators, are required. Basic treatment methods with sorptive properties, such as swales or filters, may be selected to fulfill this requirement; or catch basin inserts may be used at these sites. A catch basin preceded by passive oil control vault, such as a chamber with a turned-down elbow, may be applied at sites with ADT greater than thirty thousand as long as they are inspected/maintained/cleaned at least once per year or more frequently as needs are identified.

4. High-use roadway intersections shall treat lanes where vehicles accumulate during the signal cycle, including left- and right-turn lanes and through lanes, from the beginning of the left turn pocket. If no left-turn pocket exists, the treatable area shall begin at a distance equal to three car lengths from the stop line. If runoff from the intersection drains to more than two collection areas that do not combine within the intersection, treatment may be limited to any two of the collection areas where the cars stop.

5. High-use sites and high ADT roadways and parking areas must treat runoff from the high-use portion of the site using oil control treatment options in Chapter 5 of the Stormwater Management Manual for Eastern Washington prior to discharge or infiltration. For high-use sites located within a larger project area, only the impervious area associated with the high-use site is subject to oil control treatment, but the flow from that area must be separated; otherwise the treatment controls must be sized for the entire area.

i) Treatment Facility Sizing. Each treatment BMP shall be sized based on a water quality design volume or a water quality design flow rate.

1. Treatment Design Volume. Volume-based facilities shall be designed to capture and treat one-half inch predicted runoff produced for the proposed development condition from all impervious surface areas that contribute flow to the treatment facility.

2. Treatment Design Flow Rate. Flow-based treatment BMPs shall be designed to treat the water quality flow, computed as follows:

I. Flow-based treatment BMPs located upstream of detention facilities shall be designed to treat the runoff flow rate predicted for the proposed development condition from the short-duration storm with a six-month return frequency, computed in accordance with the Stormwater Management Manual for Eastern Washington, or approved local equivalent.

II. Flow-based treatment BMPs located downstream of detention facilities shall be designed to treat the runoff flow rate for the proposed development condition calculated by the rational method using the two-year mean recurrence interval. This method may only be used to design facilities based on instantaneous peak flow rates.

j) Treatment Bypass Requirements. A bypass must be provided for all treatment BMPs unless the facility is able to convey the twenty-five-year three-hour storm without damaging the BMP or dislodging pollutants from within it. Extreme runoff events may produce high flow velocities through BMPs that can damage and/or dislodge pollutants from within the facility.

k) Use of Existing Wetlands. Stormwater treatment facilities are not allowed within a wetland or its natural vegetated buffer, or to provide treatment, except for:

1. Necessary conveyance systems approved by the local government; or
2. As allowed in a wetland mitigation plan;
3. When permitted, critical areas and shorelines codes will also apply.

l) Hydrologic Modification of a Wetland. Hydrologic modification of a wetland shall not be allowed if the wetland is classified as Category 1 or Category 2 according to the Eastern Washington Wetland Rating System unless the applicant demonstrates that preferred methods of excess stormwater disposal (e.g., infiltration) are not possible at the site and that other options (e.g., evaporation) would result in more damage to the wetland by limiting inflow. Mitigation shall be required for the impact of hydrologic modification to a wetland. Appropriate measures include expansion, enhancement and/or preservation of a buffer around the wetland.

m) Stormwater BMP Maintenance. All stormwater BMPs shall be maintained in accordance with the approved and deeded stormwater maintenance agreement and stormwater maintenance plan. The design of stormwater facilities shall incorporate maintenance accommodation and long-term maintenance reduction features in accordance with guidance contained in the latest version of the Stormwater Management Manual for Eastern Washington, or approved local equivalent.

n) Individual Lots Not Separate Land Development. Residential, commercial or industrial developments shall apply these stormwater management criteria to land development as a whole. Individual residential lots in new subdivisions shall not be considered separate land development projects, but rather the entire subdivision shall be considered a single land development project.

o) Location of Stormwater Facilities on Lots. Stormwater facilities within residential subdivisions that serve multiple lots and/or a combination of lots and roadways shall be on a lot owned and maintained by an entity of common ownership. Stormwater practices located on individual lots shall be maintained by the lot owner, or, at the discretion of the director, be placed within an easement and maintained by an entity of common ownership.

p) Hydrologic Computation Assumptions. Hydrologic parameters shall reflect the ultimate land development and shall be used in all engineering calculations. All predevelopment calculations shall consider open space, woods and fields to be in good condition, regardless of actual conditions at the time of application.

q) Authorization to Discharge to MS4. If runoff from a land development will flow to a municipal separate storm sewer system (MS4) or other publicly owned storm sewer system, then the applicant shall obtain authorization from the system's owner to discharge into the system. The director may require the applicant to demonstrate that the system has adequate capacity for any increases in peak flow rates and volumes.

r) Compliance with Federal and State Regulations. All stormwater facilities and conveyance systems shall be designed in compliance with all applicable state and federal laws and regulations, including the Federal Clean Water Act and all applicable erosion and sediment control and floodplain regulations. To the extent practical, stormwater facilities shall not be located in areas determined to be jurisdictional waters through Section 404 of the Federal Clean Water Act and/or applicable state regulations (RCW Chapter 79.105).

s) Protect Public Health, Safety and General Welfare. The design of stormwater BMPs shall consider public health, safety, and general welfare. These considerations include, but are not limited to: preventing flooding of structures and travelways; preventing standing water in facilities, manholes, inlets, and other structures in a manner that promotes breeding of mosquitoes; preventing attractive nuisance conditions and dangerous conditions due to velocity or depth of water and/or access to orifices and drops; and preventing aesthetic nuisances due to excessive slopes, cuts and fills, and other conditions.

(2) Enhanced Criteria for Impaired Waters.

a) Land development that discharges via the city's MS4 to impaired waters and wetlands with a stormwater waste load allocation, as designated in the most recent Eastern Washington Phase II municipal stormwater permit, or individual municipal stormwater permit issued to the city, by the Washington State Department of Ecology, shall meet enhanced criteria. These may include, but are not limited to:

1. Nutrient-Sensitive Waters. Enhanced control of nutrients and sediment for discharges to streams, lakes, and other water bodies with excess nutrients.
2. Cold-Water Fisheries. Control of temperature increases for discharges to designated cold-water fisheries.
3. Groundwater. Enhanced recharge and pretreatment requirements to protect groundwater supply.
4. Wetlands. The control of impacts to wetland hydrology, including limiting fluctuations to the natural or predevelopment wetland hydrology.
5. Other Impairments. Enhanced bacteriological, sediment, or pollutant controls for discharges to impaired waters.

b) In these cases, the director may require additional storage, treatment, filtering, infiltration, or other techniques. The use of nonstructural practices shall be used to the maximum extent practical to meet enhanced criteria. (Ord. 2010-08 § 1 (part), 2010).

