

# APPENDIX 1 – Minimum Technical Requirements for Stormwater Management at New Development and Redevelopment Sites

Local jurisdictions are required to adapt these Minimum Technical Requirements, and/or more stringent requirements, into local ordinances or other regulatory mechanisms no later than three years after the effective date of this permit as part of their Stormwater Management Programs to control construction and post-construction stormwater runoff. Projects proposed by the local jurisdiction's own departments and agencies must comply with these requirements.

This Appendix is adapted from Chapter 2 of the *Stormwater Management Manual for Eastern Washington* (2004), including corrections and clarifications posted to the Department's website on or before February 15, 2006, and the *Construction Stormwater General Permit* issued by the Department on November 16, 2005.

## Exemptions

The following practices are exempted from the Minimum Technical Requirements:

### Forest Practices

Forest practices regulated under Title 222 WAC are exempt. Conversions of forest lands to other uses are not exempt.

### Commercial Agriculture

Commercial agriculture practices involving working the land for production are generally exempt. However, the construction of impervious surfaces is not exempt.

### Oil and Gas Field Activities or Operations

Construction of drilling sites, waste management pits, and access roads, as well as construction of transportation and treatment infrastructure such as pipelines natural gas treatment plants, natural gas pipeline compressor stations, and crude oil pumping stations are exempt. Operators are encouraged to implement and maintain Best Management Practices to minimize erosion and control sediment during and after construction activities to help ensure protection of surface water quality during storm events.

### Road and Parking Area Preservation/Maintenance

The following road and parking area maintenance practices are exempt (see also Partial Exemptions below):

- Pothole and square cut patching;
- Crack sealing;
- Resurfacing with in-kind material without expanding the road prism;
- Overlaying existing asphalt or concrete pavement with bituminous surface treatment (BST or "chip seal"), asphalt or concrete without expanding the area of coverage;
- Shoulder grading;
- Reshaping/regrading drainage systems; and
- Vegetation maintenance.

## **Partial Exemptions**

The following practices are generally exempted from all of the Minimum Technical Requirements except for Core Element #1 *Preparation of a Stormwater Site Plan* and Core Element #2 *Construction Stormwater Pollution Prevention*:

### **Underground Utility Projects**

Underground utility projects that replace the ground surface with in-kind material or materials with similar runoff characteristics are subject only to Core Element #1 *Preparation of a Stormwater Site Plan* and Core Element #2 *Construction Stormwater Pollution Prevention*.

### **Road and Parking Area Preservation/Maintenance**

A preservation or maintenance project is defined as preserving/protecting infrastructure by rehabilitating or replacing existing structures to maintain operational and structural integrity, and for the safe and efficient operation of the facility. Maintenance projects do not increase the traffic capacity of a roadway or parking area. The following practices are subject only to Core Element #1 *Preparation of a Stormwater Site Plan* and Core Element #2 *Construction Stormwater Pollution Prevention*:

- Removing and replacing a concrete or asphalt roadway to base course or subgrade or lower without expanding or improving the impervious surfaces.
- Repairing the roadway base or subgrade.
- Overlaying existing gravel with bituminous surface treatment (BST or “chip seal”) or asphalt or concrete without expanding the area of coverage, or overlaying BST with asphalt, without expanding the area of coverage. For this type of project, partial exemption applies only under the following conditions:
  - For roads, these practices are exempt from additional Core Elements only if the traffic surface will be subject to an average daily traffic volume of less than 7,500 on an urban road or an average daily traffic volume of less than 15,000 vehicles on a rural road, freeway, or limited access control highway. If these thresholds are exceeded, refer to the Redevelopment section above to determine which Core Elements apply.
  - For parking areas, these practices are exempt from additional Core Elements only if the traffic surface will be subject to less than 40 trip ends per 1,000 square feet of building area or 100 total trip ends. If these thresholds are exceeded, refer to the Redevelopment section above to determine which Core Elements apply.

### **Safety Improvement Projects**

Projects to improve motorized and/or non-motorized user safety that do not enhance the traffic capacity of a roadway are subject only to Core Element #1 *Preparation of a Stormwater Site Plan* and Core Element #2 *Construction Stormwater Pollution Prevention* except as specified under sub-item (a) under conditions for applying Core Element #5 *Runoff Treatment* in the Redevelopment section above. Certain safety improvement projects such as sidewalks, bike lanes, bus pullouts and other transit improvements must be evaluated on a case-by-case basis to determine whether additional Core Elements apply. A safety project that enhances the traffic carrying capacity of a roadway is not exempt from other Core Elements. Local governments shall keep records of all projects granted exemptions to the Core Elements.

## **Local Exceptions/Variations**

### **Requirements**

Exceptions to the Core Elements may be granted by the Permittee prior to project approval and construction. The Permittee may grant an exception following an application for an exception with legal public notice per the Permittee's guidance and requirements for exceptions and variances. The Permittee's decision should include a written finding of fact.

The Permittee may grant an exception to the Core Elements if such application imposes a severe and unexpected economic hardship. To determine whether the application imposes a severe and unexpected economic hardship on the project applicant, the Permittee must consider and document with written findings of fact the following:

- The current (pre-project) use of the site, and
- How the application of the minimum requirement(s) restricts the proposed use of the site compared to the restrictions that existed prior to the adoption of the minimum requirements; and
- The possible remaining uses of the site if the exception were not granted; and
- The uses of the site that would have been allowed prior to the adoption of the minimum requirements; and
- A comparison of the estimated amount and percentage of value loss as a result of the minimum requirements versus the estimated amount and percentage of value loss as a result of requirements that existed prior to adoption of the minimum requirements; and
- The feasibility for the owner to alter the project to apply the minimum requirements.

In addition any exception must meet the following criteria:

- The exception will not increase risk 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; and
- The exception is the least possible exception that could be granted to comply with the intent of the Minimum Requirements.

If the Permittee chooses to allow jurisdiction-wide exceptions or variances to the requirements of the Manual, those exceptions must be approved by the Department. Permittees shall keep records of all local exceptions/variances to the Core Elements, pursuant to section S9 *Reporting and Record Keeping Requirements* of this Permit. Project-specific design deviations based on site-specific conditions generally do not require approval of the Department and are left to the discretion of the Permittee.

## Core Element #1: Preparation of a Stormwater Site Plan

### Requirements

All new development and redevelopment projects that meet the **regulatory threshold** and are subject to the Minimum Technical Requirements shall complete a Stormwater Site Plan (SSP) prepared in accordance with Chapter 3 of the *Stormwater Management Manual for Eastern Washington* (2004).

## Core Element #2: Construction Stormwater Pollution Prevention

Local jurisdictions may choose to allow compliance with this Core Element to be achieved for an individual site by obtaining coverage under the *General NPDES Permit for Stormwater Discharges Associated with Construction Activities* and fully implementing the requirements of that permit. Local jurisdictions may choose to allow site operators to apply an “Erosivity Waiver” to projects disturbing less than five acres that meet the requirements at the end of this section; such projects would be waived from the requirement that the jurisdiction review site plans for construction phase stormwater pollution prevention.

### Requirements

All new development and redevelopment projects are responsible for preventing erosion and discharge of sediment and other pollutants into receiving waters. Projects meeting the **regulatory threshold** and not qualifying for an Erosivity Waiver, as described at the end of this section, if allowed by the local jurisdiction, shall prepare a Stormwater Pollution Prevention Plan (SWPPP) for construction activity. The SWPPP shall be implemented beginning with initial soil disturbance and until final stabilization.

Stormwater BMPs shall be consistent with the *Stormwater Management Manual for Eastern Washington* (2004), or another technical stormwater manual approved by the Department.

Construction Stormwater Pollution Prevention Plan (SWPPP) Elements: The construction site operator shall include each of the twelve elements below in the narrative of the SWPPP and ensure that they are implemented unless site conditions render the element unnecessary and the exemption from that element is clearly justified in the SWPPP.

1. Preserve Vegetation/Mark Clearing Limits:
  - a. Prior to beginning land disturbing activities, including clearing and grading, clearly mark all clearing limits, sensitive areas and their buffers, and trees that are to be preserved within the construction area.
  - b. The duff layer, native top soil, and natural vegetation shall be retained in an undisturbed state to the maximum degree practicable.
2. Establish Construction Access:
  - a. Construction vehicle access and exit shall be limited to one route, if possible.
  - b. Access points shall be stabilized with quarry spalls, crushed rock or other equivalent BMP to minimize the tracking of sediment onto public roads.
  - c. Wheel wash or tire baths shall be located on site, if the stabilized constructions entrance is not effective in preventing sediment from being tracked onto public roads.

- d. If sediment is tracked off site, roads shall be cleaned thoroughly at the end of each day, or more frequently during wet weather. Sediment shall be removed from roads by shoveling or pickup sweeping and shall be transported to a controlled sediment disposal area.
  - e. Street washing is allowed only after sediment is removed in accordance with 2.d, above. Street wash wastewater shall be controlled by pumping back on site or otherwise be prevented from discharging into systems tributary to waters of the state.
3. Control Flow Rates:
- a. Properties and waterways downstream from development sites shall be protected from erosion due to increases in the velocity and peak volumetric flow rate of stormwater runoff from the project site, as required by the local jurisdiction.
  - b. Where necessary to comply with 3.a, above, stormwater retention or 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).
  - c. If permanent infiltration ponds are used for flow control during construction, these facilities should be protected from siltation during the construction phase.
4. Install Sediment Controls:
- a. Stormwater runoff from disturbed areas shall pass through a sediment pond, or other appropriate sediment removal BMP, prior to leaving a construction site or prior to discharge to an infiltration facility. Runoff from fully stabilized areas may be discharged without a sediment removal BMP, but shall meet the flow control performance standard of 3.a, above.
  - b. Sediment control BMPs (sediment ponds, traps, filters, etc.) shall be constructed as one of the first steps in grading. These BMPs shall be functional before other land disturbing activities take place.
  - c. BMPs intended to trap sediment on site shall be located in a manner to avoid interference with the movement of juvenile salmonids attempting to enter off-channel areas or drainages.
5. Stabilize Soils:
- a. Exposed and unworked soils shall be stabilized by application of effective BMPs that prevent erosion.
  - b. No soils shall remain exposed and unworked for more than the time periods set forth below:
    - At sites with mean annual precipitation greater than or equal to 12 inches:
      - 10 days during the dry season (July 1 through September 30)
      - 5 days during the wet season (October 1 through June 30)
    - At sites with mean annual precipitation less than 12 inches:
      - 30 days during the dry season (July 1 through September 30)
      - 15 days during the wet season (October 1 through June 30)

The time period(s) may be adjusted by a local jurisdiction, if the jurisdiction can show that local precipitation data justify a different standard.

- c. Soils shall be stabilized at the end of the shift before a holiday or weekend if needed based on the weather forecast.
  - d. Soil stockpiles must be stabilized from erosion, protected with sediment trapping measures, and where possible, be located away from storm drain inlets, waterways and drainage channels.
6. Protect Slopes:
- a. Design and construct cut and fill slopes in a manner that will minimize erosion.
  - b. Off-site stormwater (run-on) or groundwater shall be diverted away from slopes and undisturbed areas with interceptor dikes, pipes and/or swales. Off-site stormwater should be managed separately from stormwater generated on the site.
  - c. At the top of slopes, collect drainage in pipe slope drains or protected channels to prevent erosion. Temporary pipe slope drains shall handle the expected peak flow velocity from a 6-month, **short duration storm** for the developed condition.
  - d. Excavated material shall be placed on the uphill side of trenches, consistent with safety and space considerations.
  - e. Check dams shall be placed at regular intervals within constructed channels that are cut down a slope.
7. Protect Drain Inlets:
- a. Storm drain inlets made operable during construction shall be protected so that stormwater runoff does not enter the conveyance system without first being filtered or treated to remove sediment.
  - b. Inlet protection devices shall be cleaned or removed and replaced when sediment has filled one-third of the available storage (unless a different standard is specified by the product manufacturer).
8. Stabilize Channels and Outlets:
- a. All temporary on-site conveyance channels shall be designed, constructed, and stabilized to prevent erosion from the following expected peak flows. Channels shall handle the expected peak flow velocity of the 6-month, **short duration storm** for the developed condition.
  - b. Stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes, and downstream reaches shall be provided at the outlets of all conveyance systems.
9. Control Pollutants:
- a. All pollutants, including waste materials and demolition debris, that occur onsite shall be handled and disposed of in a manner that does not cause contamination of stormwater.
  - b. Cover, containment, and protection from vandalism shall be provided for all chemicals, liquid products, petroleum products, and other materials that have the potential to pose a

threat to human health or the environment. On-site fueling tanks shall include secondary containment.

- c. Maintenance, fueling and repair of heavy equipment and vehicles shall be conducted using spill prevention and control measures. Contaminated surfaces shall be cleaned immediately following any spill incident.
- d. Wheel wash or tire bath wastewater shall be discharged to a separate on-site treatment system or to the sanitary sewer with local sewer district approval.
- e. Application of 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' label requirements for application rates and procedures shall be followed.
- f. BMPs shall be used to prevent or treat contamination of stormwater runoff by pH modifying sources. 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, dewatering concrete vaults, concrete pumping and mixer washout waters. The Permittee shall require construction site operators to adjust the pH of stormwater if necessary to prevent violations of water quality standards.
- g. The Permittee shall require construction site operators obtain written approval from the Department prior to using chemical treatment other than CO<sub>2</sub> or dry ice to adjust pH.

10. Control De-Watering:

- a. Foundation, vault, and trench de-watering water, which have 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.
- b. Clean, non-turbid de-watering water, such as well-point ground water, can be discharged to systems tributary to, or directly into surface waters of the state, as specified above in #8 *Stabilize Channels and Outlets*, provided the de-watering flow does not cause erosion or flooding of receiving waters. Clean de-watering water should not be routed through stormwater sediment ponds.
- c. Other de-watering disposal options may include: (i) infiltration; (ii) transport offsite in vehicle, such as a vacuum flush truck, for legal disposal in a manner that does not pollute state waters; (iii) On-site chemical treatment or other suitable treatment technologies approved by the local jurisdiction; (iv) sanitary sewer discharge with local sewer district approval, if there is no other option; or (v) use of a sedimentation bag with outfall to a ditch or swale for small volumes of localized de-watering.
- d. Highly turbid or contaminated dewatering water shall be handled separately from stormwater.

11. Maintain BMPs:

- a. All temporary and permanent erosion and sediment control BMPs shall be maintained and repaired as needed to assure continued performance of their intended function in accordance with BMP specifications.

- b. 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.

12. Manage the Project:

- a. Development projects shall be phased to the maximum degree practicable and shall take into account seasonal work limitations.
- b. The Local Jurisdiction must require construction site operators to maintain, and repair as needed, all sediment and erosion control BMPs to assure continued performance of their intended function.
- c. The Local Jurisdiction must require construction site operators to periodically inspect their sites. Site inspections shall be conducted by a Certified Erosion and Sediment Control Lead who shall be identified in the SWPPP and shall be present on-site or on-call at all times.
- d. The Local Jurisdiction must require construction site operators to maintain, update and implement their SWPPP. Local Jurisdictions shall require construction site operators to modify their SWPPP whenever there is a change in design, construction, operation, or maintenance at the construction site that has, or could have, a significant effect on the discharge of pollutants to waters of the state.

***Erosivity Waiver***

The local jurisdiction may allow construction site operators to qualify for a waiver from the requirement to submit a SWPPP for local jurisdiction review if the following conditions are met:

1. The site will result in the disturbance of less than 5 acres; and the site is not a portion of a common plan of development or sale that will disturb 5 acres or greater; and
2. The project's rainfall erosivity factor ("R" Factor) is less than 5 during the period of construction activity, as calculated using the Texas A&M University online rainfall erosivity calculator at: <http://ei.tamu.edu/>. The period of construction activity begins at initial earth disturbance and ends with final stabilization; and
3. The entire period of construction activity falls within the following timeframe(s):
  - June 15 through October 15 for sites with mean annual precipitation of 12 inches or more; or
  - No additional timeframe restrictions apply for sites with mean annual precipitation of less than 12 inches; and
4. The site or facility has not been declared a significant contributor of pollutants; and
5. There are no planned construction activities at the site that will result in non-stormwater discharges; and
6. The waiver is allowed by the local jurisdiction; and
7. The construction site operator notifies the local jurisdiction of the intention to apply this waiver at least one week prior to commencing land disturbing activities. The notification must include a summary of the project information used in calculating the project's rainfall erosivity factor (see #2 above) and a certified statement that:

- The operator will comply with applicable local stormwater requirements; and
- The operator will implement appropriate erosion and sediment control BMPs to prevent violations of water quality standards.

### **Core Element #3: Source Control of Pollution**

#### **Requirements**

All new development and redevelopment projects meeting the **regulatory threshold** shall apply all known, available and reasonable source control BMPs. Operational and structural source control BMPs shall be selected, designed, and maintained according to Chapter 8 of the *Stormwater Management Manual for Eastern Washington* (2004) or another technical stormwater manual approved by the Department.

### **Core Element #4: Preservation of Natural Drainage Systems**

#### **Requirements**

All new development and redevelopment projects meeting the **regulatory threshold** must preserve natural drainage systems to the extent possible at the site.

The manner by which runoff is discharged from the project site must not cause a significant adverse impact to downstream receiving waters and down-gradient properties and should be addressed as part of the off-site analysis described in Appendix 3A of the *Stormwater Management Manual for Eastern Washington* (2004).

All outfalls must address energy dissipation as necessary. A project proponent who believes that energy dissipation should not be required for a new outfall must provide justification in the project's stormwater site plan or drainage study report.

### **Core Element #5: Runoff Treatment**

#### **Requirements**

Runoff treatment is required for projects meeting the **regulatory threshold** when the technical thresholds/requirements below for Basic Treatment, Metals Treatment, Oil Treatment, or Phosphorus Treatment are met. Treatment facilities shall be selected, designed, sized, constructed, operated and maintained in accordance with this Core Element and the guidance in Chapters 4 and 5 of the *Stormwater Management Manual for Eastern Washington* (2004), or another technical stormwater manual approved by the Department.

All Permittees must require runoff treatment facilities to be sized for the applicable design storm(s) described in this section: each jurisdiction must identify a preferred method or methods for sizing treatment facilities or provide alternative guidance. All runoff treatment facilities must be sized for the entire flow that is directed to them.

When Core Element #5 *Runoff Treatment* is required, Core Element #7 *Operation and Maintenance* also is required.

#### ***Basic Treatment***

Basic runoff treatment (to remove solids) is required for all **new development** projects creating 5,000 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 the *Stormwater Management Manual for Eastern Washington* (2004), or another technical stormwater manual approved by the Department).

Basic runoff treatment is required for **redevelopment** projects creating 5,000 square feet or more of **PGIS** where:

- 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
- The project takes place at a commercial site with outdoor storage or transfer of solid raw materials or treated wood products, or
- A need for additional stormwater control measures has been identified through a TMDL or other water cleanup plan or other planning process, or
- The project takes place at a **high-use site**, or
- 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 7,500 or more vehicles.
  - The project replaces and/or improves the surface of a parking area where the projected number of **trip ends** exceeds 40 per 1,000 square feet of building area or 100 total trip ends per day.
  - The project replaces and/or improves the surface of an **urban road** where the projected ADT is 7,500 or more vehicles per day.
  - The project replaces and/or improves the surface of a **freeway** or **rural road** where the projected ADT is 15,000 or more vehicles per day.
  - The project affects the area within 500 feet of a controlled intersection on a limited access control highway with projected ADT of 7,500 or more vehicles per day. Only this area must be treated.

Exceptions: **Non-pollutant generating impervious surface** (NPGIS) areas 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.

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 <5,000 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.

Preservation/maintenance projects and some improvement or safety enhancement projects that do not increase motorized vehicular capacities as defined in the sections “Exemptions” and “Partial Exemptions” above are exempt from Basic Treatment Requirements.

Certain exemptions may exist for Category 4 wetlands (see the section “Use of Existing Wetlands to Provide Runoff Treatment” at the end of this Core Element).

Any of these exemptions may be negated by requirements set forth in a Total Maximum Daily Load (TMDL) or other water cleanup plan.

### ***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:

- 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.
- On-street parking areas of municipal streets in commercial and industrial areas.
- Highway rest areas.
- Runoff from metal roofs not coated with an inert, non-leachable material.

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:

- An additional need for stormwater control measures to remove metals has been identified through a TMDL or other water cleanup plan, or
- The project takes place at an industrial site that is subject to benchmark monitoring for metals.

Exceptions: Unless a specific water quality problem has been identified, the following discharges are exempt from metals treatment requirements:

- Discharges to non-fish-bearing streams.
- Direct discharges to the main channels of the following rivers and direct discharges to the following lakes: Banks Lake, Lake Chelan, Columbia River, Grande Ronde River, Kettle River, Klickitat River, Methow River, Moses Lake, Potholes Reservoir, Naches River, Okanogan River, Pend Oreille River, Similkameen River, Snake River, Wenatchee River, and Yakima River.
- Subsurface discharges, unless identified as hydraulically connected to surface waters of the State.
- Restricted residential and employee-only parking areas, unless subject to through traffic.

Preservation/maintenance projects and some improvement or safety enhancement projects that do not increase motorized vehicular capacities as defined in the sections “Exemptions” and “Partial Exemptions” above are exempt from Metals Treatment Requirements.

Certain exemptions may also apply to Category 4 wetlands (see “Use of Existing Wetlands to Provide Runoff Treatment” at the end of this section).

Any of these exemptions may be negated by requirements set forth in a Total Maximum Daily Load (TMDL) or other water cleanup plan.

***Oil Treatment***

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 (see Chapter 8 of the Stormwater Management Manual for Eastern Washington) 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 per this Core Element.

Separator technologies for oil treatment are required only for the following high-use sites:

- High-density intersections with expected ADT of 25,000 or more vehicles on main roadway and 15,000 or more vehicles on any intersecting roadway,
- Non-employee parking areas of commercial or industrial sites with trip end counts greater than 100 vehicles per 1,000 SF gross building area,
- Areas of commercial and industrial sites subject to use, storage, or maintenance of a fleet of 25 or more vehicles that are over ten tons gross weight,
- Fueling stations and facilities, and
- Sites subject to petroleum transfer in excess of 1,500 gallons per year, not including routinely delivered heating oil.

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:

- A customer or visitor parking lot with an expected trip end count equal to or greater than 300 vehicles (best professional judgment should be used in comparing this criterion with the preceding criterion); and
- Commercial on-street parking areas on streets with an expected total ADT count equal to or greater than 7,500; or

**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 30,000 as long as they are inspected/maintained/cleaned at least once per year or more frequently as needs are identified.

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.

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.

Exceptions: Preservation/maintenance projects and some improvement or safety enhancement projects that do not increase motorized vehicular capacities as defined in the sections “Exemptions” and “Partial Exemptions” above are exempt from Oil Treatment Requirements.

Any of these exemptions may be negated by requirements set forth in a Total Maximum Daily Load (TMDL) or other water cleanup plan.

### ***Phosphorus Treatment***

Requirements: Phosphorus treatment is required only where federal, state, or local government has determined that a water body is sensitive to phosphorus and that a reduction in phosphorus from new development and redevelopment is necessary to achieve the water quality standard to protect its beneficial uses. Where it is deemed necessary, a strategy shall be adopted to achieve the reduction in phosphorus.

### ***Treatment Facility Selection***

Treatment facilities must be selected in accordance with the guidance in Chapter 5 of the *Stormwater Management Manual for Eastern Washington* (2004), or another technical stormwater manual approved by the Department, to meet the treatment requirements identified for the project’s proposed land use and site conditions.

### ***Treatment Facility Sizing***

Each treatment BMP is sized based on a water quality design volume, or a water quality design flow rate. Permittees shall adopt criteria to provide for consistent sizing of treatment facilities. Computational methods for predicting runoff volumes and flow rates for a proposed development condition are included in Chapter 4 of the *Stormwater Management Manual for Eastern Washington* (2004). Specific design criteria for treatment facilities may be taken from Chapter 5 of the *Stormwater Management Manual for Eastern Washington* (2004) or another technical stormwater manual approved by the Department. Specifically, public road projects may be designed using BMPs in the current version of the Washington State Department of Transportation *Highway Runoff Manual* approved by the Department.

Water quality design volume: Each Permittee shall specify which of the following methods will be used to determine treatment volumes in their jurisdiction. Different methods may be specified for different types of projects. Volume-based treatment BMPs are sized the same whether located upstream or downstream from detention facilities.

- *Runoff Volume Method 1*: The volume of runoff predicted for the proposed development condition from the regional storm with a 6-month return frequency. An alternative to this method is the modified Type IA storm described in Chapter 4.2 of the *Stormwater Management Manual for Eastern Washington* (2004); this alternative method is intended for use on small projects where the designer’s software does not accept storms longer than 24 hours.

- *Runoff Volume Method 2:* The volume of runoff predicted for the proposed development condition from the SCS Type IA 24-hour storm with a 6-month return frequency.
- *Runoff Volume Method 3:* In Regions 2 and 3, volume-based facilities may be sized for 0.5 inch predicted runoff produced for the proposed development condition from all impervious surface areas that contribute flow to the treatment facility. (This method may be modified for design of BMP T5.30 Bio-infiltration swale in Chapter 5 of the *Stormwater Management Manual for Eastern Washington* (2004).)
- *Runoff Volume Method 4:* The volume of runoff predicted for the proposed development condition from the SCS Type II storm with a 6-month return frequency.
- *Runoff Volume Method 5:* Another sizing approach and criteria based on peer-reviewed methods and supported by local data that meet the objective of treating at least 90% of the annual volume of runoff from the site. Snowmelt should be considered in determining the water quality design volume if this method is selected.

Water quality design flow rate: Flow-rate-based treatment BMPs are sized differently depending on whether they are located upstream or downstream from detention facilities, if detention is required. For runoff treatment facilities sited downstream of detention facilities, the design flow rate is the full 2-year release rate of the detention facility. For runoff treatment facilities preceding detention facilities or when detention facilities are not required, each Permittee shall specify which of the following methods will be used to determine flow rates in their jurisdiction. Different methods may be specified for different types of projects. For large facilities receiving inflow from multiple sources, the flow rate generated by the regional or Type IA storm should also be checked.

- *Flow Rate Method 1:* The runoff flow rate predicted for the proposed development condition from the short-duration storm with a 6-month return frequency. Time intervals for some facilities are specified in the BMP design requirements in Chapter 5 of the *Stormwater Management Manual for Eastern Washington* (2004).
- *Flow Rate Method 2:* The runoff flow rate predicted for the proposed development condition from the SCS Type II 24-hour storm with a 6-month return frequency. Time intervals for some facilities are specified in the BMP design requirements in Chapter 5 of the *Stormwater Management Manual for Eastern Washington* (2004).
- *Flow Rate Method 3:* The runoff flow rate for the proposed development condition calculated by the Rational Method using the 2-year Mean Recurrence Interval (see Chapter 4.7 of the *Stormwater Management Manual for Eastern Washington* (2004)). This method may only be used to design facilities based on instantaneous peak flow rates.

### ***Bypass Requirements***

A bypass must be provided for all treatment BMPs unless the facility is able to convey the 25-year short-duration 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. The designer must: check the maximum allowable velocity (typically less than 2 ft/s) or shear stress specified for the BMP; and implement a flow bypass as necessary to prevent exceeding these velocities. Bypass is not recommended for wet ponds, constructed wetlands, and similar volume-based treatment facilities; inlet structures for these facilities should be designed to dampen velocities; the pond dimensions will further dissipate the energy.

### ***Use of Existing Wetlands to Provide Runoff Treatment***

Stormwater treatment facilities are not allowed within a wetland or its natural vegetated buffer except for:

- Necessary conveyance systems approved by the local government; or
- As allowed in a wetland mitigation plan; or
- When the requirements below are met.

A wetland can be considered for use in stormwater treatment if:

- The wetland meets the criteria for “Hydrologic Modification of a Wetland” in Core Element #6 Flow Control; and either
- It is a Category 4 wetland according to the *Eastern Washington Wetland Rating System*; or
- It is a Category 3 wetland according to the *Eastern Washington Wetland Rating System* and the wetland has been previously disturbed by human activity, as evidenced by agriculture, fill areas, ditches *or* the wetland is dominated by introduced or invasive weedy plant species as identified in the rating analysis.

Basic treatment is required prior to discharge to Category 3 wetlands; a Category 3 wetland that meets the above requirements may be used to meet metals treatment requirements. Oil control is required for a discharge to wetlands if the Technical Thresholds/Requirements are met.

Mitigation shall be required for the impact of using a wetland as a stormwater treatment facility. Appropriate measures include enhancement, expansion and/or preservation of a buffer around the wetland.

## **Core Element #6: Flow Control**

### **Requirements**

New development projects that meet the **regulatory threshold** and result in 10,000 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 according to criteria established by the local jurisdiction.

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.

When Core Element #6 *Flow Control* is required, Core Element #7 *Operation and Maintenance* also is required.

### **Exemptions**

Direct discharges to the following surface waters are exempt from flow control requirements to protect stream morphology:

1. Any river or stream that is:
  - Fifth order or greater as determined from a 1:24,000 scale map; or

- Fourth order or greater as determined from a 1:100,000 or larger scale map.

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

2. Any lake or reservoir with a contributing watershed area greater than 100 square miles.
3. 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.
4. Streams that flow only during runoff-producing events. The runoff carried by the stream following the 2-year, Type IA rainfall event must not discharge via surface flow to a non-exempt 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.

### ***Hydrologic Modification of a Wetland***

A wetland receiving stormwater from a new development or redevelopment project can be considered for **hydrologic modification** if it is a Category 3 or Category 4 wetland according to the *Eastern Washington Wetland Rating System* and:

- There is good evidence that the natural hydrologic regime of the wetland can be restored by augmenting its water supply with excess stormwater runoff; or the wetland is under imminent threat exclusive of stormwater management and could receive greater protection if acquired for a stormwater management project rather than left in existing ownership; and:
- The runoff is from the same natural drainage basin; the wetland lies in the natural routing of the runoff; and the site plan allows runoff discharge at the natural location. Exceptions may be made for regional facilities planned by the local jurisdiction, but the wetland should receive water from sites in the same watershed.

Hydrologic modification 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 project proponent 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.

## **Core Element #7: Operation and Maintenance**

### **Requirements**

Where structural BMPs are required, property owners shall operate and maintain the facilities in accordance with an Operation and Maintenance (O&M) plan that is prepared in accordance with the provisions in Chapters 5 and 6 of the *Stormwater Management Manual for Eastern Washington* (2004), or another technical stormwater manual approved by the Department. The O&M plan shall address all proposed stormwater facilities and BMPs, and identify the party (or parties) responsible for maintenance and operation; the O&M plan must also address the long-term funding mechanism that will support proper O&M. At private facilities, a copy of the plan shall be retained onsite or within reasonable access to the site, and shall be transferred with the property to the new owner. For public facilities, a copy of the plan shall be retained in the

appropriate department. A log of maintenance activity that indicates what actions were taken shall be kept and be available for inspection.

Cities or Counties may develop generic O&M plans, including checklists of actions and procedures for the operators, for BMPs that are commonly used in public projects; commercial and residential property developers may also develop generic O&M plans, including checklists of actions and procedures for the operators, for BMPs that are commonly used in their projects.