

CHAPTER 2 – BASIC REQUIREMENTS



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2.1 INTRODUCTION

This chapter introduces the eight Basic Requirements for stormwater management for new development and redevelopment projects in the Spokane region:

- Basic Requirement No. 1 – Drainage Submittal;
- Basic Requirement No. 2 – Geotechnical Site Characterization;
- Basic Requirement No. 3 – Water Quality Treatment;
- Basic Requirement No. 4 – Flow Control;
- Basic Requirement No. 5 – Natural and Constructed Conveyance Systems;
- Basic Requirement No. 6 – Erosion and Sediment Control;
- Basic Requirement No. 7 – Source Control; and,
- Basic Requirement No. 8 – Operation and Maintenance.

The applicability of these requirements depends on the type, size and location of the project. It is the responsibility of the project proponent to become familiar with the Basic Requirements in order to determine when they are applicable.

2.1.1 REGULATORY THRESHOLD

The regulatory threshold is the “trigger” for requiring compliance with the Basic Requirements of this Manual. This threshold varies from jurisdiction to jurisdiction. In Spokane County and the City of Spokane Valley, it is defined as “the addition or replacement of 5,000 square feet or more of impervious surfaces or the disturbance of 1 acre or more.” The regulatory threshold applies to the total impervious area replaced or added at full build-out. Refer to the definition of “common plan of development or sale” to determine whether your project will trigger the regulatory threshold. In the City of Spokane, the threshold is defined as “the addition or replacement of any impervious surfaces.”

All projects proposing underground injection control (UIC) facilities must comply with UIC requirements, regardless of whether they trigger the regulatory threshold.

2.1.2 NEW DEVELOPMENT

New development is the conversion of previously undeveloped or permeable surfaces to impervious surfaces and managed landscape areas. New development occurs on vacant land or through expansion of partially developed sites.

All new development projects, regardless of whether the project meets the regulatory threshold, shall comply with the following:

- Basic Requirement No. 5 – Natural and Constructed Conveyance Systems;
- Basic Requirement No. 6 – Erosion and Sediment Control; and,
- Basic Requirement No. 7 – Source Control.

All new development projects that meet the regulatory threshold or propose UIC facilities shall comply with the following:

- Basic Requirement No. 3 – Water Quality Treatment
- Basic Requirement No. 8 – Operation and Maintenance.

All new development projects that meet the regulatory threshold shall comply with the following:

- Basic Requirement No. 1 – Drainage Submittal, unless exempted per Sections 2.1.4 or 2.1.5. All projects shall provide for stormwater management in their design regardless of whether the local jurisdiction requires a drainage submittal.
- Basic Requirement No. 4 – Flow Control (refer to Section 2.2.4 for additional information);

Review Section 2.2.2 to determine if Basic Requirement No. 2 – Geotechnical Site Characterization is applicable.

The local jurisdiction reserves the right to require compliance with any or all of the Basic Requirements regardless of the size of the project or the amount of impervious area added or replaced.

2.1.3 REDEVELOPMENT

Redevelopment is the replacement of impervious surfaces on a developed site. Redevelopment occurs when existing facilities are demolished and rebuilt or substantially improved through reconstruction. Rebuilt or reconstructed facilities are regarded in the same manner as new development (refer to Section 2.1.2) and shall generally comply with the Basic Requirements of this Manual, as applicable. On redeveloped sites where pre-existing facilities remain, the old facilities are not subject to the requirements of this Manual if they remain hydraulically isolated from the new facilities. For projects that are implemented in incremental stages, the redevelopment threshold applies to the total amount of impervious surface replaced at full build-out; the new development thresholds apply to the total amount of new impervious surfaces added at full build-out.

The long-term goal of the redevelopment standard is to reduce stormwater pollution from existing developed sites, especially when a water quality problem has been identified or the site is being improved to accommodate a use with a greater potential to contribute pollution to the receiving waters. More stringent redevelopment thresholds and requirements may be identified through a water cleanup plan such as a Total Maximum Daily Load (TMDL) study and allocation.

A project may be granted a variance when site conditions prevent full compliance with the Basic Requirements; however, every effort should still be made to find creative ways to meet the intent of the Basic Requirements. Variances will generally not be granted waiving stormwater requirements for new impervious surfaces. The local jurisdiction may allow the Basic Requirements to be met for an area with equivalent flow and pollution characteristics within the same site.

Sites with 100% existing building coverage that are currently connected to a municipally owned storm sewer or combined sewer must be evaluated on a case-by-case basis to continue to be connected without treatment; additional local requirements such as flow restrictors may also be required.

2.1.4 EXEMPTIONS

Projects are exempt from the Basic Requirements when falling under any of the following categories:

- Commercial agriculture as regulated under Revised Code of Washington (RCW) Chapter 84.34.020, except for the construction of impervious surfaces related to commercial agriculture;
- Forest practices regulated under Washington Administrative Code (WAC) Title 222, except for Class IV General Forest Practices that are conversions from timberland to other uses;
- Oil and gas field activities or operations including construction of drilling sites, waste management pits, access roads, and transportation and treatment infrastructure such as pipelines, natural gas treatment plants, natural gas pipeline compressor stations, and crude oil pumping stations;
- Actions by a public utility or any other governmental agency to remove or alleviate an emergency condition, restore utility service, or reopen a public thoroughfare to traffic;
- Records of survey, boundary (i.e. minor lot line) adjustments, and property aggregations, unless the action affects drainage tracts or easements;
- Projects that, when completed, will not have physically disturbed the land;

- Road and parking area preservation and maintenance projects such as:
 - Pothole and square cut patching;
 - Crack sealing;
 - Shoulder grading;
 - Reshaping or regrading of drainage systems;
 - Vegetation maintenance; and,
- Operation and maintenance or repair of existing facilities.

2.1.5 GENERALLY EXEMPT

The practices below are generally exempt from all of the Basic Requirements except for Basic Requirement No. 5 – Natural and Constructed Conveyance Systems, Basic Requirement No. 6 – Erosion and Sediment Control, and Basic Requirement No. 7 – Source Control. However, they may be required to comply with any or all of the Basic Requirements as determined by the local jurisdiction:

- Projects that do not meet the regulatory threshold as defined in Section 2.1.1 and do not include new UIC facilities;
- Certificates of exemption;
- Single-family residential/duplex building permits without special conditions (A surface drainage plan and other information may be required in the City of Spokane; however, a full drainage submittal is generally not required);
- Temporary use permits, unless the use could cause adverse water quality or other drainage-related impacts;
- Land-disturbing activities that do not require a permit, unless the activity could cause adverse water quality or other drainage-related impacts;
- Underground utility projects that replace the ground surface with in-kind material or materials with similar runoff characteristics;
- Projects to improve motorized or non-motorized user safety that do not increase the traffic capacity of a roadway. Certain safety improvement projects such as sidewalks, bike lanes, bus pullouts and other transit improvements shall be evaluated on a case-by-case basis to determine whether additional Basic Requirements apply. A safety project that increases the traffic-carrying capacity of a roadway is not exempt from other Basic Requirements;
- Legally non-conforming projects, except those that drain to the new construction area and drainage improvements;

- Maintenance projects that do not increase the traffic capacity of a roadway or parking area, such as:
 - Removing and replacing a concrete or asphalt roadway to base course or subgrade or lower without expanding or improving the impervious surfaces;
 - Repairing a roadway base or subgrade;
 - Resurfacing with in-kind material without expanding the area of coverage;
 - Overlaying existing asphalt or concrete pavement with bituminous surface treatment (BST, commonly referred to as chip seal), asphalt or concrete without expanding the area of coverage;
 - Overlaying existing gravel with BST, asphalt or concrete, or overlaying BST with asphalt; in either case, without expanding the area of coverage. This partial exemption only applies if the overlaid surface continues to drain to the existing facilities or structures and if:
 - ◆ The road traffic surface will be subject to an average daily traffic (ADT) volume of less than 7,500 on an urban road or less than 15,000 on a rural road, freeway, or limited access control highway;
 - ◆ The parking area traffic surface will be subject to less than 40 trip ends per 1,000 square feet of building area or 100 total trip ends; or,

2.1.6 DESIGN DEVIATION

A design deviation is an administrative approval of design elements that do not conform to or are not explicitly addressed by this Manual. Contact the local jurisdiction for specific design deviation procedures.

The requirements of this Manual represent the minimum criteria for the design of stormwater management systems. Designs that offer a superior alternative to standard measures, or creative means not yet specified in the standards, are encouraged.

Applicability

The project proponent shall request a design deviation when either of the following situations apply:

- The project proposes non-standard methods, analysis, design elements or materials; or,
- The project proposes design elements above maximum criteria or below the minimum criteria found in this Manual.

A design deviation will only be considered for review if:

- The design elements proposed do not conflict with or modify a condition of approval; and,
- The design elements proposed are based on sound engineering principles and best management practices, and are not inconsistent with the public interest in stormwater control and environmental protection.

Submittal

For consideration of a design deviation, the project proponent shall submit a design deviation request and supporting documentation. Contact the local jurisdiction for a design deviation form or acceptable alternative. The supporting documentation shall include sufficient information for the local jurisdiction to make a decision as to the adequacy of the proposed facility or design. If infiltration is proposed, negative impacts on down-gradient properties are of concern, or seasonal high groundwater is suspected, then a geotechnical site characterization shall be submitted as part of the design deviation package. The design deviation package shall demonstrate that:

- There are special physical circumstances or conditions affecting the property that may prohibit the application of some of the Basic Requirements in this Manual;
- Every effort has been made to find alternative ways to meet the objectives of the Basic Requirements;
- Approving the design deviation will not cause adverse impact on down-gradient properties, public health or welfare; and,
- Approving the design deviation will not adversely affect the recommendations of any applicable comprehensive drainage plan.

2.2 BASIC REQUIREMENTS

2.2.1 BASIC REQUIREMENT NO. 1 – DRAINAGE SUBMITTAL

Objective

Projects are expected to demonstrate compliance with all applicable Basic Requirements through the preparation of a Drainage Submittal. The Drainage Submittal shall include road and drainage construction plans, a drainage report that describes the proposed measures to dispose of stormwater, and other supporting documentation as needed. The contents of the Drainage Submittal will vary with the

type, size and location of the project, individual site characteristics, and requirements of the local jurisdiction.

The local jurisdiction reviews the Drainage Submittal for compliance with this Manual and other applicable standards. Specific requirements for the Drainage Submittal are discussed in Chapter 3.

Applicability

A Drainage Submittal is generally required for any land-disturbing activity. Land-disturbing activities are those that result in a change in the existing soil cover (both vegetative and non-vegetative) or site topography. The sections below summarize the types of activities that require a Drainage Submittal, as well as those that are exempt.

A drainage submittal is always required for the following types of activities:

- Projects that meet the regulatory threshold as defined in Section 2.1.1 or propose UIC facilities;
- Plats and binding site plans; and,
- Manufactured and mobile home parks.

A drainage submittal is generally required for the following types of activities:

- Commercial building permits including institutional and multi-family residential projects;
- Short plats;
- Change of use permits;
- Conditional use permits;
- Grading permits; and,
- Public or private road projects.

The following types of activities are generally exempt from the requirement to prepare a drainage submittal:

- Certificates of exemption;
- Single-family residential/duplex building permits (A surface drainage plan and other information may be required in the City of Spokane, however a full drainage submittal is generally not required);
- Temporary use permits, unless the use could cause adverse water quality impacts or other drainage-related impacts;
- Land-disturbing activities that do not require a permit, unless the activity could cause adverse water quality impacts or other drainage-related impacts;

- Underground utility projects that replace the ground surface with in-kind material, or materials with similar runoff characteristics;
- Projects to improve motorized and/or non-motorized user safety that do not increase the traffic capacity of a roadway. Certain safety improvement projects such as sidewalks, bike lanes, bus pull-outs and other transit improvements shall be evaluated case-by-case. A safety improvement project that increases the traffic-carrying capacity is not exempt;
- Legally non-conforming projects, except those that drain to the new construction area and drainage improvements;
- Maintenance projects that do not increase the traffic-carrying capacity of a roadway or parking area, such as:
 - Removing and replacing a concrete or asphalt roadway to base course or subgrade or lower without expanding or improving the impervious surfaces;
 - Repairing a roadway base or subgrade;
 - Resurfacing with in-kind material without expanding the area of coverage;
 - Overlaying existing asphalt or concrete pavement with BST, asphalt or concrete without expanding the area of coverage;
 - Overlaying existing gravel with BST, asphalt or concrete, or overlaying BST with asphalt; in either case without expanding the area of coverage. This partial exemption only applies if the overlaid surface continues to drain to the existing facilities or structures and if:
 - ◆ The road traffic surface will be subject to an ADT volume of less than 7,500 on an urban road or less than 15,000 on a rural road, freeway or limited access control highway; or,
 - ◆ The parking area traffic surface will be subject to less than 40 trip ends per 1,000 square feet of building area or 100 total trip ends; or,

The following types of activities are exempt from the requirement to prepare a drainage submittal:

- Commercial agriculture as regulated under RCW Chapter 84.34.020, except for the construction of impervious surfaces related to commercial agriculture;
- Forest practices regulated under WAC Title 222, except for Class IV General Forest Practices that are conversions from timberland to other uses;

- Oil and gas field activities or operations, including construction of drilling sites, waste management pits, access roads, and transportation and treatment infrastructure such as pipelines, natural gas treatment plants, natural gas pipeline compressor stations and crude oil pumping stations;
- Actions by a public utility or any other governmental agency to remove or alleviate an emergency condition, restore utility service, or reopen a public thoroughfare to traffic;
- Records of survey, boundary line adjustments, and property aggregations, unless the action affects drainage tracts and easements;
- Operation and maintenance or repair of existing facilities; and,
- Road and parking area preservation/maintenance projects, such as:
 - Pothole and square-cut patching;
 - Crack sealing;
 - Shoulder grading;
 - Reshaping or regrading drainage system; or,
 - Vegetation maintenance.

2.2.2 BASIC REQUIREMENT NO. 2 – GEOTECHNICAL SITE CHARACTERIZATION

Objective

A geotechnical site characterization (GSC) is required to demonstrate suitability for stormwater disposal and to determine sub-level structure construction feasibility. A geotechnical engineer shall perform the study in accordance with the criteria specified in Chapter 4.

Applicability

A GSC will be required for most projects. The scope and geographic extent of the investigation may vary depending on the general location and setting of the site, the characteristics of the target soil deposits, and whether there are known or anticipated drainage problems in the vicinity of the site.

A GSC is required for:

- Projects proposing infiltration (drywells, detention facilities receiving credit for pond bottom infiltration, etc.) or non-standard drainage systems;

- Projects located in a Special Drainage Area (SDA) or Special Drainage District (SDD);
- Projects located within or draining to a problem drainage area or study area as recognized by the local jurisdiction;
- Projects with administrative conditions requiring a GSC; or,
- Projects with proposed sub-level structures, as required by the local jurisdiction.

In areas where there has been a long-standing record of satisfactory performance of standard subsurface disposal facilities and no drainage problems are known to exist, the minimum requirements found in Section 4.3 may be reduced or waived after a formal written request from the project proponent's engineer has been reviewed and accepted by the local jurisdiction.

2.2.3 BASIC REQUIREMENT NO. 3 – WATER QUALITY TREATMENT

Objective

Water quality treatment is required to reduce pollutant loads and concentrations in stormwater and can be achieved using physical, biological, and chemical removal. An analysis of the proposed land use at the project site is used to determine the pollutants of concern and the appropriate treatment methods to apply.

The most effective basic treatment best management practices (BMPs) remove about 80% of the total suspended solids contained in the runoff treated and a much smaller percentage of the dissolved pollutants. Additional treatment to remove oil, metals, and/or phosphorus from stormwater runoff may be required.

The BMPs described in Chapter 6 are designed to reduce or eliminate certain pollutants. For discharges to UIC facilities, the selected BMPs must remove or reduce the target pollutants to levels that will comply with state groundwater quality standards when the discharge reaches the water table or first comes into contact with an aquifer (see WAC 173-200). Discharges to surface waters shall comply with WAC 173-201A, Water Quality Standards for Surface Waters of the State of Washington.

The goal of this Manual is for stormwater facilities to treat approximately 90% of the annual runoff from the pollutant-generating impervious surfaces (PGIS) at a project site. The total quantity of pollutants removed from the stormwater will vary greatly from site to site based on precipitation patterns, land use, effectiveness of source control, and operation and maintenance of the treatment facilities. When required, treatment facilities shall be designed according to the criteria specified below and in Chapter 6.

Design Criteria

The 6-month NRCS (Natural Resources Conservation Service) Type II 24-hour storm event is the water quality design storm for both volume-based and flow rate-based water quality BMPs. Please refer to Chapter 5 for complete design guidance.

Applicability

Any exemptions for this Basic Requirement are superseded by requirements set forth in any applicable total maximum daily load (TMDL) or other water cleanup plan. At the time of the writing of this Manual, no TMDLs exist for water bodies in Spokane County. Contact the local jurisdiction for current information on whether any TMDLs have been issued.

Basic Treatment Applicability: Basic treatment provides removal of total suspended solids (TSS) and is required for all projects proposing UIC facilities that are:

- Located within the moderate or high susceptibility areas of the Critical Aquifer Recharge Area (CARA);
- Located within Township 26 North Range 43 East (excluding the delineated low susceptibility areas isolated in the northeast corner of this Township and Range);
- Located within a 1,000-foot radius of Group A and Group B wells without reported plans;
- Located within a Department of Health approved wellhead protection area;
- Proposing a moderate-use, high-use or high-ADT site and located in the low or moderate susceptible areas of the CARA;
- Located within the Aquifer Sensitive Area (ASA) boundaries; or
- Located within the City of Spokane.

Basic treatment is also required for all projects:

- Meeting the regulatory threshold and discharging to waters of the state, including perennial and seasonal streams, lakes and wetlands;
- Requiring a 401 Water Quality Certification; or,
- Regulated to provide water quality treatment under other rules outside of Phase II jurisdictions.

Basic treatment is not required for:

- Non-pollutant generating impervious surface (NPGIS) areas unless the runoff from these areas is hydraulically connected to PGIS areas;

- Projects that discharge to the subsurface and are located within the low susceptibility areas of the CARA and are not proposing moderate-use, high-use, or high-ADT sites; or,
- Projects discharging non-waste fluids from roofs (WAC 173-218) directly to drywells.

Oil Control Applicability: All projects that meet the regulatory threshold and are high-use or high-ADT areas are required to provide oil control. High-use sites generate high concentrations of petroleum hydrocarbons due to high traffic turnover or the frequent transfer of oil and/or other petroleum products.

High-use sites and high-ADT roadways and parking areas shall treat runoff from the high-use portion of the site 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, as long as the flow from that area is separated; otherwise the treatment controls shall be sized for the entire area.

Non-high-use sites and non-high ADT sites are exempt from oil treatment requirements.

Metals Treatment Applicability: Metals treatment is required for all projects that are moderate- or high-use sites, and for sites that discharge to a surface water or UIC facility and meet any of the following definitions:

- Industrial sites as defined by the EPA (40 CFR 122.26(b)(14)) with benchmark monitoring requirements for metals;
- Industrial sites that handle, store, produce, or dispose of metallic products or other materials, particularly those containing arsenic, cadmium, chromium, copper, lead, mercury, nickel or zinc;
- High-use or high-ADT roadways or parking areas;
- Urban roads with expected ADT greater than 7,500;
- Rural roads or freeways with expected ADT greater than 15,000;
- Commercial or industrial sites with an equivalent trip end (ETE) count equal to or greater than 40 vehicles per 1,000 square feet of gross building area;
- Parking lots with 100 ETE or more;
- Public on-street parking in commercial and industrial zones;
- Highway rest areas;
- Runoff from metal roofs not coated with an inert, non-leachable material; or

- Discharge to a surface water of the state that has been identified through a TMDL or other water clean-up plan as requiring metals removal.

Stormwater runoff is exempt from metals treatment requirements in the following situations, unless a specific water quality problem has been identified:

- Discharges to non-fish bearing streams;
- Subsurface discharges, unless identified as hydraulically connected to surface waters of the State; the Spokane Valley Rathdrum Prairie Aquifer is hydraulically connected to a surface water 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; and,
- Discharges to some Category 4 wetlands; contact the Washington Department of Ecology for additional information

Phosphorus Treatment Applicability: Phosphorus treatment is required where it has been determined by the federal, state, or local government 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 will be adopted to achieve the reduction in phosphorus. The strategy will be based on knowledge of the sources of phosphorus and the effectiveness of the proposed methods of removing phosphorus.

Phosphorus treatment may be required for water bodies reported under Section 305(b) of the Clean Water Act and for those listed in Washington State's Non-point Source Assessment required under Section 319(a) of the Clean Water Act.

The Spokane River has been designated as not supporting beneficial uses due to phosphorus, and phosphorus treatment may be required.

Projects that do not propose to discharge to a water body sensitive to phosphorus are exempt from phosphorus treatment requirements.

2.2.4 BASIC REQUIREMENT NO. 4 – FLOW CONTROL

Objective

Flow control facilities are necessary to protect stream morphology and habitat and to mitigate potential adverse impacts on down-gradient properties and floodplains due to the increase in stormwater runoff caused by land development.

Unless specifically approved by the local jurisdiction, the peak rate and volume of stormwater runoff from any proposed land development to any natural or constructed point of discharge downstream shall not exceed the pre-development peak rate or volume of runoff. A down-gradient analysis demonstrating that there will be no expected adverse impacts on downgradient properties will be required (refer to Section 3.4.5 for down-gradient analysis criteria). Local jurisdictions reserve the right to deny a request for increased stormwater flows or to condition any approval at their sole discretion.

Exceptions with regard to rate and volume control can be made for regional facilities planned by a local jurisdiction.

When site conditions allow, infiltration is the preferred method of flow control for urban runoff. All projects are encouraged to infiltrate stormwater runoff on site to the greatest extent possible if such infiltration will not have adverse impacts on down-gradient properties or improvements. Flow control facilities shall be designed and constructed according to the criteria in Chapters 5 and 7.

Design Criteria

The NRCS Type IA 24-hour storm event is the design storm for all flow control facilities that use a surface discharge or a combined surface and subsurface system. Flow control facilities that use only infiltration into the subsurface may use either the NRCS Type IA or Type II 24-hour storm event.

Infiltration Facilities: For projects proposing infiltration, the facilities shall be designed based on the 10-year design storm event. The facility shall be designed to bypass storm events that exceed the 10-year design storm frequency and shall provide an overflow path, wherever possible, with the capacity to convey the 100-year storm event. The overflow path shall drain toward the natural discharge point of the contributing basin, such that the overflow route or termination of stormwater does not adversely impact down-gradient properties or structures.

Detention Facilities: For projects proposing to detain and release stormwater runoff, the facilities shall be designed such that the release rate does not exceed the pre-developed conditions for a range of storm events. The analysis of multiple design storms is needed to control and attenuate both low and high flow storm events.

The total post-developed discharge rate leaving the site (including bypass flow) shall be limited to the pre-development rates listed in Table 2-1. Bypass flow is the runoff that leaves the site without being conveyed through the drainage system.

**TABLE 2-1
ALLOWABLE DISCHARGE RATES**

Design Frequency (24-hour storm)	Post-Developed Discharge Rate ¹
2-year	≤ 2-year pre-developed
25-year	≤ 25-year pre-developed
100-year ² (Emergency Overflow)	Overflow route only

¹ Post-developed flow is equal to the release from detention facility plus the bypass flow

² The emergency overflow shall direct the 100-year post-developed flow safely toward the downstream conveyance system

Evaporation Facilities: For projects proposing to evaporate runoff as the means of stormwater disposal, the facilities shall be designed to control the mean annual precipitation. Design shall meet the criteria described in Section 7.7.2.

Applicability

All projects that meet the regulatory threshold shall comply with this Basic Requirement.

Projects are exempt from flow control if they discharge to any of the following:

- The Spokane River or other exempt water bodies, which are defined in the *Stormwater Management Manual for Eastern Washington* as fifth-order or greater stream channels, as determined from a 1:150,000 scale map;
- A river or stream that is fifth-order or greater as determined from a 1:24,000 scale map;
- A river or stream that is fourth-order or greater as determined from a 1:100,000 scale map;
- A stream that flows only during runoff-producing events. These streams are defined as those that do not discharge via surface flow to a non-exempt surface water following receipt of the 2-year, NRCS Type 1A, 24-hour rainfall event. In addition, for the stream to be exempt, it shall be able to carry the runoff from an average snowmelt event, but shall not have a period of base flow during a year of normal precipitation;

- A lake or reservoir with a contributing watershed areas greater than 100 square miles;
- A reservoir with outlet controls that are operated for varying discharges to the downstream reaches as for hydropower, flood control, irrigation or drinking water supplies (discharges to uncontrolled flow-through impoundments are not exempt).

In order to be exempted the discharge shall meet all of the following requirements:

- The project area must be drained by a conveyance system that consists entirely of manmade conveyance elements (i.e. pipes, ditches, outfall protection); and,
- The conveyance system must extend to the ordinary high water mark line of the receiving water, or (in order to avoid construction activities in sensitive areas) flows are properly dispersed before reaching the buffer zone of the sensitive or critical area; and,
- Any erodible elements of the conveyance system for the project area must be adequately stabilized to prevent erosion; and,
- Surface water from the project area must not be diverted from or increased to an existing wetland, stream, or near-shore habitat sufficient to cause a significant adverse impact. Adverse impacts are expected from uncontrolled flows causing a significant increase or decrease in the 1.5- to 2-year peak flow rate.

Maps shall be standard U.S. Geological Survey (USGS) maps or geographic information system (GIS) data sets derived from USGS base maps.

Floodplains

Projects proposed in or around identified Areas of Special Flood Hazard shall conform to National Flood Insurance Program and the flood ordinance of the local jurisdiction. Refer to Section 7.9.2 for specific requirements. Projects discharging to the Spokane River or other exempt water bodies shall comply with floodplain requirements.

2.2.5 BASIC REQUIREMENT NO. 5 – NATURAL AND CONSTRUCTED CONVEYANCE SYSTEMS

Objective

A conveyance system includes all natural or constructed components that collect stormwater runoff and convey it away from structures in a manner that adequately drains sites and roadways, minimizing the potential for flooding and erosion.

Engineered conveyance elements for proposed projects shall be analyzed, designed, and constructed to provide a minimum level of protection against damage to property and improvements from uncontrolled or diverted flows, flooding and erosion.

Projects shall be designed to protect certain natural drainage features including floodplains, drainageways, and natural depressions that store water or allow it to infiltrate into the ground. These features are collectively referred to as the “natural location of drainage systems” (NLDS). Preserving the NLDS will help ensure that stormwater runoff can continue to be conveyed and disposed of at its natural location. Preservation also increases the opportunity to use the predominant systems as regional stormwater facilities. Refer to Chapter 8 for more information on NLDS.

Stormwater runoff shall be discharged in the same manner and at the same location as in the pre-developed condition, unless otherwise specifically accepted by the local jurisdiction. Stormwater runoff shall not be concentrated onto down-gradient properties where sheet flow previously existed and shall not be diverted to points not receiving stormwater runoff prior to development.

Applicability

All projects shall comply with this Basic Requirement regardless of whether they meet the regulatory threshold.

Design Criteria

Natural and Constructed Channels: Constructed and natural channels shall be designed with sufficient capacity to convey, at a minimum, the depth associated with the 50-year design storm event peak flow rate plus an additional 30%, assuming developed conditions for on-site tributary areas and existing conditions for any off-site tributary areas. Refer to Chapter 8 for additional criteria.

The design shall provide bypass for storm events that exceed the above criteria and shall provide an overflow path with capacity to convey the 100-year storm event, wherever possible. The overflow path shall drain toward the natural discharge point of the contributing basin, such that the overflow route or termination of stormwater does not adversely impact down-gradient properties or structures.

Culverts: New culverts shall be designed with sufficient capacity to convey the 50-year design storm event assuming developed conditions for the on-site basin and existing conditions for the off-site basin.

New culverts shall be designed with sufficient capacity to meet the headwater and tailwater requirements in Chapter 8.

Gutters: Gutter flows in roadways shall allow for the passing of vehicular traffic during the 10-year design storm event by providing non-flooded zones. For paved

roadways, the non-flooded width requirement varies with the road classification. The design shall meet the criteria specified in Chapter 8.

Storm Drain Systems and Inlets: The Rational Method and the 10-year design storm shall be used to size the conveyance system regardless of the method used to size the disposal facility.

Enclosed systems may surcharge or overtop drainage structures for storm events that exceed the drainage facility design storm, as long as an overflow path is provided, wherever possible. The overflow path shall be capable of conveying the 100-year storm event and should either drain toward the natural discharge point of the contributing basin (preferred) or away from adjacent buildings, residences, etc. so as to avoid adverse impacts due to flooding.

2.2.6 BASIC REQUIREMENT NO. 6 – EROSION AND SEDIMENT CONTROL

Objective

During the construction phase, sediment-laden runoff can enter newly constructed or existing drainage facilities, thus reducing their infiltration or treatment capacity and their lifetime of operation, or increasing maintenance costs.

Controlling erosion and preventing sediment and other pollutants from leaving the project site during the construction phase is achievable through implementation and selection of BMPs that are appropriate both to the site and to the season during which construction takes place.

The objectives of the erosion and sediment control (ESC) Plan are to:

- Protect existing or proposed stormwater management infrastructure;
- Minimize the impacts of erosion, sedimentation and increased runoff caused by land-disturbing activities on private property, public roads and rights-of-way, and water bodies;
- Protect the health, safety and welfare of the general public (this objective shall not be construed to establish any duties to protect or benefit any particular person or class of persons); and,
- Protect water quality.

Applicability

Land-disturbing activities are activities that result in a change in existing soil cover (vegetative or non-vegetative) or site topography. Land-disturbing activities include, but are not limited to, demolition, construction, clearing and grubbing, grading and

logging. An ESC plan may not be required for all of these situations; however that does not relieve the proponent from the responsibility of controlling erosion and sediment during construction nor the liability for damage claims associated with adverse impacts on off-site properties.

The following land-disturbing activities require an ESC plan:

- Major land-disturbing activities involving 1 acre or more of disturbed area; or,
- Minor land-disturbing activities, such as grading, involving less than 1 acre of disturbed area but requiring a permit by the local jurisdiction.

An ESC plan is typically not required for the projects listed in Section 2.1.4.

An ESC plan, when required, shall be submitted with either the road and drainage plans or the permit application, prior to any land-disturbing activity. Clearing and grading activities for developments will be permitted only if conducted pursuant to an accepted site development plan that establishes permitted areas of clearing, grading, cutting, and filling. When establishing these permitted clearing and grading areas, consideration shall be given to minimizing removal of existing trees and minimizing disturbance and compaction of native soils except as needed for building purposes. These permitted clearing and grading areas and any other areas with a preservation requirement, such as critical or sensitive areas, buffers, native growth protection easement areas or tree retention areas, shall be delineated on the site plans and development site plan. ESC plans are only required to address the area of land that is subject to the land-disturbing activity for which a permit is being requested and the area of land that will serve as the stockpile or staging area for materials.

All ESC plans shall adhere to the minimum requirements specified in Chapter 9 of this Manual. Examples and descriptions of the BMPs referenced in this Manual can be found in the most current version of the *Stormwater Management Manual for Eastern Washington (SMMEW)* available online at www.ecy.wa.gov/programs/wq/stormwater/tech.html.

2.2.7 BASIC REQUIREMENT NO. 7 – SOURCE CONTROL

Objective

The intent of source control BMPs is to prevent pollutants from coming into contact with stormwater, thereby reducing the likelihood that pollutants will enter groundwater and violate water quality standards. Source control BMPs are a cost-effective means of reducing pollutant loading and concentrations in stormwater and should be a first consideration in all projects.

Applicability

All projects, unless exempted in Section 2.1.4, shall comply with this Basic Requirement. Project proponents are required to implement applicable source controls through the use of BMPs as specified in Chapter 8 of the *Stormwater Management Manual for Eastern Washington*.

A project proponent is not relieved from the responsibility of preventing pollutant release from coming in contact with stormwater, whether or not the project exceeds the regulatory threshold.

2.2.8 BASIC REQUIREMENT NO. 8 – OPERATION AND MAINTENANCE***Objective***

To ensure that stormwater control facilities are adequately maintained and properly operated, documentation describing the applicable preventive maintenance and recommended maintenance schedule shall be prepared and provided to the entity responsible for maintaining the stormwater system.

For drainage ponds and other drainage facilities outside of the public road right of way, the project proponent shall provide the financial means and arrangements for the perpetual maintenance of the drainage facilities.

Proponents shall operate and maintain the facilities in accordance with an operation and maintenance plan that meets the criteria specified in Chapter 11. The operation and maintenance plan shall also include applicable source control BMPs, as described in Chapter 10.

Applicability

All projects that meet the regulatory threshold and that propose drainage facilities or structures shall comply with this Basic Requirement. All projects that propose UIC facilities also must comply with the operation and maintenance requirements, regardless of whether they exceed the regulatory threshold.