

FACT SHEET FOR 2020 CONSTRUCTION STORMWATER GENERAL PERMIT

SUMMARY

The Washington State Department of Ecology (Ecology) is proposing to reissue the Construction Stormwater General Permit (CSWGP). The reissue will replace the permit that expires on December 31, 2020. The permit authorizes stormwater discharges, as well as a limited number of non-stormwater discharges, associated with construction activities. Construction activity refers to clearing, grading, excavating, and other land-disturbing activities that result in the disturbance of one or more acres, as well as disturbance of less than one acre of total land area that is part of a larger common plan of development or sale, if the larger common plan will ultimately disturb one acre or more. The proposed CSWGP limits the discharge of pollutants to surface waters under the authority of the Federal Water Pollution Control Act (U.S.C.S. 1251) and limits the discharge of pollutants to surface and ground water under the authority of Chapter 90.48 RCW.

This Fact Sheet is a companion document to the draft revised National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge General Permit for stormwater discharges associated with construction activity (Construction Stormwater General Permit). The proposed permit authorizes the discharge of stormwater and authorized non-stormwater associated with construction activity. This Fact Sheet explains the nature of authorized discharges, the decisions on limiting pollutants in those discharges, and the regulatory and technical bases for those decisions.

In 1990, the federal Phase I Stormwater regulations addressed construction activities that disturbed five or more acres of land as Category (x) of the definition of "stormwater discharges associated with industrial activity" (40 CFR 122.26(b)(14)(x)). Ecology issued its first stormwater general permit on November 18, 1992, covering both industrial and construction activities. When reissued in 1995, Ecology decided to move construction activities into a separate permit. The 1995 CSWGP was reissued by Ecology on October 4, 2000, with an expiration date of November 18, 2005. A number of organizations, including Puget Soundkeeper Alliance, Waste Action Project, Washington Public Employees for Environmental Responsibility, Resources for Sustainable Communities, and Citizens for a Healthy Bay, filed a Notice of Appeal on November 17, 2000. Ecology revised and reissued the 2000 permit as a condition of settling the appeal.

The draft CSWGP includes minor changes overall. More detail is available in the draft CSWGP and in this Fact Sheet. The draft permit includes basic monitoring and reporting requirements that complied with RCW 90.48.555. Although RCW 90.48.555 expired on January 1, 2015, the provisions of the code were in compliance with 40 CFR 122.44, and the draft permit retains the existing benchmarks, SWPPP, and adaptive management requirements contained in the 2015 CSWGP. As required in 40 CFR 122.44(l), the draft permit remains as stringent as the 2015 permit regarding effluent limitations, standards, and conditions. However, some permit conditions have been clarified, revised, or updated.

This Fact Sheet is a companion document to the draft of the permit only, in order to help interested parties better understand the technical issues associated with the permit. Ecology will not prepare a fact sheet to accompany the final permit; however, Ecology will respond to comments provided, and attach the response as Appendix D of this Fact Sheet.

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INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System permit program (NPDES permits), which is administered by the U.S. Environmental Protection Agency (EPA). The EPA has delegated responsibility to administer the NPDES permit program to the State of Washington on the basis of Chapter 90.48 of the Revised Code of Washington (RCW), which defines the Washington State Department of Ecology's (Ecology) authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the state include procedures for issuing general permits (Chapter 173-226 of the Washington Administrative Code [WAC]), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require a permit to be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements, which are to be included in the proposed permit. One of the requirements (WAC 173-226-110) for issuing a general permit under the NPDES permit program is the preparation of a draft permit and an accompanying Fact Sheet. The regulations also require public notice of the draft permit for at least 30 days before the proposed permit is issued (WAC 173-226-130). The fact sheet and draft permit are available for review (see Appendix A- Public Involvement of the fact sheet for more detail on the Public Notice procedures).

After the public comment period has closed, Ecology will summarize the substantive comments and prepare a response to each comment. The summary and response to comments will become part of the file on the permit. Parties submitting comments will receive a copy of Ecology's response. Comments and the resulting changes to the proposed permit will be summarized in Appendix D to the final CSWGP— Response to Comments.

BACKGROUND INFORMATION

In 1990, the Phase I Stormwater regulations addressed construction activities that disturbed five or more acres of land as Category (x) of the definition of "stormwater discharges associated with industrial activity" (40 CFR 122.26(b)(14)(x)). On November 18, 1992, Ecology issued its first stormwater general permit, which covered discharges from both industrial and construction activities. When Ecology reissued this permit in 1995, it issued separate general permits for industrial and construction activities and increased the permit cycle to five years.

Ecology reissued the construction stormwater general permit on October 4, 2000. The permit, which became effective on November 18, 2000, had no substantive changes. Only changes that made the permit consistent with the revised timeframe were made. The reissued permit became effective on November 18, 2000, with an expiration date of November 18, 2005.

Puget Soundkeeper Alliance, Waste Action Project, Washington Public Employees for Environmental Responsibility, Resources for Sustainable Communities, and Citizens for a Healthy Bay filed a Notice of Appeal on November 17, 2000. The Association of Washington Business and Washington State Department of Transportation filed motions to intervene and became parties to the case. The parties to the case entered into a settlement agreement that required Ecology to rewrite and reissue the permit with assistance from a public advisory committee. The advisory committee was comprised of business representatives, environmental organizations, and state, local, and tribal agencies and met to discuss permit development six

times between June 2002 and May 2005. Ecology developed the draft construction stormwater general permit under review with input from the advisory committee. The final permit was published and went into effect December 16, 2005.

The Associated General Contractors of Washington/Building Industry Association of Washington, Snohomish County, and Puget Soundkeeper Alliance appealed the final 2005 permit. The Pollution Control Hearings Board (PCHB) consolidated the permit conditions challenged by the three parties into PCHB Order on Summary Judgment No. 05-157, 158, and 159. Several of the 36 original appeal issues identified were resolved through motion practice before the hearing; PCHB orders on partial summary judgment were issued on October 26, 2006, November 27, 2006, January 4, 2007, and January 30, 2007. The PCHB held a hearing on February 1, 2, 5, 6, 7 and March 5, 2007. On June 4, 2007, the PCHB issued its Findings of Fact, Conclusions of Law, and Order and affirmed the 2005 final permit, but ordered Ecology to reissue the permit with several specific modifications.

Ecology reissued the construction stormwater general permit on December 1, 2010. The reissued permit became effective on January 1, 2011, with an expiration date of December 31, 2015, and included the modifications ordered by the PCHB.

On November 18, 2015, Ecology reissued the construction stormwater general permit. On December 17, 2015, the Washington Aggregate and Concrete Association, Associated General Contractors of Washington, Inland Northwest Associated General Contractors, Associated Builders & Contractors Western Washington Chapter, Associated Builders & Contractors Inland Pacific Chapter, along with Building Industry Association of Washington appealed the permit to the PCHB. Ecology entered into settlement agreement PCHB No. 15-142 to issue a permit modification for public comment. Additionally, the outcome of the 2015 appeal required Ecology to provide permit guidance on Low Impact Development (LID) facilities and off-site acreage covered under the permit. The modified permit was issued March 22, 2017, and became effective May 5, 2017. It will expire December 31, 2020.

GENERAL PERMIT APPROACH

A general permit to address stormwater issues at construction activities is an appropriate permitting approach for the following reasons:

- A general permit is an efficient method to establish the essential regulatory requirements appropriate for a broad range of construction activities.
- A general permit allows Ecology to handle the large number of construction stormwater permit applications within the state of Washington more efficiently.
- The application requirements for coverage under a general permit are far less rigorous than individual permit application requirements and hence more cost effective.
- A general permit is consistent with EPA's four-tier permitting strategy, the purpose of which is to use the flexibility provided by the Clean Water Act in designing a workable and reasonable permitting system.

A general permit is designed to provide coverage for a group of related facilities or operations of a specific industry type or group of industries. It is appropriate when the discharge characteristics are sufficiently similar, and a standard set of permit requirements can effectively provide environmental protection and comply with water quality standards for discharges. In most cases, the proposed general permit will provide sufficient and appropriate stormwater management requirements for discharges of stormwater from construction sites.

This approach recognizes that there may be instances where the general permit is not appropriate for a specific construction project. Ecology may require any discharger under the general permit to apply for and obtain an individual permit or a more specific general permit if:

- It determines that the general permit does not provide adequate assurance that water quality will be protected, or
- The project has a reasonable potential to cause or contribute to a violation of water quality standards.

WASTEWATER CHARACTERIZATION

Due to the variability of construction sites, management practices, and weather, it is not possible to characterize stormwater associated with construction activities in terms of the average rate or frequency of discharges, or the average or estimated range in pounds per day of pollutants.

Pollutants expected in the stormwater discharge from construction activity include sediment (that is, suspended solids, turbidity, etc.), pH, phosphorus, and petroleum products. These pollutants are described below.

A. Sediment. Construction activity involves operations that disturb land, such as clearing, grading, and excavating. Disturbed soils exposed to precipitation may erode, resulting in stormwater runoff contaminated with suspended sediment. Suspended sediment is the primary constituent in construction stormwater and is commonly measured as total suspended solids (TSS) and/or turbidity:

1. The total suspended solids (TSS) laboratory method measures the quantity of material suspended in water. The measure of TSS in stormwater allows for an estimation of sediment transport, which can have significant effects in downstream receiving waters.
2. Turbidity, expressed in nephelometric turbidity units (NTU), is a measure of the ability of light to penetrate the water. Turbidity is a function of the quantity of suspended solids in water. The suspended solids may affect biological functions, such as the ability of submerged aquatic vegetation to receive light and the ability of fish gills to absorb dissolved oxygen.

The surface water quality standards (Chapter 173-201A) establish turbidity standards. Table 200 (1)(e) defines the turbidity standards for different aquatic use categories in fresh water. Table 210 (1)(e) defines the turbidity standards for aquatic life in marine water. The most stringent criteria state that turbidity shall not exceed 5 NTU over background turbidity when the background turbidity is 50 NTU or less, or have more than a 10 percent increase in turbidity when the background turbidity is more than 50 NTU .

SUMMARY OF TURBIDITY DATA FROM 2005 PERMIT

Ecology staff evaluated the available “self reported” turbidity data in Ecology’s Permitting and Reporting Information System (PARIS) database for sites covered by the 2010 CSWGP, which consisted of 31,927 results for samples collected from 550 construction sites between January 1, 2011 and June 30, 2014. (A data point represents one discharge number at one time from one source, such as a construction site outfall.)

Table 1. Summary of Turbidity Data, Categorized by Disturbed Acreage

	Sites (Acres)	Turbidity (NTU)
Acreage ≥ 20		
N(sites) = 110; N (turbidity) = 13,980		
Mean	64.7	19.6
Std Dev	68.8	73.9
95%ile	168	61.0
75%ile	69.2	12.7
50%ile	43.9	6.2
25%ile	28.6	3.0
Acreage = 10 to 19.99		
N(sites) = 109; N (turbidity) = 6,569		
Mean	13.7	19.8
Std Dev	2.6	98.6
95%ile	18.0	46.9
75%ile	15.6	14.0
50%ile	13.7	6.0
25%ile	11.4	3.0
Acreage = 5 to 9.99		
N(sites) = 133; N (turbidity) = 5,615		
Mean	7.2	20.2
Std Dev	1.5	64.5
95%ile	10.0	70.1
75%ile	8.3	15.6
50%ile	7.0	7.1
25%ile	5.9	3.3
Acreage = 1 to 4.99		
N(sites) = 198; N (turbidity) = 5,763		
Mean	2.9	15.7
Std Dev	1.2	48.8
95%ile	4.7	41.6
75%ile	3.9	14.8
50%ile	3.0	6.9
25%ile	2.0	3.0

- B. pH.** Alkaline construction materials may contaminate construction stormwater resulting in high pH (greater than pH 7). Alkaline construction materials include concrete, mortar, lime, cement kiln dust (CKD), Portland cement treated base (CTB), fly ash, recycled concrete, and masonry work.

The surface water quality standard for pH is within the range of 6.5 to 8.5 standard units (su) (freshwater) or 7.0 to 8.5 su (marine water) with a human-caused variation within a range of less than 0.2 units for the aquatic use category with the most stringent pH standard. You can find the pH criteria in Chapter 173-201A WAC in Table 200 (1)(g) for fresh water, and Table 210 (1)(f) for marine water.

- C. Phosphorus.** Phosphorus is a potential constituent of construction stormwater because it occurs naturally in soils. If erosion and sediment control measures are inadequate to prevent the discharge of suspended sediment, phosphorus is likely to contaminate the stormwater. Generally, if a Permittee controls turbidity and TSS with best management practices (BMPs), it will not discharge phosphorus in a significant amount.

Total Phosphorus (TP). This criterion depends on the trophic (or nutritional) state and ambient TP of the waterbody (Lake Class waters). See Chapter 173-201A-230 WAC.

- D. Petroleum Products.** Oil, grease, and other petroleum products may contaminate stormwater if they are spilled or leaked from heavy equipment, diesel pumps, fuel tanks, or vehicles.
- E. Other Pollutants.** Historical contamination or natural soil conditions may contribute other pollutants to stormwater. Examples may include pesticides, metals (arsenic, lead, etc.), polychlorinated biphenyls (PCBs), or petroleum. The discharge of other pollutants is not authorized in the draft permit.

SEPA COMPLIANCE

New facilities must demonstrate compliance with the State Environmental Policy Act (SEPA, Chapter 43.21C RCW) before Ecology can authorize permit coverage. A modification of permit coverage for physical alterations, modifications, or additions to the construction site also requires SEPA compliance. Additional SEPA review may be necessary if the modification is outside of the scope of the initial SEPA evaluation.

DESCRIPTION OF THE RECEIVING WATER

The draft general permit applies to facilities statewide that discharge to many different receiving waters.* Stormwater may be discharged to a municipal separate stormwater sewer system, a stormwater conveyance system such as a roadside ditch, or directly to a creek, lake, pond or other surface waterbody. The discharge will enter surface waters assigned designated uses intended to protect aquatic life and human health.

In highly urbanized areas, the discharge likely enters a collection system (storm sewer, roadside ditch, etc.), and commingles with other sources of stormwater before discharging to a surface waterbody. In these urbanized locations, the receiving water is likely to be more than a small creek in size but also likely to be subject to a significant number of municipal and industrial stormwater discharges. In a more suburban setting, the receiving water is not as likely to be subject to multiple municipal and industrial stormwater discharges, but is more likely to be a small creek or intermittent stream. In both cases, the potential impact of stormwater can be significant. Ecology anticipates that the diligent implementation and maintenance of BMPs identified in the Permittee's SWPPP will result in stormwater discharges that do not cause or contribute to violations of the State's Surface Water Quality Standards (Chapter 173-201A WAC).

***Note:** the receiving water (outfall) means the surface water at the point of discharge. If the point of discharge is to a storm sewer system, either surface or subsurface, the receiving water (outfall) is the waterbody to which the storm system discharges. The point of discharge is synonymous with the sampling point. The sampling point is where construction stormwater discharges exit the project site boundary, before entering the receiving water (outfall).

CRITICAL CONDITIONS

Surface water quality-based limits are derived for the waterbody's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic waterbody uses. The factors include the flow and background level of toxic substances in the receiving water and the flow and concentration of toxic substances in the discharge. The inherent variability of storm events and stormwater discharges add complexity to defining critical conditions. Storm events are naturally occurring and affect the characteristics of both the stormwater discharge and the receiving waterbody. They vary in intensity and duration; they can be isolated events or part of storm event pattern. All these factors affect flows and water quality.

Acute conditions are changes in the physical, chemical, or biological environment which are expected or demonstrated to result in injury or death to an organism as a result of short-term exposure to the substance or detrimental environmental condition. The acute criteria for metals are one-hour concentrations not to be exceeded more than once every three years. The most likely critical stormwater conditions for acute toxicity would be a high intensity short duration storm event that occurs after a long period of no rain. Under this scenario, the receiving water experiences low flows and the stormwater has a high potential to mobilize pollutants. The critical condition for acute toxicity is most likely to occur during a summer-time or early fall storm event.

Chronic conditions are changes in the physical, chemical, or biological environment which are expected or demonstrated to result in injury or death to an organism as a result of repeated or constant exposure to a substance or detrimental environmental condition over an extended period of time. The chronic criteria for metals are four-day averages not to be exceeded more than once every three years. Since chronic exposure is over several days, the "first flush" effect that occurs after a dry period is not as likely to be significant. Chronic exposure also requires storm events that result in stormwater discharge over a four-day period. However, the critical condition is still most likely to occur after the summer drought when waterbody flows are low. Much of the stormwater that falls in a drainage basin at the beginning of the wet season will be absorbed reducing the impact on flow in the receiving waterbody. During the same time, the stormwater discharge off a developed site is likely to be in direct proportion to the storm event.

The variability of storm events makes the determination of critical conditions very difficult. Ecology believes that because summer storms occur infrequently in Washington, the critical period for stormwater discharge is in the fall when storms are more frequent and runoff becomes more consistent. This period is approximately September 1 through October 31.

NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-260) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh water (WAC 173-201A-200) and marine water (WAC 173-201A-210) in the state of Washington.

Ecology must consider the narrative criteria described in WAC 173-201A-260 when it determines permit limits and conditions. Ecology considers narrative criteria when it evaluates the characteristics of wastewater and when it implements all known, available, and reasonable methods of treatment and prevention (AKART) as described in the Proposed Permit Limits section of this Fact Sheet.

ANTIDegradation

The purpose of Washington's Antidegradation Policy (WAC 173-201A-300-330) is to:

- Restore and maintain the highest possible quality of the surface waters of Washington.
- Describe situations under which water quality may be lowered from its current condition.
- Apply to human activities that are likely to have an impact on the water quality of surface water.
- Ensure that all human activities likely to contribute to a lowering of water quality, at a minimum, apply all known, available, and reasonable methods of prevention, control, and treatment (AKART).
- Apply three Tiers of protection (described below) for surface waters of the state.

Tier I ensures existing and designated uses are maintained and protected and applies to all waters and all sources of pollution. Tier II ensures that waters of a higher quality than the criteria assigned are not degraded unless such lowering of water quality is necessary and in the overriding public interest. Tier II applies only to a specific list of polluting activities. Tier III prevents the degradation of waters formally listed as "outstanding resource waters," and applies to all sources of pollution.

Ecology considered Tier I and Tier II in this permit and determined there are no discharges under this permit to "outstanding resource waters."

Ecology always considers Tier I when it issues a permit. Applying both technology-based permit limits and water quality-based limits to point source discharges meets Tier 1 requirements and this Fact Sheet describes how the permit meets those requirements.

Tier I Antidegradation Plan

Protection and Maintenance of Existing and Designated Uses (WAC 173-201A-310) states:

- (1) Existing and designated uses must be maintained and protected. No degradation may be allowed that would interfere with, or become injurious to, existing or designated uses, except as provided for in this chapter.
- (2) For waters that do not meet assigned criteria, or protect existing or designated uses, the department will take appropriate and definitive steps to bring the water quality back into compliance with the water quality standards.
- (3) Whenever the natural conditions of a water body are of a lower quality than the assigned criteria, the natural conditions constitute the water quality criteria. Where water quality criteria are not met because of natural conditions, human actions are not allowed to further lower the water quality, except where explicitly allowed in this chapter.

[Statutory Authority: Chapters 90.48 and 90.54 RCW. WSR 03-14-129 (Order 02-14), § 173-201A-310, filed 7/1/03, effective 8/1/03.]

To comply with Tier II, the draft CSWGP proposes to continue implementing the Tier II Antidegradation Plan that was reviewed by the Pollution Control Hearings Board and affirmed on April 25, 2011 in *Findings of Fact, Conclusions of Law, and Order PCHB Nos. 09-135 through 09-141*, excerpted below:

"After hearing on the merits, the Board concludes that Ecology has complied with the Tier II antidegradation requirements, and that the previously issued Stay should be dissolved. In 2009, after discontinuance of the TAPE program, the Legislature directed Ecology to create a Stormwater Technical Resource Center to provide tools for stormwater management, as funding becomes available. RCW 90.48.545. Initial funding has allowed this effort to proceed through TAPE, and the process described in the original Fact Sheet and public notice has resumed after an initial delay. We

also give deference to Ecology's interpretation of WAC 173-201A-320(6) and how it should be applied in the context of general permits. It is reasonable and valid for Ecology to conclude that this rule allows the adaptive management scheme of the permit, combined with regular updates of the SWMM which capture new and emerging technologies, to stand as the method to comply with antidegradation requirements in the general permit context."

Tier II requirements for general permits are given in 173-201A-320(6) as follows:

- (a) Individual activities covered under these general permits or programs will not require a Tier II analysis.
- (b) The department will describe in writing how the general permit or control program meets the antidegradation requirements of this section.
- (c) The department recognizes that many water quality protection programs and their associated control technologies are in a continual state of improvement and development. As a result, information regarding the existence, effectiveness, or costs of control practices for reducing pollution and meeting the water quality standards may be incomplete. In these instances, the antidegradation requirements of this section can be considered met for general permits and programs that have a formal process to select, develop, adopt, and refine control practices for protecting water quality and meeting the intent of this section. This adaptive process must:
 - (i) Ensure that information is developed and used expeditiously to revise permit or program requirements;
 - (ii) Review and refine management and control programs in cycles not to exceed five years or the period of permit reissuance; and
 - (iii) Include a plan that describes how information will be obtained and used to ensure full compliance with this chapter. The plan must be developed and documented in advance of permit or program approval under this section.

(7) All authorizations under this section must still comply with the provisions of Tier I (WAC 173-201A-310).

Tier II Antidegradation Plan

Tier II analysis is required when new or expanded actions are expected to cause a measurable change in the quality of a receiving water that is of higher quality than the criterion designated for that waterbody in the Water Quality Standards. WAC 173-201A-320(1). WAC 173-201A-320(3) defines a measureable change as specific reductions in water quality, and defines "new or expanded actions" as "human actions that occur or are regulated for the first time."

Permit Development Process

Ecology uses a formal process to develop and reissue the CSWGP every five years. The process includes selecting, developing, adopting, and refining control practices to protect water quality and meet the intent of WAC 173-201A-320. All NPDES permits, including the CSWGP, are effective for a fixed term not to exceed five years (40 CFR §122.25). Each time Ecology reissues the CSWGP, it evaluates the effluent limits and permit conditions to determine if it should incorporate additional or more stringent requirements.

Ecology's evaluation includes a review of information on new stormwater pollution prevention and treatment practices. Ecology may incorporate these practices into the CSWGP as permit conditions or in support of effluent limits. This approach works to reduce the discharge of pollutants incrementally during each successive new five-year permit cycle. Sources of such information include, but are not limited to:

- **Public Comments and Testimony** provided during listening sessions and the public comment period on the draft permit. Ecology encourages the public to share what is working and what is not. Ecology uses this formal public process to review and refine stormwater management and control requirements in each successive permit.

- **Ecology's Stormwater Management Manuals (SWMM).** Ecology updates the SWMMs periodically based on new information and science. The updates include a public involvement process. The CSWGP requires Permittees to select BMPs from the SWMMs (or approved equivalent SWMMs). Therefore, the BMPs contained in the most recent version of the SWMMs are adopted each time the permit is reissued and used expeditiously to refine and improve the effectiveness of these stormwater controls to protect water quality and meet the intent of the anti-degradation provisions in the water quality standards.
- **Technology Assessment Protocol – Ecology (TAPE) Process.** This formal process involves reviewing and testing treatment technologies for eventual adoption into Ecology's Stormwater Management Manuals. The TAPE – Emerging Technologies Program of the Washington Stormwater Center [<http://www.wastormwatercenter.org/tape>] provides assistance to Ecology's TAPE Program by:
 - Coordinating and reviewing applications, sampling plans, and technical reports submitted to Ecology.
 - Coordinating and compiling reviews by the Board of External Reviewers (BER).
 - Working with the Stakeholder Advisory Group (SAG) to revise guidance documents and provide direction and input.
- The TAPE process stimulates the development and use of innovative stormwater technologies, used at project sites covered under the CSWGP. Ecology has another, similar, process for approval of devices that use chemical injection in the treatment of stormwater. Ecology names this process Chemical Technology Assessment Protocol– Ecology (C-TAPE). The same TAPE review staff that reviews the TAPE submittals also review the C-TAPE submittals. Ecology performs an evaluation for treatment and toxicity of the chemical. Ecology lists these devices in the same location as the TAPE devices.
- **US EPA Effluent Limitation Guidelines (ELGs).** Ecology and other permitting authorities are required to incorporate ELGs developed by US EPA into each general permit as it is renewed. On December 1, 2009, the EPA published Effluent Limitation Guidelines (ELG) and New Source Performance Standards (NSPS) to control the discharge of pollutants from construction sites. This regulation became effective on February 1, 2010. After this date, all permits issued by EPA or states must incorporate the final rule requirements. All construction sites required to obtain permit coverage must implement a range of erosion and sediment control and pollution prevention Best Management Practices (BMP). The ELGs were updated in 2014 and are reflected in this draft permit.
- **Ecology stormwater staff** (inspectors, enforcement staff, permit writers and engineers) attend training and conferences, confer with regulatory agency staff nationally and locally, and review professional journals and scientific literature. Ecology conducts research on stormwater management practices and the effect of stormwater discharges on water quality. Ecology uses its expertise in the field of stormwater management to adopt and refine stormwater controls and management practices in the SWMMs and CSWGP.
- **CSWGP requires adaptive management.** In addition to the formal programmatic improvements to the SWMM and CSWGP described above, the CSWGP contains an adaptive management process. The process requires Permittees to implement timely revisions to their Stormwater Pollution Prevention Plans (SWPPP) when stormwater discharges exceed benchmarks. As such, stormwater controls on individual projects are subject to ongoing refinement (i.e., addition of new BMPs and/or enhancement of existing BMPs) that reduces the amount of pollutants that would otherwise be discharged to receiving waterbodies.

Public Notice of the General Permit Antidegradation Plan and Individual Actions

Since Ecology has chosen to address Tier II anti-degradation in accordance with WAC 173-201A-320(6), Ecology will not perform site-specific analyses of each “new or expanded action” proposed for coverage under the permit. However, it is important that the public be able to weigh in on whether individual actions are “necessary and in the overriding public interest.” The antidegradation rule establishes a refutable presumption that they do, but only through a public notice process does the general public have an opportunity to question individual actions.

MIXING ZONES

The Water Quality Standards allow Ecology to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Ecology may authorize both "acute" and "chronic" mixing zones for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving AKART and in accordance with other mixing zone requirements of WAC 173-201A-400.

The applicable laws and regulations include federal Clean Water Act, RCW 90.48, WAC 173- 200, WAC 173-201A, WAC 173-204, and human health based criteria in the Federal water quality criteria applicable to Washington (40 CFR 131.45).

No mixing zones are authorized in this permit. Since a general permit must apply to a number of different sites, precise mixing zones and the resultant dilution are not applicable to facilities covered under a general permit.

Any discharger may request a mixing zone through an application for an individual permit in accordance with WAC 173-220-040 or WAC 173-216-070.

COMPLIANCE WITH STANDARDS

Condition S3 prohibits discharges that cause or contribute to violations of Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Quality Standards (Chapter 173-200 WAC), Sediment Management Standards (Chapter 173-204 WAC), and human health-based criteria in the Federal water quality criteria applicable to Washington (40 CFR 131.45).

Each Permittee is required to control its discharge as necessary to meet applicable water quality standards. Ecology expects that compliance with the other conditions in this permit (e.g., the technology-based limits, Stormwater Pollution Prevention Plan (SWPPP), monitoring, corrective actions, etc.) will result in discharges that are controlled as necessary to meet applicable water quality standards. This “presumptive approach” is consistent with 40 CFR 122.44(k)(3) which allows permits to rely on BMPs to control pollutants when it is infeasible to derive appropriate numeric effluent limits.

In addition, if the Permittee becomes aware, or Ecology determines, that the discharge causes or contributes to a water quality standards exceedance, corrective actions and Ecology non-compliance notification is required. In addition, at any time Ecology may require additional monitoring or an individual permit, if information suggests that the discharge is not controlled as necessary to meet applicable water quality standards.

SURFACE WATER QUALITY CRITERIA

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-226A-070 states that waste discharge permits shall be conditioned such that the discharge will not cause a violation of established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) are designed to protect the beneficial uses of the surface waters of the state. Surface water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin-wide total maximum daily loading study (TMDL).

WACs 173-201A-200 through 260 define applicable surface water quality criteria for aquatic biota. These criteria were established to protect existing and potential uses of the surface waters of the state. Consideration was also given to both the natural water quality and its limitations.

The surface water quality criteria are an important component of the state's Surface Water Quality Standards (Chapter 173-201A WAC).

Application of the surface water quality criteria to a discharge requires site-specific analysis of the discharge and the receiving water. Such analysis is not possible in a statewide general permit that covers more than 2,000 construction sites at any given time. However, the criteria influenced the calculation of the 25 NTU benchmark for turbidity.

SEDIMENT QUALITY

Ecology has promulgated Sediment Management Standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that Ecology may require Permittees to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173- 204-400). The permit requires BMPs to limit contamination of stormwater. Source control BMPs can reduce or eliminate contamination of stormwater and help comply with the sediment management standards. However, if Ecology determines that BMPs are ineffective in protecting sediment quality, Ecology may require the Permittee to implement additional measures to assure compliance with the sediment standards or apply for an individual permit.

Ecology has adopted and added to EPA's list of "prohibited discharges" (40 CFR §450.21) which will help ensure compliance with the state AKART requirements in Chapter 90.48 RCW, and prevent violations of the Sediment Management Standards.

PROPOSED PERMIT LIMITS

Introduction to Legal Requirements for Limitations to Control Pollutants in Discharges

Section 502(11) of the CWA defines "effluent limitation" as any restriction established by a state or the Administration on the quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged from point sources into navigable waters, the waters of the contiguous zone, or the ocean, including schedules of compliance. Effluent limitations are among the permit conditions and limitations prescribed in NPDES permits issued under Section 402(a) of the Act, 33 U.S.C. §1342(a).

TYPES OF EFFLUENT LIMITATIONS: TECHNOLOGY-BASED & WATER-QUALITY BASED

Federal and state regulations require that discharges from existing facilities, at a minimum, meet technology-based effluent limitations reflecting, among other things, the technological capability of Permittees to control pollutants in their discharges that are economically achievable.

Specifically, state laws (RCW 90.48.010, 90.52.040 and 90.54.020) require the use of “all known, available and reasonable methods of prevention, control and treatment” (AKART).

Water quality-based effluent limits (WQBELs) are required by CWA Section 301(b)(1)(C) and, in Washington State, are based on compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the Federal water quality criteria applicable to Washington (40 CFR 131.45). Ecology chooses the more stringent of these two limits (technology or water quality-based) for each of the parameters of concern when drafting NPDES permits. [CWA sections 301(a) and (b)].

Effluent limits in NPDES permits may be expressed as numeric or non-numeric standards. Under EPA’s regulations, non-numeric effluent limits are authorized in lieu of numeric limits, where “[n]umeric effluent limitations are infeasible.” [40 CFR 122.44(k)(3).] Courts have recognized that there are circumstances when numeric effluent limits are infeasible and have held that EPA may issue permits with conditions (for example, BMPs) designed to reduce the level of effluent discharges to acceptable levels:

Natural Res. Def. Council, Inc. v. EPA, 673 F.2d 400, 403 (D.C. Cir. 1982) (noting that "section 502(11) defines 'effluent limitation' as 'any restriction' on the amounts of pollutants discharged, not just a numerical restriction"; holding that section of CWA authorizing courts of appeals to review promulgation of "any effluent limitation or other limitation" did not confine the court's review to the EPA's establishment of numerical limitations on pollutant discharges, but instead authorized review of other limitations under the definition) (emphasis added).

In *Natural Res. Def. Council, Inc. v. Costle, 568 F.2d 1369 (D.C. Cir. 1977)*, the D.C. Circuit stressed that when numerical effluent limitations are infeasible, EPA may issue permits with conditions designed to reduce the level of effluent discharges to acceptable levels.

TECHNOLOGY-BASED LIMITATIONS

There are no numeric technology based effluent limitations included in the draft permit. However, the draft permit carries forward the same technology-based limitations as included in the 2015 permit with clarifications and updates to meet the most current federal regulations.

TYPES OF TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Technology-based effluent limitations are in many cases established by EPA in regulations known as effluent limitations guidelines, or “ELGs.” EPA establishes these regulations for specific industry categories or subcategories after conducting an in-depth analysis of that industry.¹

The CWA sets forth different standards for the effluent limitations based upon the type of pollutant or the type of industry involved.

The CWA establishes two levels of pollution control for existing sources. In the first stage, existing sources that discharge pollutants directly to receiving waters were initially subject to effluent limitations based on the “best practicable control technology currently available” or “BPT” (33 U.S.C. § 1314(b)(1)(B)). BPT applies to all pollutants. In the second stage, existing sources that discharge conventional pollutants are subject to effluent limitations based on the “best conventional pollutant control technology,” or “BCT.” 33 U.S.C. §1314(b)(4)(A); see also 40 C.F.R. §401.16 (list of conventional pollutants – biological oxygen demand [BOD], TSS, pH, fecal coliform, oil & grease) while existing sources that discharge toxic pollutants or “nonconventional” pollutants (*i.e.*, pollutants that are neither “toxic” nor “conventional”) are subject to effluent limitations based on “best available technology economically achievable,” or “BAT.” 33 U.S.C. §1311(b)(2)(A)(i); see also 40 C.F.R. §401.15 (list of toxic pollutants).

The factors permit writers must consider in establishing the levels of these control technologies are specified in section 304(b) of the CWA and EPA’s regulations at 40 CFR §125.3.

Permit writers must consider technology-based limitations (water quality-based effluent limitations may be more stringent) in all NPDES permits. 40 CFR §§122.44(a)(1) and 125.3. CWA sections 301(b)(1)(A) for (BPT); 301(b)(2)(A) for (BAT); and 301(b)(2)(E) for (BCT).

Technology-based limits in this draft permit represent the BPT (for conventional, toxic, and non-conventional pollutants), BCT (for conventional pollutants), and BAT (for toxic pollutants and non-conventional) levels of control for the applicable pollutants. When EPA has not promulgated effluent limitation guidelines for an industry, or if an operator is discharging a pollutant not covered by the effluent guideline, permit writers may base limitations on their best professional judgment (BPJ, sometimes also referred to as “best engineering judgment”) of the permit writer. 33 U.S.C. § 1342(a)(1); 40 CFR 125.3(c). See *Student Public Interest Group v. Fritzsche, Dodge & Olcott*, 759 F.2d 1131, 1134 (3d Cir. 1985); *American Petroleum Inst. v. EPA*, 787 F.2d 965,971 (5th Cir. 1986).

For this permit, Ecology based most of the technology-based limits on BPJ decision-making. However, on December 1, 2009, the EPA published effluent limitation guidelines (ELGs) and new source performance standards (NSPS) to control the discharge of pollutants from construction sites. This regulation became effective on February 1, 2010. After this date, all permits issued by EPA or states must incorporate the final rule requirements. All construction sites required to obtain permit coverage must implement a range of erosion and sediment control and pollution prevention Best Management Practices (BMPs). The ELGs were updated in 2014 and are reflected in this draft permit.

AUTHORITY TO INCLUDE NON-NUMERIC TECHNOLOGY-BASED LIMITS IN NPDES PERMITS

Under EPA’s regulations, non-numeric effluent limits are authorized in lieu of numeric limits, where “[n]umeric effluent limitations are infeasible” 40 CFR 122.44(k)(3). As far back as 1977, courts have recognized that there are circumstances when numeric effluent limitations are infeasible and have held that EPA may issue permits with conditions (e.g., Best Management Practices or “BMPs”) designed to reduce the level of effluent discharges to acceptable levels.

¹ Where EPA has not issued effluent guidelines for an industry, EPA and State permitting authorities establish effluent limitations for NPDES permits on a case-by-case basis based on their best professional judgment. See 33 U.S.C. § 1342(a)(1); 40 C.F.R. § 125.3(c)(2).

Natural Res. Def. Council, Inc. v. Costle, 568 F.2d 1369 (D.C.Cir.1977).

Through the Agency's NPDES permit regulations, EPA interpreted the CWA to allow BMPs to take the place of numeric effluent limitations under certain circumstances. 40 C.F.R. §122.44, entitled "Establishing limitations, standards, and other permit conditions (applicable to State NPDES programs ...)," provides that permits may include BMPs to control or abate the discharge of pollutants when: (k)(1) "[a]uthorized under section 304(e) of the CWA for the control of toxic pollutants and hazardous substances from ancillary industrial activities; or (2) "[a]uthorized under section 402(p) of the CWA for the control of stormwater discharges"; or (3) "[n]umeric effluent limitations are infeasible"; or (4) "[t]he practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA."

As recently as 2006, The U.S. Court of Appeals for the Sixth Circuit has once again held that the CWA does not require the EPA to set numeric limits where such limits are infeasible. *Citizens Coal Council v. United States Environmental Protection Agency, 447 F3d 879, 895-96 (6th Cir. 2006)*. The Citizens Coal court cited to *Waterkeeper Alliance, Inc. v. EPA, 399 F.3d 486, 502 (2d Cir. 2005)*, stating "site-specific BMPs are effluent limitations under the CWA." "In sum, the EPA's inclusion of numeric and non-numeric limitations in the guideline for the coal remining subcategory was a reasonable exercise of its authority under the CWA."

Additionally, the Sixth Circuit cited to *Natural Res. Def. Council, Inc. v. EPA, 673 F.2d 400, 403 (D.C.Cir.1982)* noting that "section 502(11) [of the CWA] defines 'effluent limitation' as 'any restriction' on the amounts of pollutants discharged, not just a numerical restriction." EPA has substantial discretion to impose non-quantitative permit requirements pursuant to Section 402(a)(1)), especially when the use of numeric limits is infeasible. See *NRDC v. EPA, 822 F.2d 104, 122-24 (D.C. Cir. 1987)* and 40 CFR 122.44(k)(3).

RATIONALE FOR NON-NUMERIC TECHNOLOGY-BASED EFFLUENT LIMITS IN THIS PERMIT

Numeric effluent limits are not always feasible for construction stormwater discharges as such discharges pose challenges not presented by the vast majority of NPDES-regulated discharges. Stormwater discharges can be highly intermittent, they are usually characterized by very high flows occurring over relatively short time intervals, and they carry a variety of pollutants whose source, nature and extent varies. See 55 Fed. Reg. 47.990 (Nov. 16, 1990). This is in contrast to process wastewater discharges from a particular industrial or commercial facility where the effluent is more predictable and can be more effectively analyzed to develop numeric effluent limits.

The variability of effluent and effectiveness of appropriate control measures makes setting uniform effluent limits for stormwater extremely difficult. There is a high level of variability among stormwater discharges, in terms of both flow rates and volumes and levels of pollutants, since the volume and quality of stormwater discharges associated with construction activity depend on a number of factors. These factors include:

- The nature of grading, clearing and other construction activities occurring at the site.
- The nature of precipitation in relation to phases of construction activity.
- Site-specific conditions, including vegetation, hydrology, topography, soils, and surface imperviousness.

Control measures for construction stormwater discharges tend to focus on pollution prevention measures, called Best Management Practices (BMPs). In accordance with 40 CFR 122.44(k) and 40 CFR 122.44 (s), this draft general permit includes requirements for the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) along with 13 categories of BMPs (called "13 Elements of Construction Stormwater Pollution Prevention") to minimize or prevent the discharge of pollutants to waters of the State. These BMPs constitute Best Conventional Pollutant Control Technology (BCT) and Best Available Technology Economically Achievable (BAT) for stormwater discharges.

Ecology has incorporated applicable BMPs from EPA's 2014 Construction and Development Effluent Guidelines (40 CFR §450.21) that represent the best practicable technology currently available (BPT). 40 CFR §450.21 is known as the C&D Rule. EPA published this rule in the *Federal Register* at 74 F.R. 229 (Dec. 1, 2009).

EPA categorized these BMPs as follows:

- Erosion and Sediment Controls
- Soil Stabilization
- Dewatering
- Pollution Prevention Measures
- Prohibited Discharges
- Surface Outlets
- Natural Buffers around Waters of the U.S.
- Preserve Topsoil
- Minimize Soil Compaction

Since Ecology's 2010 permit (Condition S9) already had equivalent or more stringent pollution prevention BMPs compared to those contained EPA's 2014 Construction and Development Effluent Guidelines (40 CFR §450.21), Ecology simply retained or modified the existing BMPs in Condition S9 in the 2015 permit version to minimize redundancy and confusion. In Condition S1.D Ecology has adopted and added to EPA's list of "prohibited discharges" (40 CFR §450.21), which will help ensure compliance with the state AKART requirements in Chapter 90.48 RCW, and prevent violations of the state water quality standards. The prohibited discharges include:

- a. Concrete wastewater
- b. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials.
- c. Process wastewater as defined by 40 CFR 122.1.
- d. Slurry materials and waste from shaft drilling, including process wastewater from shaft drilling for construction of building, road, and bridge foundations unless managed according to S9.D.9.j.
- e. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance.
- f. Soaps or solvents used in vehicle and equipment washing.
- g. Wheel wash wastewater unless handled according to S9.D.9.
- h. Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, unless managed according to S9.D.10.

Ecology has determined that Permittees in full compliance with the Construction Stormwater General Permit meet the state AKART requirements in Chapter 90.48 RCW.

GROUND WATER QUALITY LIMITATIONS

Ecology has promulgated Ground Water Quality Standards (Chapter 173-200 WAC) to protect beneficial uses of ground water. Permits issued by Ecology prohibit violations of those standards (WAC 173-200-100). Ecology has adopted and added to EPA's list of "prohibited discharges" (40 CFR §450.21) which will help ensure compliance with the state AKART requirements in Chapter 90.48 RCW, and prevent violations of the state groundwater quality standards. The following discharges are prohibited:

- a. Concrete wastewater;
- b. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
- c. Process wastewater as defined by 40 CFR 122.1;
- d. Slurry materials and waste from shaft drilling, including process wastewater from shaft drilling for construction of building, road, and bridge foundations unless managed according to S9.D.9.j;
- e. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;
- f. Soaps or solvents used in vehicle and equipment washing;
- g. Wheel wash wastewater unless discharged according to S9.D.9; and
- h. Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, unless managed according to S9.D.10.

The permit requires BMPs to limit contamination of stormwater. Source control BMPs can eliminate/minimize the potential contamination of stormwater and protect ground water quality. However, if Ecology determines that BMPs are ineffective in protecting ground water quality, Ecology may require the Permittee to implement additional measures to protect ground water quality or to apply for an individual permit.

MONITORING REQUIREMENTS, BENCHMARKS AND REPORTING TRIGGERS

Special Condition S4. includes a narrative (non-numeric) effluent limit that requires Permittees who exceed water quality-based numeric benchmark values (for turbidity/transparency, and/or pH) to review and make appropriate revisions to the Stormwater Pollution Prevention Plan (SWPPP) and implement and maintain appropriate source control and/or treatment Best Management Practices (BMPs) within set timeframes. This narrative limitation has an adaptive management mechanism that requires monitoring, evaluation, and reporting requirements to ensure that stormwater discharges are controlled by adequate best management practices (BMPs) that prevent violations of water quality standards. The narrative limitation is based on 40 CFR 122.44 that allows permits to rely on BMPs to control pollutants when it is infeasible to derive appropriate numeric effluent limits. The draft permit continues the previous permits' adaptive management approach that requires facilities to monitor stormwater quality against water quality-based benchmarks (indicator values). In 2007, the Pollution Control Hearings Board (PCHB) concluded that the 2005 Permit's approach to benchmarks and adaptive management is reasonable.

The rationale for the selection and derivation of benchmark values for specific pollutant parameters is described in Special Condition S3 of this Fact Sheet. If the benchmark for a particular pollutant parameter is met, the discharge is presumed to not cause or contribute to a violation of water quality standards for that parameter. If a (water quality-based) benchmark is exceeded, the potential for a violation of water quality standards increases, and the facility is required to implement SWPPP review and the implementation of additional BMPs.

Since benchmark values are not numeric effluent limits, discharges that exceed a benchmark value are not automatically considered a permit violation or a violation of water quality standards. However, if a Permittee exceeds benchmarks that trigger a corrective action, but does not comply with the specific corrective action requirements in Special Condition S4.C.5, it has violated the permit.

NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the State of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the maximum levels of pollutants allowed in receiving waters to be protective of aquatic life.

Numerical criteria set forth in the water quality standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in a discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a discharge permit.

NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The EPA has promulgated 99 numeric water quality criteria for the protection of human health that are applicable to Washington State (40 CFR 131.45). These criteria are designed to protect humans from cancer and other diseases, primarily from fish and shellfish consumption and drinking water from surface waters. Because most human health-based criteria are based on lifetime exposures, direct comparisons of receiving water criteria with pollutant concentrations in intermittent stormwater discharges may not be appropriate. This and the high variation in stormwater pollutant concentrations, both between storms and during a single storm make the application of human health criteria to stormwater particularly problematic.

NUMERICAL EFFLUENT LIMITS

40 CFR Part 122.44 requires the permit to contain effluent limits to control all pollutants or pollutant parameters which are, or may be, discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any water quality standard.

Ecology has determined that construction stormwater discharges may cause a violation of surface water quality standards for turbidity. It based this determination on:

- EPA's Nationwide Urban Runoff Program (NURP)
- Evaluation of Washington's Construction Stormwater General Permit (2007 Envirovision/Herrera Evaluation)
- Stormwater Quality Survey of Western Washington Construction Sites, 2003-2005 (2005 Washington State Department of Ecology)
- Best professional judgment

Therefore, the draft permit includes water quality-based effluent limits (WQBELs) to control discharges as necessary to meet applicable water quality standards. The provisions of Conditions S8 (303(d) and TMDLs), S3 (Compliance with Standards), S4 (Monitoring Requirements, Benchmarks and Reporting Triggers), and S7 (Solid and Liquid Waste Disposal) constitute the WQBELs of this permit. These WQBELs supplement the permit's technology-based effluent limits in S9 (SWPPP), S1.D (Prohibited Discharges), S1.E (Limits on Coverage), and S3.B (AKART).

The following is a list of the permit's WQBELs:

- Condition S8 requires discharges from construction sites that discharge to 303(d)-listed waterbodies to comply with water quality-based numeric effluent limits.

- Condition S8 requires facilities to comply with TMDLs, including any applicable wasteload allocations.
- Condition S4.C requires facilities that exceed the turbidity and/or pH benchmark values to implement source control and/or treatment BMPs to ensure that future discharges do not cause or contribute to violations of water quality standards.
- Condition S3.A prohibits discharges that cause or contribute to violations of Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Quality Standards (Chapter 173-200 WAC), and Sediment Management Standards (Chapter 173-204 WAC), and human health-based criteria in the Federal water quality criteria applicable to Washington (40 CFR 131.45).
- Condition S7 requires facilities to prevent solid waste material or leachate from causing violations of the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Quality Standards (Chapter 173-200 WAC), and Sediment Management Standards (Chapter 173-204 WAC).

The rationale for water quality-based effluent limitations in the draft permit is discussed below.

DISCHARGES TO 303(d) OR TMDL WATERBODIES

The applicable federal regulation is 40 CFR 122.4(i) Sec. 122.4 Prohibitions. *No permit may be issued:*

- i. To a new source or a new discharger, if the discharge from its construction or operation will cause or contribute to the violation of water quality standards....

Ecology cannot allow a new discharge to a listed waterbody (issuance of permit is prohibited) if the discharge will cause or contribute to a violation of water quality standards. Ecology may allow a new discharge if it meets the applicable water quality criteria.

The draft CSWGP carries forward the water quality-based numeric effluent limits for construction sites that discharge to certain waters that are listed as impaired under Section 303(d) of the Clean Water Act that were in the 2015 permit.

All references and permit requirements associated with Section 303(d) of the Clean Water Act pertain to the most current EPA-approved 303(d) listing of impaired waters that exists when a complete application for coverage is submitted to Ecology. Ecology has determined that construction sites without adequate controls have the potential to cause or contribute to violations of water quality standards in waterbodies that are 303(d)-listed for the following parameters, and must comply with the numeric effluent limit(s) described below:

- Turbidity
- Fine sediment
- High pH
- Phosphorus

303(d)-related numeric effluent limits apply to both direct discharges to 303(d)-listed (Category 5) waterbodies and indirect discharges via a stormwater conveyance system. An example of an indirect discharge via a stormwater conveyance system is a discharge from a construction site into a roadside ditch which then drains to a listed waterbody. Ecology will notify Permittees subject to numeric effluent limitations in writing when it grants permit coverage.

The technical basis for 303(d)-related effluent limits for turbidity, fine sediment, total phosphorus and pH are described below:

Turbidity

For discharges to waterbodies 303(d)-listed waterbodies for turbidity, the discharger must comply with the applicable surface water quality criterion for turbidity at the point of discharge from the site (WAC 173-201A-200 & 210).

Fine Sediment

Since the state surface water quality standards do not have numeric criterion for “fine sediment.” Ecology has determined that, if turbidity levels do not violate the surface water quality criterion for turbidity, then the discharge should not cause or contribute to the “fine sediment” problem which caused the 303(d)-listing (impairment). Therefore, the permit uses turbidity as a surrogate parameter for discharges to fine sediment-listed waters; i.e., if the receiving water is listed for fine sediment, the discharger must demonstrate that the discharge is not violating the turbidity criterion (WAC 173-201A- 200 & 210) at the point of discharge from the site.

Total Phosphorus

In 2007, the Pollution Control Hearings Board (PCHB) concluded that the 2005 Permit’s use of “turbidity testing as a surrogate for phosphorus is reasonable, given the relationship between sediment and phosphorus, and the lack of other practicable testing and treatment alternatives for phosphorus” (Associated General Contractors of WA et al v. Ecology, PCHB No. 05-157 Findings of Fact, Conclusions of Law, and Order (June 4, 2007)). Therefore, the draft permit uses turbidity as a surrogate parameter for discharges to total phosphorus-listed waters; i.e., if the receiving water is listed for total phosphorus, the discharger must demonstrate that the discharge is not violating the turbidity criterion (WAC 173-201A-200 & 210) at the point of discharge from the site.

High pH

Construction sites that discharge to surface waters on the 303(d)-list for high pH are subject to a water quality-based numeric effluent limitation of pH 6.5 – 8.5 standard units (su) (i.e., within the range of pH 6.5 to 8.5 su), applied at the point of discharge from the site. This effluent limit is based on the aquatic life pH criteria in WAC 173- 201A-200(1)(g).

Table 2: Summary of Sampling and Numeric Effluent Limits—Discharges to 303(d)-Listed Waters

Parameter identified in 303(d) listing	Parameter/ Units	Analytical Method	Sampling Frequency	Numeric Effluent Limit
Turbidity Fine Sediment Phosphorus	Turbidity/NTU	SM2130 or EPA180.1	Weekly, if discharging	25 NTU, at the point where stormwater is discharged from the site; OR In compliance with the surface water quality standard for turbidity (S8.C.2.a)
High pH	pH/ Standard Units	pH meter	Weekly, if discharging	In the range of 6.5 – 8.5

Ecology plans to continue implementing a permit application review process to identify discharges to impaired waters with an approved or established Total Maximum Daily Load (TMDL), Category 4a on the approved 303(d)-list. Where an operator indicates on its application for coverage form that the discharge is to one of these waters, Ecology will review the applicable TMDL to determine whether the TMDL includes requirements that apply to the individual discharger (permit applicant).

Operators of construction sites that discharge to a TMDL waterbody are not eligible for coverage under this permit unless the operator prevents exposing stormwater to pollutants for which the waterbody is impaired, or documents that the pollutants for which the waterbody is impaired are not present at the site, or provides data indicating the discharge is not expected to cause or contribute to an exceedance of a water quality standard. Ecology will determine whether any more stringent requirements are necessary to comply with the WLA, whether compliance with the existing permit limits is sufficient, or, alternatively, whether an individual permit application is necessary. If Ecology determines that additional requirements are necessary, Ecology will incorporate the final limits as site-specific terms to the facilities general permit coverage.

Condition S8. is intended to implement the requirements of 40 CFR 122.44(d)(1)(vii)(B), which requires that water quality-based effluent limits “are consistent with the assumptions and requirements of any available wasteload allocation for the discharge” Because WLAs for stormwater discharges may be specified in many different formats, Ecology plans to ensure that these requirements are properly interpreted and communicated to the Permittee in way that can be implemented.

Ecology will notify Permittees subject to numeric effluent limitations or waste load allocations related to a TMDL in writing when Ecology grants permit coverage. TMDLs approved after the issuance date of this permit become applicable to the Permittee only if Ecology imposes the TMDL through an administrative order, or through modification of permit coverage.

DESCRIPTION OF SPECIAL CONDITIONS

This section follows the structure of the draft Construction Stormwater General Permit (CSWGP), but does not restate language used in the permit. The information presented below is intended to help the public understand the intent and basis of the draft permit.

S1. PERMIT COVERAGE

- A. Permit Area.** The draft CSWGP is a statewide permit. It provides permit coverage for discharges of stormwater associated with construction activity within Washington, except for federal operators and Indian Country.
- B.** This draft CSWGP identifies construction activities required to seek permit coverage. “Construction activity” is defined as land disturbing operations that disturb one or more acres (including off-site disturbance acreage resulting from construction-support activity as authorized in S1.C.2.), as well as disturbance of less than one acre of total land area that is part of a larger common plan of development or sale (e.g. subdivision, etc.), if the larger common plan will ultimately disturb one or more acres. The definition of construction activity requiring NPDES permit coverage is consistent with EPA’s Phase 1 and 2 stormwater regulations (40 CFR 122.26(b)(14)(x), and 40 CFR 122.26(b)(15)).
- C. Authorized Discharges.** Discharges conditionally authorized by the draft permit include:
- 1) Stormwater discharges from construction activities (for example, clearing (e.g. stump pulling/site preparation), grading, excavation, demolition, etc.);
 - 2) Stormwater discharges from construction support activities (for example, off-site equipment staging yards, material storage areas, borrow areas, etc.); and
 - 3) Allowable non-stormwater discharges, including discharges from uncontaminated dewatering and dust suppression. Routine maintenance performed to maintain the original line and grade (for example, road grading), hydraulic capacity (for example, ditch cleaning), or original purpose of the facility is excluded from the definition of “construction activity.” Routine maintenance does not require permit coverage.

Since Condition S1.C of the Industrial Stormwater General Permit (ISGP) does not allow coverage for construction activities as identified by 40 CFR Subpart 122.26(b) (14)(x) and Subpart 122.26(b) (15), stormwater discharges from construction activities conducted within industrial facilities require separate coverage under the CSWGP.

Ecology’s draft permit contains the same list of “authorized non-stormwater discharges” from the previous permit, as there is no technical or legal basis to change it.

- D. Prohibited Discharges.** Ecology has adopted and added to EPA’s list of “prohibited discharges” (40 CFR §450.21) which will help ensure compliance with the state AKART requirements in Chapter 90.48 RCW, and prevent violations of the state surface and ground water quality standards, and sediment management standards. The following discharges are prohibited:
- a. Concrete wastewater;
 - b. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
 - c. Process wastewater as defined by 40 CFR 122.1;
 - d. Slurry materials and waste from shaft drilling, including process wastewater from

shaft drilling for construction of building, road, and bridge foundations unless managed according to S9.D.9.j;

- e. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;
- f. Soaps or solvents used in vehicle and equipment washing;
- g. Wheel wash wastewater unless discharged according to S9.D.9; and
- h. Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, unless managed according to S9.D.10.

The 2015 permit clarified that slurry materials and waste from shaft drilling is prohibited including process wastewater from shaft drilling for construction of building, road, and bridge foundations unless managed according to Special Condition S9.D.9. (Control Pollutants) which allows for infiltration provided the wastewater is managed in a way that prohibits discharge to surface waters. This Special Condition requires that effective pollution prevention measures be designed, implemented, and maintained to minimize the discharge of pollutants associated with shaft drilling. Uncontaminated water from water-only based shaft drilling for construction of building, road, and bridge foundations may be infiltrated provided the wastewater is managed in a way that prohibits discharge to surface waters. Prior to infiltration, water from water-only based shaft drilling that comes into contact with curing concrete should be neutralized until pH is in the range of 6.5 to 8.5 (su). The draft permit retains the prohibition of all other slurry material and waste from shaft drilling from the 2015 permit.

The draft permit clarifies (in S9.D.9) that certain de minimus volumes of process wastewater (washout of small concrete handling equipment) can occur in pre-formed areas awaiting concrete pour or placement where it will not contaminate surface or ground waters.

Stormwater which comes into contact with fresh concrete should be managed according to Special Condition S4 of the general permit. This stormwater should not be considered process wastewater unless it comes into contact with non-stormwater resulting from manufacturing or processing raw material, intermediate product, finished products, byproducts or waste products.

E. Limits on Coverage. This section identifies the types of discharges that are not authorized by the permit. These include discharges from:

1. Post-construction activities, after construction is complete and the site is stabilized.
2. Nonpoint source silvicultural (forestry) sites.
3. Projects that are operated by a federal operator.
4. Stormwater from facilities located on Indian Country. Indian Country includes:
 - a. All land within any Indian Reservation notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation this includes all federal, tribal, and Indian and non-Indian privately owned land within the reservation;
 - b. All off-reservation Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same;
 - c. All off-reservation federal trust lands held for Native American tribes.

Puyallup exception: Following the *Puyallup Tribes of Indians Land Settlement Act of 1989*, 25 U.S.C. §1773; the permit does apply to land within the Puyallup Reservation except for discharges to surface water on land held in trust by the federal government.

5. Sites covered under an existing individual NPDES permit.

6. Construction sites with discharges to impaired waters with an approved TMDL, if the TMDL specifically precludes or prohibits discharges from construction activity.

Coverage for Significant Contributors of Pollutants. The Federal Clean Water Act at Section 402(p)(2)(E) of the Clean Water Act and Chapter 90.48 RCW authorize Ecology to require permit coverage for any unpermitted construction site which Ecology determines to be a significant contributor of pollutants to surface or ground waters of the state or may reasonably be expected to cause a violation of a water quality standard.

These provisions allow Ecology to issue an order to the owner of unpermitted small construction activities which disturb less than one acre of land that are deemed “significant contributors of pollutants” to obtain permit coverage. This determination is limited to situations where there is a strong potential for a site to cause a violation of surface or groundwater quality standards.

Various criteria are considered when making a ‘significant contributor’ determination, including, but not limited to:

- Type and sensitivity of receiving waterbody (e.g. lake or wetland vs. large marine bay or river; or a 303(d)-listed or impaired waterbody);
- Volume and concentration of discharge to the receiving water;
- Size of site;
- Erosion and sedimentation risk (slope/soil/existing BMPs etc.)

- F. Low Rainfall Erosivity Waiver.** The EPA Phase II Stormwater rule allows, but does not require, permitting authorities to waive NPDES requirements for stormwater discharges from small (<5 acre) construction sites based on low rainfall erosivity (40 CFR Part 122.26(b)(15)). The waiver identifies the project proponent as not needing to obtain coverage under the CSWGP.

The rainfall erosivity waiver process is time sensitive and is dependent on the time of year construction takes place, how long construction lasts, and the expected rainfall and intensity during that time. The EPA has established an R Factor (“R” in the Revised Universal Soil Loss Equation) of less than 5 as the criterion for determining rainfall erosivity waiver eligibility as calculated using the EPA Erosivity Index Calculator for Construction sites <http://water.epa.gov/polwaste/npdes/stormwater/Welcome-to-the-Rainfall-Erosivity-Factor-Calculator.cfm> (per 40 CFR Part 122.26(b)(15)(i)(A)) or by following the EPA step-by-step instructions on computing the R Factor found on the EPA Erosivity Waiver Fact Sheet.

Ecology recognizes that there are times and locations where small construction sites (<5 acres) will not have adverse water quality impacts and should be given a waiver. Staff considered a timing and location waiver only, but 40 CFR 122.26(B)(15)(i)(A) requires that the EPA Erosivity Index Calculator be used. Federal regulations do allow for additional timing and location restrictions and/or a lower R value threshold.

Ecology proposes to continue allowing certain <5 acre sites to obtain an erosivity waiver, under the same conditions as the previous CSWGP.

An erosivity waiver is available for the duration of the project. Projects may not be phased using an erosivity waiver for a portion of the year and a permit for the remainder.

S2. APPLICATION REQUIREMENTS

A. Permit Application. On the effective date of the proposed permit, the current permit will be revoked and replaced by the reissued permit. Sites that have coverage under the existing CSWGP and have applied for continued coverage will be covered automatically under the revised permit. These Permittees will be subject to the terms and conditions of the revised permit. This procedure is authorized under General Condition G4, General Permit Modification and Revocation, of the current permit and under WAC 173-226-230. In accordance with WAC 173-226-200, operators of construction activities must submit a complete permit application (Notice of Intent [NOI]) to obtain coverage under the construction stormwater general permit. Applicants must submit all of the information listed in Condition S2 as part of the application for permit coverage. Applicants must submit the NOI at least 60 days before discharging stormwater and on or before the date of the first public notice. NOIs must be submitted electronically. Operators unable to submit electronically (for example, those who do not have an internet connection) must contact Ecology to request a waiver and obtain instructions on how to submit a paper NOI.

Department of Ecology
Water Quality Program – Construction Stormwater
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To comply with water quality standards, Applicants and Operators must notify Ecology if they are aware of or, after receiving permit coverage (G6. Reporting a Cause for Modification), become aware of contaminated soils and/or groundwater associated with the construction activity. Applicants who learn a site is contaminated *following* the start of construction must immediately report this information to Ecology, in writing. To determine if the construction activity is eligible for this general permit, detailed information (as known and readily available) must be provided on the nature and extent of the contamination (concentrations, locations, and depth), as well as pollution prevention and/or treatment BMPs proposed to control the discharge of soil and/or groundwater contaminants in stormwater. Examples of such detail may include, but are not limited to:

- i. List or table of all known contaminants with laboratory test results showing concentration and depth of contamination,
- ii. Map with sampling locations,
- iii. Temporary Erosion and Sediment Control (TESC) plans,
- iv. Stormwater Pollution Prevention Plan (SWPPP),
- v. Dewatering plan and/or dewatering contingency plan.

The detailed information will be evaluated to determine if the discharge from the construction activity will comply with surface water quality standards (Chapter 173-201A WAC), ground water quality standards (Chapter 173-200 WAC), sediment management standards (Chapter 173-204 WAC), and human health-based criteria in the Federal water quality criteria applicable to Washington (40 CFR Part 131.45) and whether the discharge is eligible for this general permit. Discharges not in compliance with these standards are not authorized under this draft permit and may be eligible for an individual permit.

Ecology may respond to the permit application in writing based on public comments, incomplete or insufficient information, or any other relevant permitting considerations, such as construction in contaminated soil and/or groundwater, or discharges to impaired waters. Unless Ecology responds in writing to the permit application, permit coverage under the general permit will begin on the latter of the following:

1. The first day following the end of the 30-day public comment period required by WAC 173-226-130(5)(b)(iv) and RCW 90.48.170;
2. The 31st day following receipt by Ecology of a **completed** application for coverage under the general permit.

A **completed** application includes any supplemental information deemed necessary by Ecology, certification that State Environmental Policy Act (SEPA) requirements have been met, and, in accordance with WAC 173-226-200, the permit application must contain a certification that the public notice requirements of WAC 173-226-130(5) have also been met. The 30-day public comment period required by WAC 173-226-130(5)(b)(iv) and RCW 90.48.170 begins on the publication date of the second public notice.

If an applicant intends to use a BMP selected on the basis of Condition S9.C.4 (“demonstrably equivalent” BMPs), the applicant must notify Ecology of its selection as part of its NOI, unless the selection is made after submission of the NOI, in which case the applicant must submit notice of the selection of an equivalent BMP no less than 60 days before intended use of the equivalent BMP. This is based on an October 26, 2006, Pollution Control Hearings Board ruling on the 2005 CSWGP.

Permittees may request that Ecology transfer current coverage under this permit to one or more new operators by submitting a Transfer of Coverage Form in accordance with Condition S2.A.2. Transfers of disturbed acreage from one active permit to another are not authorized. Transfers do not require public notice.

Special Condition S2.A.2 identifies the requirements for transfer of permit coverage in accordance with 40 CFR 122.41(l)(3) and WAC 173-220-200. Ecology proposes to continue allowing partial or complete transfers of general permit coverage. When an incomplete construction project is sold from one operator to another, the new operator must obtain permit coverage, either through a transfer of permit coverage per Condition S2.A.2, or by applying for the permit per Condition S2.A.1

Administrative Orders also transfer with permit coverage for construction activities that are under an Administrative Order.

The previous permit removed the requirement for Applicants to submit a copy of the NOI to the appropriate jurisdiction for construction activity that propose a discharge to a storm or sewer system operated by Seattle, King County, Snohomish County, Tacoma, Pierce County, or Clark County as this 40 CFR 122.26(a)(4) requirement is met in the Municipal Permits for said jurisdictions.

Permittees must notify Ecology of any changes to the original NOI (planned or unplanned) by submitting an Update/Modification of Permit Coverage form (essentially an updated NOI). Certain modifications may be subject to other permit process requirements such as demonstrated compliance with SEPA, updated public notice, etc. Examples of such modifications include, but are not limited to:

- Changes in or addition of receiving water(s).
- Changes to the nature or quantity of pollutants discharged, such as increases in disturbed acreage.
- Changes to construction plans that result in a change to monitoring requirements per Special Condition S4.

B. Public Notice. Applicants must satisfy the public notice requirements of WAC 173-226-130(5) prior to obtaining permit coverage from Ecology. Applicants must publish the public notices one time each week for two consecutive weeks, with seven days between publication dates. The public notice is required to be placed in a single newspaper which has general circulation in the county in which the construction is to take place. The 30-day public comment period required by WAC 173-226-

130(5)(b)(iv)) begins on the publication date of the second public notice. Because state law requires a 30-day public comment period before permit coverage, Ecology will not grant permit coverage sooner than 31 days after the date of the last public notice.

S3. COMPLIANCE WITH STANDARDS

This section requires that discharges associated with construction activity are subject to all applicable state water quality and sediment management standards. Discharges that are not in compliance with these standards are not authorized by the permit and are subject to enforcement action.

In recognition of the difficulty stormwater presents to determine when a discharge is causing a water quality violation, the draft permit emphasizes BMPs and monitoring to prevent stormwater discharges from causing or contributing to violations of water quality standards. All Permittees are required to apply AKART, including the preparation and implementation of an adequate SWPPP and the installation and maintenance of BMPs in accordance with the SWPPP and the terms and conditions of this permit.

40 CFR 122.41 and 40 CFR 122.44 directs Ecology's determination of compliance with the Clean Water Act and water quality standards in this general permit.

To ensure compliance with the Clean Water Act, stormwater dischargers must properly design, construct, maintain, and operate treatment systems to:

1. Prevent pollution of state waters and protect water quality, including compliance with state water quality standards. Satisfy state requirements for all known available and reasonable methods of prevention, control and treatment (AKART) of wastes (including construction stormwater runoff) prior to discharge to waters of the state.
2. Satisfy the federal technology based treatment requirements under 40 CFR part 125.3.

The applicable laws and regulations include Federal Clean Water Act, RCW 90.48, WAC 173- 200, WAC 173-201A, WAC 173-204, WAC 173-220-040, WAC 173-216-070 and human health-based criteria in the Federal water quality criteria applicable to Washington (40 CFR 131.45).

No mixing zones are established in this draft permit. Since a general permit must apply to a number of different sites, precise mixing zones and available dilution are not applicable to facilities covered under a general permit.

Any discharger may request a mixing zone through an application for an individual permit in accordance with WAC 173-220-040 or WAC 173-216-070.

Where construction sites also discharge to groundwater, the groundwater discharges must also meet the terms and conditions of the permit. The Permittee must also comply with any applicable requirements for discharges to ground under the Underground Injection Control Program (UIC) regulations, Chapter 173-218 WAC.

S4. MONITORING REQUIREMENTS

The monitoring approach outlined in S4 is consistent with the monitoring, recording, and reporting requirements of WAC 173-220-210, 40 CFR §450.21 and 40 CFR 122.41 and includes consideration of the certainty, risk, and cost associated with monitoring stormwater, and the objectives of the permit. Certainty provides a level of confidence that the data are representative of the pollutants in the discharge. The risk is an assessment of the environmental impacts of pollutants. The monitoring cost considers all associated monitoring expenses, such as time to sample, expense of sampling and analysis, training and equipment requirements. The objectives define the purpose of the sampling.

On June 4, 2007, the Pollution Control Hearings Board Findings of Fact, Conclusions of Law, and Order affirmed the 2005 CSWGP permit conditions for sampling, inspections, benchmarks and corrective actions but ordered Ecology to modify S4. This draft permit retains the required modifications that were included in the 2015 permit, which followed the 2005 permit conditions.

Water Quality Sampling

The monitoring frequency established in this permit for turbidity/transparency and pH are consistent with WAC 173-220-210(1)(b) and 40 CFR 122.48(b). Ecology set sampling frequencies to characterize the nature of the discharge reasonably. Other considerations included the cost of monitoring relative to the benefits obtained, and the environmental significance of the pollutants. The sampling frequency will yield data representative of discharge characteristics.

The proposed permit contains the substantially similar sampling requirements as the previous (2015) permit. The proposed minor changes include:

- To clarify the order of steps in the adaptive management process triggered by high-turbidity samples.
- To include an additional treatment method for high pH stormwater per the guidance in the Stormwater Management Manuals.

Visual Monitoring and Inspections

The Permittee must begin visual monitoring (that is, site inspections and discharge observations) the first full month following the date of coverage under the general permit. The permit requires a CESCL to conduct the site inspections at all sites one acre or larger. The requirements for a CESCL are consistent with AKART, Ecology's Stormwater Management Manuals (SWMM) BMP C160: Certified Erosion and Sediment Control Lead, and Element 12 of the Thirteen Elements of Construction Stormwater Pollution Prevention. Furthermore, this requirement is consistent with the EPA NPDES Construction Stormwater General Permit, which requires BMPs to be inspected by "qualified personnel." This requirement creates a minimum standard for training individuals who have the skills to assess site conditions and construction activities that could impact the quality of stormwater. These individuals are trained to:

- Assess the effectiveness of erosion and sediment control measures being used to control the quality of stormwater discharges.
- Properly conduct the site inspections and sampling.
- Prepare associated reporting and recordkeeping.

Monitoring includes a visual examination of stormwater for the presence of suspended sediment, turbidity, discolorations, and oil sheen. Adaptive management must be utilized to correct the problems identified. Discharge of stormwater that has come into contact with soil and/or groundwater contamination may not meet water quality standards. Discharges not meeting water quality standards are not authorized.

Consistent with the 2015 permit, the draft CSWGP requires enforceable adaptive management mechanisms including the evaluation, reporting, and documentation of remedial actions taken. Ecology established the frequency of site inspections based on three considerations. First, the nature of a construction site is such that large-scale environmental changes occur over short durations at the site. Second, rainfall and other natural or environmental forces may cause BMPs to fail. Finally, best professional judgment indicates that sites that are inspected regularly typically tend to cause fewer water quality violations. Site inspections provide timely feedback to the operator on the effectiveness of installed BMPs. Inspections provide information on when BMP repair and maintenance is necessary to improve the quality of stormwater discharged offsite, or when additional BMPs may be required. Ecology considers site inspections a requirement of AKART. Site inspections must include all areas disturbed by construction activities, all BMPs, and all stormwater discharge points under the Permittee's operational control.

Turbidity/Transparency Benchmark

The draft CSWGP carries forward the enforceable adaptive management mechanism in the 2015 permit. Adaptive management includes monitoring benchmarks. The draft permit contains a turbidity benchmark value of 25 NTU and a surrogate transparency benchmark of 33 cm.

Ecology established the turbidity benchmark for six reasons:

1. Suspended sediment (typically expressed as turbidity or total suspended solids) is the most common pollutant associated with discharges from construction sites.
2. Turbidity is relatively inexpensive to sample.
3. Turbidity does not require analysis at an accredited laboratory.
4. Turbidity is an objective indicator used to determine the effectiveness of BMPs.
5. Permittees can use an alternative method to sample turbidity (i.e., transparency).
6. Turbidity monitoring is an effective management tool for evaluating and adequately addressing the often highly variable construction stormwater discharges and associated impacts on the beneficial uses of the receiving water.

The benchmark value does not represent a water quality criterion or a numeric effluent limit; rather, it is a numeric threshold or “trigger” for adaptive management. Permittees who exceed the turbidity benchmark value must review and make appropriate revisions to the Stormwater Pollution Prevention Plan (SWPPP) and implement and maintain appropriate source control and/or treatment Best Management Practices (BMPs) within set timeframes. This adaptive management mechanism is consistent with 40 CFR 122.44 and constitutes a narrative effluent limit.

Site-specific conditions must still be considered to determine if a discharge of stormwater from a construction site is causing a water quality violation. These conditions include the background turbidity of the receiving water, and the relative volume of the discharge compared to the receiving water.

Construction sites change rapidly and have highly variable stormwater discharges (in pollutant concentrations and volumes). For this reason, Ecology requires a weekly sampling regime for these sites when stormwater is discharged from the site.

If the benchmark is exceeded in a stormwater discharge, the draft permit requires the Permittee to take appropriate actions to identify and correct the problem(s) causing the turbidity benchmark exceedance. These adaptive management actions ensure that:

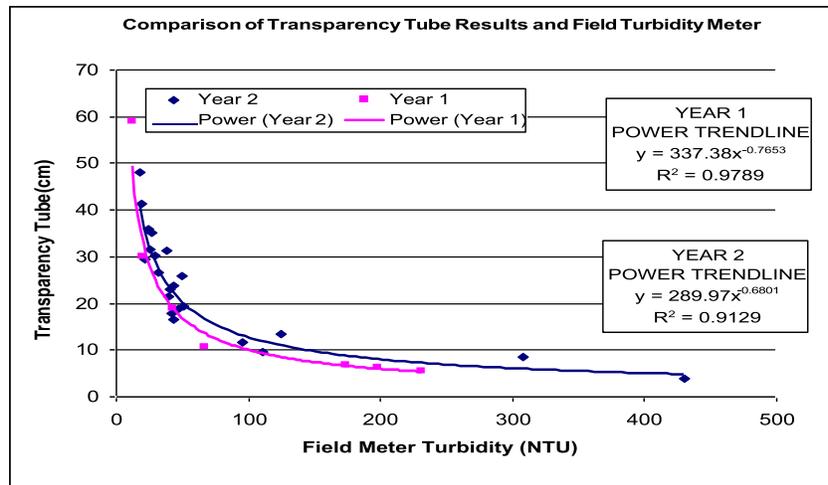
1. Aquatic life and the other beneficial uses of state waters are adequately protected by minimizing the concentrations and volumes of construction stormwater pollutants discharged into surface waters. *Effects of Turbidity and Suspended Solids on Salmonids* (Bash *et al.*, 2001) was taken into consideration. Specifically, the discussion under Chapter IV, *Effects of Turbidity and Suspended Solids on Salmonids*, contains relevant information and research findings for establishing the benchmark turbidity levels so that they adequately protect aquatic life and the other beneficial uses of state waters.
(Web link: http://www.krisweb.com/biblio/gen_uofw_bashetal_2001.pdf)
2. Permittees will meet AKART.
3. Permittees who discharge stormwater off site can demonstrate ongoing compliance with the Clean Water Act and Chapter 90.48 RCW.
4. Permittees who discharge stormwater off site have greater regulatory certainty in responding to Ecology inspections and citizen lawsuits filed under the Clean Water Act.
5. Equity exists between those with coverage under this permit and those with coverage under the

Industrial Stormwater General Permit. The draft permit contains benchmarks and enforceable adaptive management mechanisms similar to the Industrial Stormwater General Permit.

6. The best professional judgment of Ecology’s Water Quality inspection staff was taken into consideration. Collectively, these staff provide a valuable pool of experience from regular inspections of construction sites in Washington. Staff have collected numerous stormwater samples from construction sites and associated receiving waters to determine compliance with state water quality standards.

Complying with the adaptive management process does not relieve the Permittee of the responsibility of meeting permit benchmarks or other permit conditions outside of this section.

The transparency benchmark was established to reduce analytical costs to Permittees at smaller sites. Ecology derived correlation coefficients from a two-year study of construction sites. Split samples were analyzed using the turbidity meter and transparency tube. The correlation coefficient demonstrated an R2 of 0.91 indicating a very strong correlation between transparency tube measurements and turbidity meter measurements. The comparison results are depicted in the graph below.



On June 4, 2007, the Pollution Control Hearings Board (PCHB) Findings of Fact, Conclusions of Law, and Order affirmed the 25 NTU benchmark. The PCHB found that a preponderance of the credible scientific evidence presented at the hearing supports Ecology’s best professional judgment that 25 NTU is both a protective and achievable benchmark when Permittees properly implement BMPs to control and treat construction stormwater. The PCHB also affirmed the permit’s use of transparency tubes as a surrogate for turbidity for sites <5 acres and set the transparency benchmark at 33 cm, which is approximately 25 NTU turbidity².

pH Benchmark

pH is a recognized pollutant of concern from construction activities. The pH benchmark monitoring is carried forward from the 2015 permit and is an appropriate adaptive management indicator.

Ecology is concerned with pH at construction sites because these sites typically use or have alkaline materials (e.g., concrete, recycled concrete, cement, mortar, etc.). When fresh alkaline materials are exposed to stormwater runoff, they can quickly raise the pH of the stormwater.

² Washington State Department of Ecology. 2005. *Stormwater Quality Survey of Western Washington Construction Sites, 2003-2005*, Environmental Assessment Program. Publication Number 05-03-028.

Several factors play a role in the impact of high pH on surface water quality, such as size of the receiving water and its availability to buffer high pH, quantity of fresh concrete pours (i.e., surface area of exposed concrete), volume of discharge, time of day, exposure to rain, etc.

Ecology believes that use of a matrix of parameters to define a trigger for sampling is unworkable. Therefore, Ecology is proposing simple pH sampling triggers that were designed from best professional judgment and data provided by the Washington State Department of Transportation. These triggers are:

1. Greater than 1000 cubic yards placed, poured or recycled concrete.
2. The use of soil amendments (engineered soils) such as Portland cement-treated base, cement kiln dust, fly ash, etc.

All of these activities, if exposed to rainwater, have the potential to alter the pH in runoff significantly, and potentially in the receiving water. When one or more of the triggers listed above occurs, the operator must sample pH at least weekly, but at a duration as determined in condition S4.D, at the location where runoff from the affected area is collected (typically a sediment pond, or other impounded body of water onsite) prior to discharge from the site. The Permittee must neutralize the pH if it is over 8.5 standard units, prior to discharging such waters. The Permittee should collect the first sample after the first rainfall interacts with the recently applied alkaline material, because that is when pH will be the highest and therefore has the greatest potential to adversely impact the receiving water.

On June 4, 2007, the Pollution Control Hearings Board (PCHB) Findings of Fact, Conclusions of Law, and Order affirmed the pH benchmark (pH 6.5 – 8.5 su) and required that weekly monitoring of poured concrete continue throughout and after the concrete pour and curing period until stormwater pH is 8.5 or less. The PCHB's intent was to clarify the timing and duration of pH monitoring related to concrete pouring and curing. Various curing periods for different types of material can present challenges for determining when monitoring is complete. The intent is that once a sample indicates the appropriate pH range has been met, monitoring can be discontinued.

This draft permit further clarifies the timing and duration of pH monitoring related to recycled concrete. For sites with recycled concrete, the weekly pH monitoring period begins when the recycled concrete is first exposed to precipitation and must continue until the recycled concrete is fully stabilized. For purposes of this section, stabilized concrete is that which has finished curing or has some form of cover protecting it from the elements (e.g. asphalt, plastic, earthen materials, etc.). A stockpile runoff study by the Minnesota Department of Transportation indicated that the median pH runoff values from fine concrete were 9.3 and 9.8 for course concrete (Sadecki et al. 1996). The friability of recycled concrete has the ability to alter the pH in runoff until the source material is fully stabilized (ACPA 2009).

S5. REPORTING AND RECORDKEEPING REQUIREMENTS

The reporting and recordkeeping requirements of Condition S5 are based on the federal and state authorities, which allow Ecology to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges. Section 308(a)(3)(A)(v) of the Clean Water Act and 40 CFR 122.41(h) provide federal authority. RCW 90.48 and WAC 173-220-210 provide state authority. Keeping records and reporting provide practical measures that allow the Permittee and Ecology to assess compliance with the requirements of this permit.

The Permittee is required to notify Ecology within 24 hours of any significant discharges of sediment. Reporting benchmark values of 250 NTU or more (or transparency values of 6 cm or less) was established because these values provide the operator with an indication that current erosion and sediment controls are not functioning for their intended purpose. This telephone reporting approach is intended to allow the Permittee to address these issues in a timely manner and allows Ecology to prioritize technical assistance and inspection resources. The 250 NTU telephone reporting requirement meets the adaptive management approach that was required

by the now expired RCW 90.48.555(8)(a)(i) and was affirmed in the June 4, 2007 PCHB Findings of Fact, Conclusions of Law, and Order. The draft permit carries the reporting requirement forward from the 2015 permit per the anti-backsliding rules in 40 CFR 122.44(l).

In accordance with 40 CFR 122.44(i)(3-4), Special Condition S.4.C and S.5.B. require sampling results to be submitted to Ecology on Discharge Monitoring Report (DMR) forms approved by Ecology. ***DMRs are required to be filed with Ecology every month, beginning with the first full month of coverage, for the duration of permit coverage, even if there was no discharge during the monitoring period.*** These reports provide a certified record of when and where sampling has occurred, the results of the analysis, and documentation that required actions have taken place. All records must be retained for a 5-year period after the permit has been terminated [40 CFR 122.41(j)(2)].

Permittees must submit monitoring data using Ecology's WQWebDMR program. To find out more information and to sign up for WQWebDMR go to: www.ecy.wa.gov/programs/wq/permits/paris/portal.html. Permittees unable to submit electronically (for example, those who do not have an internet connection) must contact Ecology to request a waiver and obtain instructions on how to obtain and file a paper copy DMR from:

Department of Ecology
Water Quality Program
Attn: Stormwater Compliance Specialist
PO Box 47696
Olympia, WA 98504-7696

Paper copy DMRs must be mailed to the address above. Permittees must submit DMRs to Ecology within 15 days following the end of each month. If submitting paper DMRs by mail, the DMR must be postmarked or received by Ecology within 15 days following the end of each month. DMRs are required for the full duration of permit coverage, from first full month of permit coverage to final termination.

If there was no discharge during a given monitoring period, the Permittee must submit the DMR indicating no discharge. If submitting the paper form, check the “no discharge” checkbox in place of entering monitoring results.

The Permittee is required to conduct inspections, BMP maintenance, SWPPP implementation, monitoring, and reporting. The Permittee is responsible for being aware of and understanding the terms and conditions of this permit. If the Permittee is unable to comply with any of the terms and conditions of this permit for any reason, and if the noncompliance causes a threat to human health or the environment, Condition S.5.F requires the Permittee to notify Ecology immediately upon discovery. Exceedance of the numeric effluent limits related to a 303(d)-listed waterbody or applicable TMDL, or exceedance of surface water quality standards in WAC 173-201A, is cause for immediate noncompliance reporting. Noncompliance notification must be done by calling the applicable Regional office ERTS phone number to provide the appropriate permit number, project location, and contact information for the CESCL or inspector.

Permittees must submit a summary report to Ecology within five days after becoming aware of the permit violation. This report must detail the conditions that led to noncompliance, a description of when, where, and the extent of any discharges that may have occurred, characterization of the discharge, and the actions taken to correct the noncompliance. If the noncompliance cannot be corrected before the 5-day notification requirement, then the report must explain why the noncompliance continues, what interim steps have been taken to mitigate or stop further violations, and when corrective actions will be completed. The detailed written report must be submitted using Ecology's Water Quality Permitting Portal (WQWebPortal) – Permit Submittals, unless a waiver from electronic reporting has been granted. The report submittals will be stored on Ecology's Permitting and Reporting Information System (PARIS) database for public access.

Interested members of the public are welcome to request copies of SWPPPs directly from Permittees. This condition is similar to provisions in the EPA Multi-Sector Industrial Stormwater General Permit.

The draft permit does not require the Permittee to submit SWPPPs to Ecology unless specifically requested (such as when a site is contaminated and/or discharging to an impaired waterbody). The permit provides several options for public access to the plans. First, the Permittee may send the SWPPP directly to the requestor. Second, the Permittee may allow the requestor to view the SWPPP at an agreed upon location. This option allows the public access without compromising their safety on a construction site. Third, Ecology can act as a go-between for access to the SWPPP, requesting the Permittee provide the SWPPP and providing for public access at an Ecology office.

Permittees must keep a copy of the permit, Permit Coverage letter, Site Log book, site map and SWPPP on-site or within reasonable access to the site and make them available to Ecology upon request. This includes copies maintained in an electronic format. The requested information must be legible, easily accessed, and presented in a professional manner (including a screen size that is large enough for the information displayed). Any documents determined problematic to read or access by an inspector will need to be provided in an alternate format per the inspector's request. In addition, a copy of any Transfer of Coverage, Modification of Coverage, or Erosivity Waiver certification (if applicable) documentation is part of the overall Permit Coverage documentation.

S6. PERMIT FEES

RCW 90.48.465 requires Ecology to recover the cost of the water quality permit program. Stormwater fees are established through a rule development process. Any new fee proposal will provide public comment opportunity in amending the existing fee regulation (Chapter 173-224 WAC).

Some facilities may qualify for and receive an extreme hardship fee reduction under the Wastewater Discharge Permit Fee Rule (Chapter 173-224 WAC). Extreme hardship applies only if the annual sales of goods or services produced using the processes regulated under the permit is \$100,000 or less and the fee poses an extreme hardship to the business.

S7. SOLID AND LIQUID WASTE DISPOSAL

This section is intended to ensure that handling and disposal of solid or liquid wastes do not result in a violation of applicable water quality regulations (40 CFR 122.44(k)(2), 40 CFR 125.3(g), RCW 90.48.080, and WAC 173-216-110(1)(f)).

Stormwater control activities such as containment, collection, separation and settling may result in the generation of solid and liquid wastes. Housekeeping and other site management activities may generate solid and liquid wastes such as drip traps, cleanup of process areas and removal of spill materials. Proper disposal of liquid and waste materials is required. This permit requirement is intended to prevent the discharge of trash, chemicals, and other polluting materials into waters of the state.

Local jurisdictions may have other requirements that must be met. Permittees should check with the local jurisdiction for more information.

S8. DISCHARGES TO 303(d) OR TMDL WATERBODIES

Condition S8 of the permit is covered in this Fact Sheet under Water Quality-Based Limits for Numeric Criteria - Numerical Effluent Limits and Discharges to 303(d) or TMDL Waterbodies, above.

S9. STORMWATER POLLUTION PREVENTION PLAN REQUIREMENTS

In accordance with 40 CFR 122.44(k) and 40 CFR 122.44 (s), the draft general permit includes requirements for the development and implementation of SWPPPs along with BMPs to minimize or prevent the discharge of pollutants to waters of the state. The BMPs in the proposed Permit constitute:

- Best Practicable Control Technology Currently Available (BPT), (40 CFR §450.21).
- Best Conventional Pollutant Control Technology (BCT), (40 CFR §450.22).
- Best Available Technology Economically Achievable (BAT), 40 CFR §450.23). New Source Performance Standards representing the degree of effluent reduction attainable by application of the best available demonstrated control technology (NSPS), (40 CFR §450.24).

Ecology has determined that Permittees in full compliance with the Construction Stormwater General Permit meet the state AKART (all known and reasonable methods of prevention control and treatment) requirements in Chapter 90.48 RCW.

The objectives of the SWPPP are to:

1. Implement BMPs to prevent erosion and sedimentation, and to identify, reduce, eliminate or prevent stormwater contamination and water pollution from construction activity.
2. Prevent violations of surface water quality, ground water quality, or sediment management standards.
3. Prevent adverse water quality impacts including impacts to beneficial uses of the receiving water by controlling peak flow rates and volumes of stormwater runoff at the Permittee's outfalls and downstream of the outfalls during the construction phase of a project.

Condition S.9 outlines specific requirements to prepare, implement, and modify the SWPPP. Permittees must prepare and fully implement the SWPPP, including narrative and drawings, in accordance with this permit. The SWPPP must address all phases of the construction project, beginning with initial soil disturbance until final site stabilization. All BMPs used or planned for a project (or specific phase of a project) must be clearly referenced in the SWPPP narrative and marked on the drawings and site map.

The SWPPP narrative must include documentation to explain and justify the pollution prevention decisions made for the project. Documentation must include:

1. Information about existing site conditions (topography, drainage, soils, vegetation, etc.).
2. Potential erosion problem areas.
3. The 13 elements of a SWPPP listed in S9.D.1-13 of the permit, including BMPs used to address each element.
4. Construction phasing/sequence and BMP implementation schedule.
5. The actions to be taken if BMP performance goals are not achieved.
6. Engineering calculations for ponds, treatment systems, and any other designed structures.
7. The site log book required by condition S4.A.

Consistent with the 2015 CSWGP, condition S9.B.2 in the draft permit contains an enforceable adaptive management mechanism to trigger SWPPP modifications when problems are noted during site inspections. Specifically, Condition S9.B.2 requires the Permittee to modify the SWPPP if, during inspections or investigations conducted by the Permittee's CESCL or the applicable local or state regulatory authority, the SWPPP is determined to be, or would be, ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site.

The development and implementation of the SWPPP is one of the most important parts of a permit and is critical to the successful control of stormwater pollution. These plans are to be “living documents” that change during the actual construction phases in order to meet the needs of changing site conditions. The SWPPP must be modified as necessary to include additional or modified BMPs designed to correct the specific problems identified. These adaptive management requirements are designed to result in permit compliance and prevent stormwater discharges that could cause a violation of state water quality standards. Revisions to the SWPPP must be completed within seven days following the inspection and must include an updated timeline for BMP implementation this timeframe. BMP revisions must be implemented on site in a timely manner.

The SWPPP must also be modified 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. This requirement is consistent with federal technology-based requirements for Best Conventional Pollutant Control Technology (BCT) and Best Available Technology Economically Achievable (BAT) and the state requirement for AKART (90.48.010 RCW, WAC 173-226-070(1)(d)).

Consistent with the 2015 CSWGP and 40 CFR 122.44, the draft permit contains a narrative effluent limitation that requires the implementation of BMPs that are contained in stormwater technical manuals approved by Ecology, or practices that are demonstrably equivalent to practices contained in stormwater technical manuals approved by Ecology. If an applicant for coverage under the CSWGP intends to use a BMP selected on the basis of Condition S9.C.4 (“demonstrably equivalent” BMPs), the applicant shall notify Ecology of its selection as part of its NOI, unless the selection is made after submission of the NOI, in which case notice of the selection of an equivalent BMP shall be provided no less than 60 days before intended use of the equivalent BMP (see S2.A.1.d.).

This is intended to ensure that BMPs will prevent violations of state water quality standards, satisfy the state AKART requirements, and the federal technology-based treatment requirements under 40 CFR part 125.3. Specifically, condition S.9.C states that BMPs must be consistent with:

1. Stormwater Management Manual for Western Washington (most current edition approved at the time this permit was issued), for sites west of the crest of the Cascade Mountains;
2. Stormwater Management Manual for Eastern Washington (most current edition approved at the time this permit was issued), for sites east of the crest of the Cascade Mountains; or
3. Other stormwater management guidance documents or manuals that provide an equivalent level of pollution prevention and are approved by Ecology; or
4. Documentation in the SWPPP that the BMPs selected provide an equivalent level of pollution prevention, compared to the applicable Stormwater Management Manuals, including:
 - a. The technical basis for the selection of all stormwater BMPs (scientific, technical studies, and/or modeling) that support the performance claims for the BMPs being selected.
 - b. An assessment of how the selected BMP will satisfy AKART requirements and the applicable federal technology-based treatment requirements under 40 CFR part 125.3.

SWPPP Map Contents and Requirements

The SWPPP must include a vicinity map or general location map with enough detail to identify the location of the construction site and receiving water within one mile of the site. The map is a living document and should be updated throughout the construction project. The draft permit carries forward the map requirements is the 2010 permit including identifying the following features, unless not applicable due to site conditions:

1. The direction of north, property lines, and existing structures and roads.
2. Cut and fill slopes indicating the top and bottom of slope catch lines.
3. Approximate slopes, contours, and direction of stormwater flow before and after major grading activities.

4. Areas of soil disturbance and areas that will not be disturbed.
5. Locations of structural and nonstructural controls (BMPs) identified in the SWPPP.
6. Locations of off-site material, stockpiles, waste storage, borrow areas, and vehicle/equipment storage areas.
7. Locations of all surface water bodies, including wetlands.
8. Locations where stormwater or non-stormwater discharges off-site and/or to a surface waterbody, including wetlands.
9. Location of water quality sampling station(s), if sampling is required by state or local permitting authority.
10. Areas where final stabilization has been accomplished and no further construction-phase permit requirements apply.
11. Location or proposed location of LID facilities.

Operation and Maintenance

The Permittee must properly operate and maintain all BMPs for stormwater management. The SWPPP must include operation and maintenance (O&M) practices for the proper management of the site. By operating and maintaining appropriate BMPs, the risk of water quality pollution is minimized and the ability of the Permittee to comply with this permit is improved.

40 CFR 122.41(e) requires the Permittee to properly operate and maintain all facilities. The SWPPP must contain adequate O&M procedures to ensure that BMPs are functioning properly to control discharges [40 CFR 122.44(k)]. Authority is also provided by RCW 90.48.080, RCW 90.48.520, and WAC 173-216-110(1)(f).

This section also outlines the 13 elements that the SWPPP must include and that the Permittee must implement unless site conditions render the element unnecessary and the exemption from that element is clearly justified in the SWPPP narrative. These elements have been updated to reflect the most current EPA effluent limitation guidelines “ELG” (EPA, 2014). The 13 elements are:

1. Preserve Vegetation/Mark Clearing Limits
2. Establish Construction Access
3. Control Flow Rates
4. Install Sediment Controls
5. Stabilize Soils
6. Protect Slopes
7. Protect Drain Inlets
8. Stabilize Channels and Outlets
9. Control Pollutants
10. Control Dewatering
11. Maintain BMPs
12. Manage the Project
13. Protect Low Impact Development (LID) BMPs

The technical rationale for each of these elements is described in the subsequent sections of the Fact Sheet. The 13 elements work together as part of a larger treatment train and may not be effective individually.

1. Preserve Vegetation/Mark Clearing Limits

Site operators must maintain the duff layer, native topsoil, and natural vegetation in an

undisturbed state to the maximum extent practicable. This requirement is partly based on the fundamental principle that vegetation is the most effective form of erosion control (Goldman et al. 1986). Vegetation reduces runoff volume, reduces flow velocity, filters suspended sediment, absorbs the erosive energy of falling raindrops, and retains soil structure (WSDOT 2000).

Since little soil erosion occurs on areas covered with undisturbed vegetation, Permittees should mark clearing limits so that soils and vegetation outside of the immediate area of construction activity are protected. In addition, wetlands, and other types of sensitive areas that are intended to be preserved must be clearly marked so that they are not damaged inadvertently during construction activity.

Plastic, metal, or stake wire fencing material is durable and weather resistant and is ideal for marking clearing limits at construction sites.

2. Establish Construction Access

The purpose of stabilizing entrances to construction sites is to minimize the amount of sediment and mud being tracked off-site by motorized vehicles. Installing and maintaining a pad of quarry spalls, crushed rock or other equivalent BMPs over filter cloth where construction traffic leaves a site can help stabilize the egress and minimize sediment tracked onto roads. As a vehicle drives over the stabilized construction access, mud and other sediments are loosened and removed from the vehicle's wheels thereby reducing the off-site transport of sediment. The pad also reduces mechanical erosion and prevents the formation of muddy wheel ruts, which can be a source of "track-out." The filter fabric reduces the amount of rutting caused by vehicle tires by spreading the vehicle's weight over a larger soil area than just the tire width. The filter fabric also separates the gravel from the soil below, preventing the gravel from being ground into the soil (EPA 2002a).

Quarry spalls used to stabilize the construction site access should be large enough so that they are not carried off-site on tires, which can result in property damage. Site operators should avoid sharp-edged stone to reduce the possibility of puncturing tires. According to EPA (2002a, EPA 2002b), stone should be installed at a depth of at least 6 inches for the entire length and width of the stabilized construction access. BMP C105: Stabilized Construction Entrance/Exit in the Stormwater Management Manual for Western Washington prohibits the use of crushed concrete, cement, or calcium chloride for construction entrance stabilization because these products raise pH levels in stormwater and concrete discharge to surface waters of the State is prohibited.

WSDOT and Ecology have also seen successful application of steel plates used to provide a stabilized construction entrance; this is an acceptable substitute to traditional quarry spall access areas.

Limiting construction site access to one point minimizes the surface area that could be affected by tracked out mud and sediment from construction traffic.

If the stabilized construction access does not adequately prevent sediment from being tracked off-site adequately, the site operator must locate a wheel wash or tire bath on-site. Wheel wash systems remove mud from construction vehicles on site and reduce the amount of sediment transported onto paved roads. Wastewater from wheel washing or street washing activity is typically sediment laden with very high levels of turbidity. In addition, this wastewater may contain other pollutants such as metals, phosphorus, polymers, and/or oil and grease at levels that may harm to aquatic life. As a result, site operators must discharge wheel wash and street wash wastewater to a separate on-site treatment system, such as closed-loop recirculation or land application, or to a sanitary sewer with local approval.

3. Control Flow Rates

Construction activity may involve clearing vegetation, removing or compacting native soils, modifying slopes and drainage patterns, and installing impervious surfaces such as rooftops or

roads. Any of these activities may increase the volume, velocity, and peak flow rate of stormwater runoff from the site. These hydrologic changes can cause erosion, scouring, and down-cutting in channels located downstream of the construction site, ultimately increasing turbidity and suspended solids in affected waterbodies and damaging aquatic habitat.

Properly designed flow control facilities, such as retention or detention structures that discharge at pre-disturbance peak flow rates and durations, can protect downstream waterways from increased bank erosion, channel instability, and water quality degradation. The EPA ELGs require the control of stormwater volume and velocity to minimize soil erosion in order to minimize pollutant discharges (EPA 2014).

If the SWPPP requires stormwater detention facilities, all engineered structures must be constructed according to design. Site operators must construct these structures as one of the first steps in the construction sequence so that all runoff from construction activity is treated and controlled. If a site uses permanent infiltration facilities for flow control during construction, the operator must protect these facilities from sedimentation during the construction phase through the use of sediment traps/basins and/or other appropriate BMPs. Failure to protect infiltration facilities from sedimentation will typically clog the soil horizon in the structure and reduce the infiltration capacity. This performance reduction can cause downstream erosion and water quality degradation.

4. Install Sediment Controls

Sediment control systems create conditions that allow for the settlement of soil particles that are suspended in stormwater runoff. Sediment containment systems (sediment ponds, traps, infiltration facilities, etc.) are hydraulic controls that function by modifying the storm-runoff hydrograph and slowing water velocities. This allows suspended particles to settle by gravity. Properly designed sediment containment systems function to:

- Provide containment storage volume for stormwater runoff
- Create uniform flow zones within the containment storage volume for deposition of suspended sediment
- Discharge water at a controlled rate (Fifield 2001)

Sediment controls may not be sufficient unless the controls are part of a larger treatment train.

Goldman (1986) defines structures that treat the runoff from 2.0 hectare (or 5.0 acres) or less as a “sediment trap,” but when the surface area contributing to the structure exceeds 2.0 hectare, the structure is defined as a “sediment basin.”

Although sediment traps allow suspended sediment to settle, their short detention periods may not remove fine particles such as silts and clays without chemical treatment. To increase overall effectiveness, sediment traps should be constructed in smaller areas with low slopes. Sediment traps are appropriate where the contributing drainage area is less than 3 acres, with no unusual drainage features, and the projected built-out time is 6 months or less; otherwise, a sediment basin must be used (Ecology 2014).

Sediment traps are typically designed to remove only sediment from surface water, but some non-sediment pollutants (e.g., phosphorus, metals) are trapped as well (Haan *et al.* 1994 as cited in EPA 2002a).

A sediment basin or sediment pond is a storm water detention structure formed by constructing a dam across a drainage course or by excavating a basin with adequate storage volume in a location that intercepts runoff from the area of construction activity. Sediment basins are generally larger and more effective in retaining sediment than temporary sediment traps and typically remain active throughout the construction period. Site operators must use a sediment basin where the contributing drainage area is 3 acres or larger. Jurisdictions that require post-development flow

rates to be less than or equal to predevelopment flow rates during construction may employ the designed detention facilities as a temporary sediment basin during construction (EPA 2002a).

Sediment controls also include providing and maintaining natural buffers around surface waters, directing stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration (EPA 2014).

5. Stabilize Soils

Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating or other earth disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for more than 14 days as outlined in the ELG (EPA 2014). The EPA ELG also requires alternative stabilization in arid, semiarid, and drought-stricken areas where initiating vegetative stabilization measures immediately is infeasible (EPA 2014). Depending on the time of year and the geographic location of the project, stabilization time periods have been established ranging from 2 to 30 days. Soils should not remain exposed and unworked for more than 2 days during the wet season west of the Cascade Mountains Crest or for more than 7 days during the dry season. East of the Cascade Mountains Crest, soils should not remain exposed and unworked for more than 5 days during the wet season or for 10 days during the dry season. Soils in the Central Basin east of the Cascade Mountains Crest (the Central Basin is defined as the portions of Eastern Washington with mean annual precipitation of less than 12 inches) shall not remain exposed and unworked for greater than 15 days during the wet season or 30 days during the dry season. In limited circumstances, stabilization may not be required if the intended function of a specific area of the site necessitates that it remain disturbed; however, exposed and unworked soils must be stabilized by application of effective BMPs that prevent erosion.

Soil compaction should be minimized and, unless infeasible, topsoil should be preserved (EPA 2014). Minimization of soil compaction and topsoil preservation aids in preserving natural infiltration properties of the soil.

In areas where soils have been disturbed or exposed during construction activity, timely permanent seeding is appropriate in areas where permanent, long-lived vegetative cover is the most practical or most effective method of stabilizing the soil. Permanent seeding can be used on roughly graded areas that will not be regraded for at least a year, while temporary seed mixtures may be more appropriate for areas to be regraded in less than one year. Vegetation controls erosion by protecting bare soil surfaces from displacement by raindrop impacts and by reducing the velocity and quantity of overland flow. The advantages of seeding over other means of establishing plants include lower initial costs and labor inputs. Data have shown that seeding produces a successful stand of grass that has been shown to remove between 50 and 100 percent of total suspended solids from stormwater runoff, with an average removal of 90 percent (EPA 2002a).

Controlling stormwater volume and velocity within the site will help minimize soil erosion, as well as minimize downstream channel and stream bank erosion. The control of stormwater volume and velocity to minimized soil erosion is an effective means to help minimize pollutant discharges (EPA 2014).

Sodding is a permanent erosion control practice that involves laying a continuous cover of grass sod on exposed soils. In addition to stabilizing soils, sodding can reduce the velocity of stormwater runoff. Sodding can provide immediate vegetative cover for critical areas and stabilize areas that cannot be vegetated by seed. It can also stabilize channels or swales that convey concentrated flows and reduce flow velocities. Sod has been shown to remove between 98 and 99 percent of total suspended solids in runoff, and is considered a highly effective best management practice (EPA 1993, as cited in EPA 2002a).

Mulching is a temporary erosion control practice in which materials such as grass, hay, wood chips, wood fibers, straw, or gravel are placed on exposed or recently planted soil surfaces. Mulching is

highly recommended as a stabilization method and is most effective when anchored in place until vegetation is well established. Mulching can also reduce the velocity of stormwater runoff.

When used in combination with seeding or planting, mulching can aid plant growth by holding seeds, fertilizers, and topsoil in place; by preventing birds from eating seeds; by retaining soil moisture; and by insulating plant roots against extreme temperatures (EPA, 1992 and 2002a). Mulching effectiveness varies with the type and amount of mulch used and local conditions such as rainfall and runoff amounts. Table 3 shows soil loss and water velocity reductions relative to bare soil for several different mulch treatments.

Table 3. Measured Reductions in Soil Loss for Different Mulch Treatments

Mulch characteristics	Soil loss reduction (%)	Water velocity reduction (%) relative to bare soil
100% wheat straw/top net	97.5	73
100% wheat straw/two nets	98.6	56
70% wheat straw/30% coconut fiber	99.5	78
100% coconut fiber	98.4	77
Nylon monofilament/two nets	99.8	74
Nylon monofilament/rigid/bonded	53.0	24
Nylon monofilament/flexible/bonded	89.6	32
Curled wood fibers/top net	90.4	47
Curled wood fibers/two nets	93.5	59
Anti-wash netting (jute)	91.8	59
Interwoven paper and thread	93.0	53
Uncrimped wheat straw (2,242 kg/ha)	84.0	45
Uncrimped wheat straw (4,484 kg/ha)	89.3	59

(Sources: Harding 1990 and EPA 1993, as cited in EPA 2002a)

Geotextiles are porous fabrics also known as filter fabrics, road rugs, synthetic fabrics, construction fabrics, or simply fabrics. Geotextiles are manufactured by weaving or bonding fibers made from synthetic materials such as polypropylene, polyester, polyethylene, nylon, polyvinyl chloride, glass, and various mixtures of these materials. As a synthetic construction material, contractors use geotextiles for a variety of purposes such as separators, reinforcement, filtration and drainage, and erosion control. Some geotextiles are made of biodegradable materials such as mulch matting and netting.

Mulch mattings are jute or other wood fibers that have been formed into sheets and are more stable than normal mulch. Netting is typically made from jute, wood fiber, plastic, paper, or cotton and can be used to hold the mulching and matting to the ground. Netting can also be used alone to stabilize soils while the plants are growing; however, it does not retain moisture or temperature well. Geotextiles can aid in plant growth by holding seeds, fertilizers, and topsoil in place. Fabrics are relatively inexpensive for certain applications – a wide variety of geotextiles exist to match the specific needs of the site (EPA 1992).

Erosion control blankets with photodegradable plastic netting and yarn depend on sunlight to degrade. Shade from newly established vegetation may prevent rapid degradation of netting and yarn, which could pose a trapping hazard to birds and other wildlife. To prevent detrimental impacts to wildlife, Permittees should use biodegradable nets and blankets so that no synthetic residues remain on-site after vegetation is established.

6. Protect Slopes

The SWPPP should address the steepness of cut-and-fill slopes and how the slopes will be protected from runoff, stabilized, and maintained. Berms, diversions, and other storm water practices that require excavation and filling should also be incorporated into the grading plan. Land grading is an effective means of reducing steep slopes and stabilizing highly erodible soils when implemented with stormwater management and erosion and sediment control practices in mind. Land grading is not effective when drainage patterns are altered or when vegetated perimeter areas are damaged (EPA 2002).

Site operators should not allow runoff from undisturbed areas above those that have been denuded or cleared to drain onto exposed soils, particularly when the denuded areas are on slopes. Dikes, ditches or diversions should be used to divert upland runoff away from a disturbed area to a stable outlet (Goldman 1986).

A dike is a temporary or permanent ridge of soil designed to channel water to a desired location. Dikes are used to divert the flow of runoff by constructing a ridge of soil that intercepts and directs the runoff to the desired outlet or alternative management practice, such as a pond. This practice serves to reduce the length of a slope for erosion control and protect down-slope areas. An interceptor dike can be used to prevent runoff from going over the top of a cut and eroding the slope, directing runoff away from a construction site or building, to divert clean water from a disturbed area, or to reduce a large drainage area into a more manageable size. Dikes should be stabilized with vegetation after construction (NAHB no date as cited by EPA 2002a).

To prevent erosive velocities from occurring on long or steep slopes, site operators should install terraces on the slope at regular intervals. Terraces will slow down the runoff and provide a place for small amounts of sediment to settle. Slope benches are usually constructed with ditches along them or are back-sloped at a gentle angle toward the hill. These benches and ditches intercept runoff before it can reach an erosive velocity and divert it to a stable outlet. The slopes of these cross-slope channels should be gentle, and the channels should be protected with erosion resistant linings if the velocities in the channels will exceed the tolerance of the bare soil surface (Goldman et al. 1986).

Recently graded slopes that do not have permanent drainage measures installed should have a temporary slope drain and a temporary diversion installed. A temporary slope drain used in conjunction with a diversion conveys storm water flows and reduces erosion until permanent drainage structures are installed (EPA 2002a). At the top of slopes, collect drainage in pipe slope drains or protected channels to prevent erosion using the following design standards:

- West of the Cascade Mountains Crest: Temporary pipe slope drains shall handle the expected peak 10-minute flow rate from a 10-year, 24-hour event assuming a Type 1A rainfall distribution. Alternatively, the 10-year and 25-year, 1-hour flow rates indicated by an approved continuous runoff model, increased by a factor of 1.6, may be used (Ecology 2014).
- East of the Cascade Mountains Crest: Temporary pipe slope drains shall handle the expected peak flow rate from a 6-month, 3-hour storm for the developed condition, referred to as the short duration storm (Ecology 2004).

7. Protect Drain Inlets

Storm drain inlet protection measures are controls that help prevent soil and debris from on-site erosion from entering storm drain drop inlets. Typically, these measures are temporary controls that are implemented prior to large-scale disturbance of the surrounding site. These controls are advantageous because their implementation allows storm drains to be used during even the early stages of construction activities. The early use of storm drains during project development significantly reduces the occurrence of future erosion problems (Smolen et al. 1988 as referenced by

EPA 2002a). Inlet protection (such as a filter sock) may not be sufficient unless it is part of a larger treatment train.

According to EPA (2002a), three temporary control measures to protect storm drain drop inlets are:

- Excavation around the perimeter of the drop inlet
- Fabric barriers around inlet entrances
- Block and gravel protection

Excavation around a storm drain inlet creates a settling pool to remove sediments. Weep holes protected by gravel are used to drain the shallow pool of water that accumulates around the inlet. A fabric barrier made of porous material erected around an inlet can create an effective shield to sediment while allowing water to flow into the storm drain. This type of barrier can slow runoff velocity while catching soil and other debris at the drain inlet. Block and gravel inlet protection uses standard concrete blocks and gravel to form a barrier to sediments while permitting water runoff through select blocks that are laid sideways (EPA 2002a).

In addition to the materials listed above, limited temporary storm water drop inlet protection can also be achieved with the use of straw bales or sandbags to create barriers to sediment.

For permanent storm drain drop inlet protection after the surrounding area has been stabilized, sod can be installed as a barrier to slow stormwater entry to storm drain inlets and capture sediments from erosion. This final inlet protection measure can be used as an aesthetically pleasing way to slow storm water velocity near drop inlet entrances and remove sediments and other pollutants from runoff (EPA 2002a).

A wide variety of commercial catch basin filters are available to protect storm drains from sedimentation. Filter inserts must be installed and maintained per manufacturer specifications. The limited sediment storage capacity of many commercial catch basin filters increases the amount of inspection and maintenance required, which may be daily for heavy sediment loads. The maintenance requirements can be reduced by combining a catch basin filter with another type of inlet protection. The filter should have a high-flow bypass that will not clog under normal use (Ecology 2014).

8. Stabilize Channels and Outlets

Lined channels convey stormwater runoff through a stable conduit. Vegetation lining the channel reduces the flow velocity of concentrated runoff. Lined channels are not usually designed to control peak runoff loads by themselves and are often used in combination with other BMPs such as subsurface drains and riprap stabilization. Where moderately steep slopes require drainage, lined channels can include excavated depressions or check dams to enhance runoff storage, decrease flow rates, and enhance pollutant removal.

Peak discharges can be reduced through temporary detention in the channel. Pollutants can be removed from stormwater by filtration through vegetation, by deposition, or in some cases by infiltration of soluble nutrients into the soil. The degree of pollutant removal in a channel depends on the residence time of the water in the channel and the amount of contact with vegetation and the soil surface, but pollutant removal is not generally the major design criterion.

Construction activity often increases the velocity and volume of stormwater runoff, which causes erosion in newly constructed or existing urban runoff conveyance channels. If the runoff during or after construction will cause erosion in a channel, the channel should be lined or flow control practices should be instituted. The first choice of lining should be grass or sod since this reduces runoff velocities and provides water quality benefits through filtration and infiltration. If the velocity in the channel would erode the grass or sod, riprap, concrete, or gabions can be used (EPA 2000a).

Geotextile materials can be used in conjunction with either grass or riprap linings to provide additional protection at the soil-lining interface.

Rock outlet structures placed at the outfall of channels or culverts reduce the velocity of flow in the receiving channel to non-erosive rates. This practice applies where discharge velocities and energies at the outlets of culverts are sufficient to erode the next downstream reach and is applicable to outlets of all types such as sediment basins, stormwater management ponds, and road culverts.

On-site conveyance channels must be designed, constructed, and stabilized to prevent erosion from the following expected peak flows:

- West of the Cascade Mountains Crest: 10-minute flow rate from a Type 1A, 10- year, 24-hour frequency storm for the developed condition. Alternatively, the 10- year, 1-hour flow rate indicated by an approved continuous runoff model, increased by a factor of 1.6, may be used (Ecology 2014).
- East of the Cascade Mountains Crest: peak flow rate from the 6-month, 3-hour storm for the developed condition, referred to as the short duration storm (Ecology 2004).

9. Control Pollutants

The most significant pollutant associated with construction activity at most sites is sediment. Total suspended solids (TSS) concentrations from uncontrolled construction sites have been found to be up to 150 times greater than concentrations from undeveloped land (EPA 2002a).

As early as 1990, while conducting the Phase I stormwater rulemaking, EPA identified nonconventional and toxic pollutants of concern in discharges from construction sites stating “[c]onstruction sites can also generate other pollutants such as phosphorus, nitrogen, and nutrients from fertilizer, pesticides, petroleum products, construction chemicals and solid wastes.” 55 Fed. Reg. 47,990, 48,033 (Nov. 16, 1990), 40 CFR Parts 122, 123, and 124.

Ecology has documented the potential for other pollutants to be discharged from construction sites depending on factors such as prior land uses. For example, if the prior land use was agriculture, there is the potential for discharge of pollutants such as nutrients and pesticides. Likewise, areas of redevelopment that occur on sites where previous land uses included industry could discharge pollutants such as organics and metals.

During the development of EPA’s Effluent Limitations Guidelines for the Construction and Development Sector, some commenters urged EPA to establish numeric effluent limitations for pollutants other than turbidity (such as pH). Many of the pollutants of concern are sediment-bound pollutants, such as metals and nutrients. The non-numeric effluent limitations in the final ELG rule address the mobilization of sediment and the discharge of these sediment-bound pollutants (40 CFR 450.21). The final rule includes a non-numeric effluent limitation that prohibits the discharge of wastewater from washout of concrete, unless managed by an appropriate control (40 CFR 450.21(e)). This requirement was included to specifically address concerns with pH. According to EPA, “if permitting authorities have concerns regarding the discharge of other pollutants they may be addressed with numeric effluent limitations on case-by-case basis through NPDES permits” (EPA 2009).

Ecology’s proposed permit carries forward the requirements to prevent contamination of stormwater by pH-modifying sources from the 2015 permit. Recycled concrete was added to the 2015 draft permit list of potential pH-modifying sources. BMPs are required to prevent contamination of stormwater runoff by pH-modifying sources and to comply with AKART. The permit requires pH adjustment of stormwater or authorized non-stormwater if necessary to prevent an exceedance of groundwater and/or surface water quality standards.

The draft permit maintains the 2015 permit requirement that the washout of concrete trucks must be performed off-site or in designated concrete washout areas. In addition, the draft permit clarifies

that concrete truck drums should not be washed-out on the ground, or into storm drains, open ditches, streets, or streams.

Any chemical treatment of stormwater and/or authorized non-stormwater that will discharge from the site will require written approval from Ecology with the exception of CO₂, dry ice, or food grade vinegar used to adjust pH. Examples of chemical treatment requiring approval are Chitosan Enhanced Sand Filtration and electrocoagulation.

The draft permit carries forward the requirements from the 2015 permit to address pollutant handling and storage to comply with AKART. Specifically, Permittees must provide cover, containment, and protection from vandalism 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 must include secondary containment to prevent the discharge of petroleum to waters of the state (Ecology 2014). Double-walled tanks do not require additional secondary containment.

According to EPA (2002a), construction site operators use various practices to manage waste materials from construction activities and minimize discharges to surface waters, including:

- Neat and orderly storage of chemicals, pesticides, fertilizers, and fuels that are stored on-site.
- Regular collection and disposal of trash and sanitary waste.
- Prompt cleanup of spills of liquid or dry materials.

This draft permit carries forward the prohibition of the discharge of slurry materials and waste from shaft drilling. The draft permit maintains that the discharge of uncontaminated water from water-only shaft drilling for the construction of building, road, and bridge foundations is prohibited unless infiltrated and managed in a way that prohibits discharge to surface waters. Prior to infiltration, water from water-only based shaft drilling that comes into contact with curing concrete should be neutralized until pH is in the range of 6.5 to 8.5 su to comply with groundwater quality standards (Chapter 173-200 WAC).

10. Control Dewatering

Untreated water from construction dewatering operations may contain pollutants that, if discharged to a storm drainage system or natural water course, would cause violations of water quality standards in the receiving water. The intent of federal and state regulations is to prevent discharges from dewatering operations from contributing to the violation of water quality standards (Caltrans 2001).

Sediment is the most common pollutant associated with dewatering operations on construction sites. When water is not visibly clear of sediment or when the dewatering operation may re-suspend sediments, one or more sediment treatment options may need to be implemented. The size of particles present in the sediment is a key consideration for selecting the appropriate sediment treatment option(s).

- If the sediment consists primarily of gravel or sand, which are relatively large particles, a single treatment using a more basic technology, such as a weir tank, may be adequate.
- If the sediment consists of silt and/or clay, which are relatively small particles, the effluent will most likely need a more advanced technology, such as a sand media particulate filter or cartridge filter.
- If the sediment consists of a broad spectrum of particle sizes, the water may need primary treatment to remove larger particles, followed by secondary treatment to remove finer particles (Caltrans 2001).

The slope and accessibility of the treatment area may limit the selection of an appropriate system. The Permittee should evaluate the site to determine the most effective system layout, access, dewatering

storage, pumping requirements (flow, pressure, and duration), ancillary piping, backwash tanks, a low impact discharge system, and any other site-specific requirements.

The applicability and use of dewatering devices on a construction project are specific to the individual job and treatment needs. The vendors who rent and sell these products can provide assistance to engineer a dewatering management program to meet the specific job conditions. Permittees may need multiple devices and treatment techniques may be necessary to meet the treatment criteria (Caltrans 2001). Written approval to use chemical treatment is required.

Other pollutants that may result from dewatering, as defined in Federal and State laws and regulations, tend to be site-specific and are often associated with current or past use of the construction site or adjacent land. Pollutants may include: nitrogen and phosphate from fertilizers; organic materials from plant waste; metals such as arsenic, cadmium, copper, and lead; and constituents that affect pH or hardness. Other pollutants include oil, grease, pesticides, solvents, fuels, trash, and bacteria from human/animal wastes (Caltrans 2001).

EPA's Effluent Limitations Guidelines requires Permittees to minimize the discharge of pollutants from dewatering trenches and excavations. Discharges are prohibited unless managed by appropriate controls (40 CFR 450.21(c)).

Permittees can discharge clean (uncontaminated), non-turbid, dewatering water, such as well-point *groundwater*, to systems tributary to, or directly into *surface waters of the State*, as specified in S9.D.10, provided the dewatering flow does not cause erosion or flooding of *receiving waters*. To prevent the contamination of relatively clean dewatering water, it should not be routed through *stormwater sediment* ponds. The rationale for this condition is based on Ecology's experience that comingling relatively clean dewatering water with turbid stormwater creates a larger volume of turbid water. Segregating the clean dewatering water from the turbid stormwater pond minimizes the volume of turbid water that requires treatment, and preserves the storage capacity of sediment ponds.

Depending on the pollutants present, other dewatering treatment or disposal options may include:

- Infiltration.
- Transport offsite in a vehicle, such as a vacuum flush truck, for legal disposal in a manner that does not pollute state waters.
- Ecology-approved on-site chemical treatment or other suitable treatment technologies.
- Sanitary sewer discharge with local sewer district approval, if there is no other option.
- Use of a sedimentation bag with outfall to a ditch or swale for small volumes of localized dewatering (Ecology 2014).

11. Maintain BMPs

Probably the most common reason for failure of construction site erosion control devices (BMPs) is inadequate maintenance. BMPs are often reluctantly installed and then ignored. If BMPs are properly constructed, but not properly and frequently maintained, little benefit may be expected. Newly installed devices will perform as initially expected until their "capacity" is exceeded. Filter fences, for example, should be maintained before the material that accumulates behind them becomes excessive. More importantly, the integrity of the fence needs to be checked frequently. Filter fences at construction sites are often undermined or bypassed because of large flows or large sediment accumulations. Sedimentation basins, silt traps, catch basins, etc., need to be cleaned frequently. The cleaning frequency of these devices located in areas undergoing construction should be quite high because of the very large discharges of sediment from construction sites. Rill or gully erosion must be corrected immediately when first observed. Similarly, mulched or planted areas need frequent inspections and corrections before large amounts of material are lost (Pitt 2002).

According to Associated General Contractors of Washington Education Foundation (2003), to maintain the effectiveness of construction site storm water control BMPs, regular inspection of control measures is essential. Generally, inspection and maintenance of BMPs can be categorized into two groups: expected routine maintenance and non-routine (repair) maintenance. Routine maintenance refers to checks performed on a regular basis to keep the BMP in good working order and aesthetically pleasing. In addition, routine inspection and maintenance is an efficient way to:

- Prevent potential nuisance situations (odors, mosquitoes, weeds, etc.).
- Reduce the need for repair maintenance.
- Reduce the chance of polluting stormwater runoff by finding and correcting problems before the next rain.

During each inspection, the inspector should document whether the BMP is performing correctly, any damage to the BMP since the last inspection, and what repairs are necessary if damage has occurred.

12. Manage the Project

Permittees must phase or sequence development projects in order to minimize the amount of exposed soil at any one time and prevent the transport of sediment from the site during construction. Construction sequencing can be an effective tool for erosion and sediment control because it ensures that management practices are installed where necessary and when appropriate. A comparison of sediment loss from a typical development and from a comparable phased project showed a 42 percent reduction in sediment export in the phased project (Claytor 1997 as cited in EPA 2002a).

As discussed previously, the proposed permit implements 40 CFR 122.44 with an enforceable adaptive management mechanism. Permittees are required to evaluate BMP performance and discharge water quality. Based on the results of inspections and monitoring, remedial actions must be implemented, documented and reported in accordance with specific timeframes.

13. Protect Low Impact Development (LID) BMPs

Low Impact Development (LID) BMPs and On-site LID Stormwater Management BMPs are designed to reduce the disruption of the natural site hydrology. LID BMPs are permanent facilities designed to infiltrate, disperse, and retain stormwater runoff on site to the maximum extent practicable without causing flooding or erosion impacts. This draft permit includes protection of LID BMPs that are pending construction as well as the protection of LID BMPs that are already present on site. Local governments under the Municipal Stormwater Permits may require projects to use these BMPs to gain compliance with Minimum Requirement #5 – On-site Stormwater Management.

All LID BMPs must be protected from sedimentation through installation and maintenance of erosion and sediment control BMPs on portions of the site that drain into these areas. Restoration of the facilities to their fully functioning condition is required if they accumulate sediment during construction. Restoration of the facility must include removal of sediment and any sediment-laden Bioretention/Rain Garden soils, and replacing the removed soils with soils meeting the design specification.

Prevent compaction of LID BMPs by excluding construction equipment and foot traffic. Protection of completed lawn and landscaped areas from compaction due to construction equipment is required. All heavy equipment must be kept off existing soils under LID facilities that have been excavated to final grade to retain the infiltration rate of the soils.

Erosion control and avoiding the introduction of sediment from surrounding land uses onto permeable pavements is required. Muddy construction equipment on the base material or pavement is not allowed and sediment-laden runoff must be kept off permeable pavements. Permeable pavements fouled with sediments or no longer passing an initial infiltration test using local stormwater manual methodology or the manufacturer's procedures must be cleaned.

S10. NOTICE OF TERMINATION

Condition S10.A states that a site is eligible for termination when any of the following conditions have been met:

1. The site has undergone final stabilization¹, all temporary BMPs have been removed, and all stormwater discharges associated with construction activity have been eliminated²; or
2. All portions of the site that have not undergone final stabilization per S10.A.1 have been sold and/or transferred (per Special Condition S2.A.2), and the Permittee no longer has operational control of the construction activity; or
3. For residential construction only, temporary stabilization³ has been completed and the ownership of the residence has been transferred⁴ to the homeowner.

The 2010 CSGWP addressed situations where a homebuilder transfers (sells) a home to a homeowner prior to the landscaping being finished. In some cases, the homeowner elects to take ownership of the property and finish the landscaping and/or planting permanent vegetation. In these instances, the Permittee (typically the homebuilder) may terminate permit coverage, provided temporary stabilization has been completed and the residence has been sold or otherwise transferred to the homeowner.

The 2015 CSWGP clarifies that Permittees are required to comply with all conditions and effluent limitations in the permit until the permit has been terminated. The PCHB No. 14-016c Order of Motions dated December 3, 2014 required the CSWGP clarify if the permit is in effect until terminated. The 2015 CSWGP clarifies that the termination will be effective on the thirty-first calendar day following the date Ecology receives a complete Notice of Termination (NOT) form, unless Ecology notifies the Permittee that termination request is denied because the Permittee has not met the eligibility requirements. This emphasizes that Ecology has a 30-day review period to determine if the termination can be granted or denied.

Ecology considered allowing partial terminations of permit coverage. For example, terminating permit coverage on portions of the project that meet the criteria for final stabilization, and retaining permit coverage on the other (unstabilized) portions of the site. Ecology has chosen not to allow partial terminations due to the increased administrative costs that would result and the field staff resources that would be diverted from other aspects of permit implementation.

When permit coverage for the entire site is eligible for termination, the Permittee must submit a complete and accurate Notice of Termination (NOT) form to Ecology.

¹ **Final Stabilization** (same as *fully stabilized* or *full stabilization*) means the completion of all soil disturbing activities at the site and the establishment of permanent vegetative cover, or equivalent permanent stabilization measures (such as pavement, riprap, gabions, or geotextiles) which will prevent erosion. See the applicable Stormwater Management Manual for more information on equivalent permanent stabilization measures.

² Stormwater discharges from temporarily inactive construction sites (i.e., disturbed, but construction activity has temporarily stopped; or is shut-down, between phases, dormant, or otherwise not complete) are not considered “eliminated” and the site would not be considered “final stabilized”. Therefore temporarily inactive construction sites require permit coverage, and are not eligible for termination under Condition S10.A.1.

³ **Temporary Stabilization** means the exposed ground surface has been covered with appropriate materials to provide temporary stabilization of the surface from water or wind erosion. Materials include, but are not limited to, mulch, riprap, erosion control mats or blankets and temporary cover crops. Seeding alone is not considered stabilization. Temporary stabilization is not a substitute for the more permanent “final stabilization.”

⁴ In the context of S10.A.3, “transfer” typically means “sold”; it does not mean a “transfer of general permit coverage” per Condition S2.A.2.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations.

Condition G1 requires discharges and activities authorized by the draft permit to be consistent with the terms and conditions of the permit in accordance with 40 CFR 122.41.

Condition G2 requires responsible officials or their designated representatives to sign submittals to Ecology in accordance with 40 CFR 122.22, 40 CFR 122.22(d), WAC 173-220-210(3)(b), and WAC 173-220-040(5).

Condition G3 requires the Permittee to allow Ecology to access the facility and conduct inspections of the facility and records related to the permit in accordance with 40 CFR 122.41(i), RCW 90.48.090, and WAC 173-220-150(1)(e).

Condition G4 identifies conditions that may result in modifying or revoking the general permit in accordance with 40 CFR 122.62, 40 CFR 124.5, and WAC 173-226-230.

Condition G5 identifies conditions for revoking coverage under the general permit in accordance with Chapter 43.21B RCW and Chapter 173-226 WAC. 40 CFR 122.62, 40 CFR 124.5, WAC 173-226-240, WAC 173-220-150(1)(d), and WAC 173-220-190.

Condition G6 requires the Permittee to notify Ecology when facility changes may require modification or revocation of permit coverage in accordance with 40 CFR 122.62(a), 40 CFR 122.41(l), and WAC 173-220-150(1)(b).

Condition G7 prohibits the Permittee from using the permit as a basis for violating any laws, statutes or regulations in accordance with 40 CFR 122.5(c).

Condition G8 requires the Permittee to reapply for coverage 180 prior to the expiration date of this general permit in accordance with 40 CFR 122.21(d), 40 CFR 122.41(b), and WAC 173-220-180(2) (Note: This would only apply to long term projects or to sites with permit coverage near the time of permit expiration).

Condition G9 prohibits the reintroduction of removed substances back into the effluent in accordance with 40 CFR 125.3(g), RCW 90.48.010, RCW 90.48.080, WAC 173-220-130, and WAC 173-201A-240.

Condition G10 requires Permittees to submit additional information or records to Ecology when necessary in accordance with 40 CFR 122.41(h).

Condition G11 incorporates all other requirements of 40 CFR 122.41 and 122.42 by reference.

Condition G12 notifies the Permittee that additional monitoring requirements may be established by Ecology in accordance with 40 CFR 122.41(h).

Condition G13 describes the penalties for violating permit conditions in accordance with 40 CFR 122.41(a)(2).

Condition G14 provides the regulatory context and definition of "Upset" in accordance with 40 CFR 122.41(n).

Condition G15 specifies that the permit does not convey property rights in accordance with 40 CFR 122.41(g).

Condition G16 requires the Permittee to comply with all conditions of the permit in accordance with 40 CFR 122.41(a).

Condition G17 requires the Permittee to comply with more stringent toxic effluent standards or prohibitions

established under Section 307(a) of the Clean Water Act in accordance with 40 CFR 122.41(a)(1), WAC 173-220-120(5), and WAC 173-201A-240.

Condition G18 describes the penalties associated with falsifying or tampering with monitoring devices or methods in accordance with 40 CFR 122.41(j)(5).

Condition G19 requires Permittees to report planned changes in accordance with 40 CFR 122.41(l)(1).

Condition G20 requires Permittees to report any relevant information omitted from the permit application in accordance with 40 CFR 122.41(l)(8).

Condition G21 requires Permittees to report anticipated non-compliances in accordance with 40 CFR 122.41(l)(2).

Condition G22 specifies that Permittees may request their general permit coverage be replaced by an individual permit in accordance with 40 CFR 122.62, 40 CFR 124.5, and WAC 173-220-040.

Condition G23 defines appeal options for the terms and conditions of the general permit and of coverage under the permit by an individual discharger in accordance with RCW 43.21B and WAC 173-226-190.

Condition G24 invokes severability of permit provisions in accordance with RCW 90.48.904.

Condition G25 prohibits bypass unless certain conditions exist in accordance with 40 CFR 122.41(m).

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

Ecology may modify the CSWGP to impose numerical limitations, if necessary to meet water quality standards for surface waters, sediment quality standards, or water quality standards for ground waters, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

Ecology may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

The draft 2020 CSWGP meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, protect human health, aquatic life, and the beneficial uses of waters of the State of Washington. Ecology proposes that this proposed permit be issued for five (5) years.

ECONOMIC IMPACT ANALYSIS

In accordance with WAC 173-226-120, Ecology prepared an Economic Impact Analysis (EIA) for the revised permit. The analysis finds that the cost of compliance with the draft general permit is disproportionate to business size. On a cost-per-employee basis, the costs are generally greater for small businesses than for large firms. This is because most of the costs are a function of the size and topography of the job site.

Cost minimizing features have been extended from the 2015 CSWGP to the 2020 draft CSWGP in order to continue to reduce the burden on small business. Most of these features will benefit both large and small business.

Ecology has maintained the following mitigation features in the CSWGP to reduce the burden on small businesses.

- Sites smaller than 1 acre are exempt from turbidity and transparency monitoring, as well as the requirement for a CESCL to complete site inspections.

- Sites less than 5 acres are given the option to use a lower cost transparency tube for stormwater monitoring instead of a turbidity meter.
- Operators may be allowed to omit aspects of the Stormwater Pollution Prevention Plan (and not implement Best Management Practices), if site conditions render that element unnecessary. This allows qualifying small sites, or those with less complexity, to have fewer BMPs than large or complex sites. As a result, small sites should have lower SWPPP/BMP costs.
- The low rainfall erosivity waiver (permit exemption) is available for certain projects smaller than five acres. This will only affect sites that meet the waiver criteria, but should significantly lower costs.
- Some facilities may qualify for and receive an extreme hardship permit fee reduction under the Wastewater Discharge Permit Fee Rule (Chapter 173-224 WAC). Extreme hardship applies only if the annual gross revenue of goods and services produced using the processes regulated under the permit is \$100,000 or less and the fee poses an extreme hardship to the business.
- Permittees may reduce sampling frequency for temporarily stabilized, inactive sites to once every calendar month.
- Permittees may reduce site inspection frequency for temporarily stabilized, inactive sites to once every calendar month.
- High turbidity reporting may be done electronically.

A copy of the EIA (Ecology Publication Number 20-10-022) may be obtained through the Publications Distribution at Ecology's Headquarters office (360) 407-6000, or by downloading it from Ecology's webpage: <https://fortress.wa.gov/ecy/publications/UIPages/Home.aspx>.

REFERENCES FOR TEXT AND APPENDICES

Ecology must identify the sources of information that were reviewed and relied upon by the agency in the course of preparing to take a significant agency action (RCW 34.05.272). The information must be categorized per the following citation categories:

1. Independent peer review. Review is overseen by an independent third party.
2. Internal peer review. Review by staff internal to the Department of Ecology.
3. External peer review. Review by persons that are external to and selected by the Department of Ecology.
4. Open review. Documented open public review process that is not limited to invited organizations or individuals.
5. Legal and policy document. Federal and state statutes.
6. Legal and policy document. Court and hearings board decisions.
7. Legal and policy document. Federal and state administrative rules and regulations.
8. Legal and policy document. Policy and regulatory documents adopted by local governments.
9. Data from primary research, monitoring activities, or other sources, but that has not been incorporated as part of documents reviewed under other processes.
10. Records of the best professional judgment of Department of Ecology employees or other individuals.

11. Other. Sources of information that do not fit into one of the categories listed.

Categorization per RCW 34.05.272 was adopted on June 12, 2014; therefore, only new citations included in the Fact Sheet have been categorized. Citations used and presented in the previous Fact Sheet were brought forward and not categorized.

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APPENDIX A - PUBLIC INVOLVEMENT INFORMATION

Ecology will reissue the Construction Stormwater General Permit for construction activities as identified in Special Condition S1, Permit Coverage. The proposed permit (2020) will revoke and replace the current permit (2015).

Ecology publishes a Public Notice of Draft (PNOD) to inform the public that the draft permit and fact sheet are available for review and comment. Ecology will publish the PNOD on July 1, 2020, in the Washington State Register and on the Ecology web site (below). The PNOD informs the public that the draft permit and fact sheet are available for review and comment.

Ecology will also mail or email the notice to those who currently have coverage under the construction stormwater general permit and those identified as interested parties, including the Construction Stormwater Advisory Committee.

REQUESTING COPIES OF THE DRAFT PERMIT

You may download copies of the draft general permit, Fact Sheet, and application from the website: <https://ecology.wa.gov/constructionstormwaterpermit>.

Or you may request copies from: Dena Jaskar at dena.jaskar@ecy.wa.gov or (360) 407-6401.

SUBMITTING WRITTEN AND ORAL COMMENTS

Ecology will accept written comments on the draft Construction Stormwater General Permit, Fact Sheet, and related documents from July 1, 2020 through August 14, 2020 (11:59 p.m.); written comments must be postmarked or e-mailed no later than 11:59 p.m. August 14, 2020. Comments should reference specific permit conditions or text when possible, and may address the following topics:

- Technical issues.
- Accuracy and completeness of information.
- The scope of proposed coverage.
- Adequacy of environmental protection and permit conditions.
- Any other concern that would result from issuance of the draft permit.

Ecology prefers comments be submitted electronically using the online comment form available at <http://wq.ecology.commentinput.com/?id=p89sC>. Written comments must be postmarked or received via email no later than **August 14, 2020, at 11:59 pm**.

Submit written, hard copy comments to:

Noel Tamboer
Water Quality Program
Department of Ecology
PO Box 47696
Olympia, WA 98504-7696

Interested parties may also provide oral comments by testifying at the public hearings.

Workshop and Public Hearing

Ecology will host two workshops followed by public hearings to provide an opportunity for interested parties to learn about proposed changes to the permit and give formal oral comments on the draft permit. The public hearings will immediately follow the workshops. The workshops and public hearings will be held:

August 4, 2020 – 9 a.m.

Online Webinar Format

August 6, 2020 – 5:30 p.m.

Online Webinar Format

Register to attend on Ecology's Construction Stormwater website:

<https://ecology.wa.gov/constructionstormwaterpermit>. ***Please note: Due to the COVID-19 pandemic, Ecology will not hold in-person public gatherings.***

ISSUING THE PERMIT

After Ecology receives and considers all public comments, we will make a permit issuance decision and provide response to comments. Ecology expects to issue the final permit on December 2, 2020, with an effective date of January 1, 2021.

Further information may be obtained by contacting Noel Tamboer at Ecology, by phone at (360) 701-6171, by email noel.tamboer@ecy.wa.gov, or by writing to Ecology's Olympia address listed above.

APPENDIX B - DEFINITIONS

This draft permit carries forward the definitions from the 2015 permit with the following proposed additional definitions for clarity and continuity: construction-support activity and upset.. Minor changes are also proposed to clarify the definitions of applicable TMDL, construction activity, final stabilization, significant concrete work and process wastewater.

303(d)-Listed Waters see Waters Listed as Impaired – 303(d).

AKART is an acronym for “all known, available, and reasonable methods of prevention, control, and treatment.” AKART represents the most current methodology that can be reasonably required for preventing, controlling, or abating the pollutants and controlling pollution associated with a discharge.

Applicable TMDL means a TMDL for turbidity, fine sediment, high pH, or phosphorus, which was completed and approved by EPA before January 1, 2021, or before the date the operator’s complete permit application is received by Ecology, whichever is later. TMDLs completed after a complete permit application is received by Ecology become applicable to the Permittee only if they are imposed through an administrative order by Ecology, or through a modification of permit coverage.

Applicant means an **operator** seeking coverage under this permit.

Benchmark means a pollutant concentration used as a permit threshold, below which a pollutant is considered unlikely to cause a water quality violation, and above which it may. When pollutant concentrations exceed benchmarks, corrective action requirements take effect. Benchmark values are not water quality standards and are not numeric effluent limitations; they are indicator values.

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: stormwater associated with construction activity, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Buffer means an area designated by a local jurisdiction that is contiguous to and intended to protect a sensitive area.

Bypass means the intentional diversion of waste streams from any portion of a treatment facility.

Calendar Day. A period of 24 consecutive hours starting at 12:00 midnight and ending the following 12:00 midnight.

Calendar Week (same as **Week**) means a period of seven consecutive days starting at 12:01 a.m. (0:01 hours) on Sunday.

Certified Erosion and Sediment Control Lead (CESCL) means a person who has current certification through an approved erosion and sediment control training program that meets the minimum training standards established by Ecology (see BMP C160 in the SWMM).

Chemical Treatment means the addition of chemicals to stormwater and/or authorized non-stormwater prior to filtration and discharge to surface waters.

Clean Water Act (CWA) means the Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, and 97-117; USC 1251 et seq.

Combined Sewer means a sewer which has been designed to serve as a sanitary sewer and a storm sewer, and into which inflow is allowed by local ordinance.

Common Plan of Development or Sale means a site where multiple separate and distinct construction activities may be taking place at different times on different schedules and/or by different contractors, but still under a single plan. Examples include: 1) phased projects and projects with multiple filings or lots, even if the separate phases or filings/lots will be constructed under separate contract or by separate owners (e.g., a development where lots are sold to separate builders); 2) a development plan that may be phased over multiple years, but is still under a consistent plan for long-term development; 3) projects in a contiguous area that may be unrelated but still under the same contract, such as construction of a building extension and a new parking lot at the same facility; and 4) linear projects such as roads, pipelines, or utilities. If the project is part of a common plan of development or sale, the disturbed area of the entire plan must be used in determining permit requirements.

Composite Sample means a mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite" (collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increases while maintaining a constant time interval between the aliquots).

Concrete Wastewater means any water used in the production, pouring and/or clean-up of concrete or concrete products, and any water used to cut, grind, wash, or otherwise modify concrete or concrete products. Examples include water used for or resulting from concrete truck/mixer/pumper/tool/chute rinsing or washing, concrete saw cutting and surfacing (sawing, coring, grinding, roughening, hydro-demolition, bridge and road surfacing). When stormwater comingles with concrete wastewater, the resulting water is considered concrete wastewater and must be managed to prevent discharge to waters of the state, including ground water.

Construction Activity means land-disturbing operations including clearing, grading or excavation which disturbs the surface of the land (including off-site disturbance acreage related to construction-support activity). Such activities may include road construction, construction of residential houses, office buildings, or industrial buildings, site preparation, soil compaction, movement and stockpiling of topsoils, and demolition activity.

Construction-Support Activity means off-site acreage that will be disturbed as a direct result of a construction project and will discharge stormwater. For example, off-site equipment staging yards, material storage areas, borrow areas and parking areas.

Contaminant means any hazardous substance that does not occur naturally or occurs at greater than natural background levels. See definition of "hazardous substance" and WAC 173-340-200.

Demonstrably Equivalent means that the technical basis for the selection of all stormwater BMPs is documented within a SWPPP, including:

1. The method and reasons for choosing the stormwater BMPs selected.
2. The pollutant removal performance expected from the BMPs selected.
3. The technical basis supporting the performance claims for the BMPs selected, including any available data concerning field performance of the BMPs selected.
4. An assessment of how the selected BMPs will comply with state water quality standards.
5. An assessment of how the selected BMPs will satisfy both applicable federal technology- based treatment requirements and state requirements to use all known, available, and reasonable methods of prevention, control, and treatment (AKART).

Department means the Washington State Department of Ecology.

Detention means the temporary storage of stormwater to improve quality and/or to reduce the mass flow rate of discharge.

Dewatering means the act of pumping ground water or stormwater away from an active construction site.

Director means the Director of the Washington Department of Ecology or his/her authorized representative.

Discharger means an owner or operator of any facility or activity subject to regulation under Chapter 90.48 RCW or the Federal Clean Water Act.

Domestic Wastewater means water carrying human wastes, including kitchen, bath, and laundry wastes from residences, buildings, industrial establishments, or other places, together with such ground water infiltration or surface waters as may be present.

Ecology means the Washington State Department of Ecology.

Engineered Soils means the use of soil amendments including, but not limited, to Portland cement treated base (CTB), cement kiln dust (CKD), or fly ash to achieve certain desirable soil characteristics.

Equivalent BMPs means operational, source control, treatment, or innovative BMPs which result in equal or better quality of stormwater discharge to surface water or to ground water than BMPs selected from the SWMM.

Erosion means the wearing away of the land surface by running water, wind, ice, or other geological agents, including such processes as gravitational creep.

Erosion and Sediment Control BMPs means BMPs intended to prevent erosion and sedimentation, such as preserving natural vegetation, seeding, mulching and matting, plastic covering, filter fences, sediment traps, and ponds. Erosion and sediment control BMPs are synonymous with stabilization and structural BMPs.

Federal Operator is an entity that meets the definition of “Operator” in this permit and is either any department, agency or instrumentality of the executive, legislative, and judicial branches of the Federal government of the United States, or another entity, such as a private contractor, performing construction activity for any such department, agency, or instrumentality (EPA 2012).

Final Stabilization (same as **fully stabilized** or **full stabilization**) means the completion of all soil disturbing activities at the site and the establishment of permanent vegetative cover, or equivalent permanent stabilization measures (such as pavement, riprap, gabions, or geotextiles) which will prevent erosion. See the applicable Stormwater Management Manual for more information on equivalent permanent stabilization measures.

Ground Water means water in a saturated zone or stratum beneath the land surface or a surface waterbody.

Hazardous Substance means any dangerous or extremely hazardous waste as defined in RCW 70.105.10 (5) and (6), or any dangerous or extremely dangerous waste as designated by rule under chapter 70.105 RCW; any hazardous sub-stance as defined in RCW 70.105.010(14) or any hazardous substance as defined by rule under chapter 70.105 RCW; any substance that, on the effective date of this section, is a hazardous substance under section 101(14) of the federal cleanup law, 42 U.S.C., Sec. 9601(14); petroleum or petroleum products; and any substance or category of substances, including solid waste decomposition products, determined by the director by rule to present a threat to human health or the environment if released into the environment. The term hazardous substance does not include any of the following when contained in an underground storage tank from which there is not a release: crude oil or any fraction thereof or petroleum, if the tank is in compliance with all applicable federal, state, and local law.

Injection Well means a well that is used for the subsurface emplacement of fluids. (See Well.)

Jurisdiction means a political unit such as a city, town or county; incorporated for local self-government.

National Pollutant Discharge Elimination System (NPDES) means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring, and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the Federal Clean Water Act, for the discharge of pollutants to surface waters of the State from point sources. These permits are referred to as NPDES permits and, in Washington State, are administered by the Washington Department of Ecology.

Notice of Intent (NOI) means the application for, or a request for coverage under this general permit pursuant to WAC 173-226-200.

Notice of Termination (NOT) means a request for termination of coverage under this general permit as specified by Special Condition S10 of this permit.

Operator means any party associated with a construction project that meets either of the following two criteria:

- The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
- The party has day-to-day operational control of those activities at a project that are necessary to ensure compliance with a SWPPP for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions).

Permittee means individual or entity that receives notice of coverage under this general permit.

pH means a liquid's measure of acidity or alkalinity. A pH of 7 is defined as neutral. Large variations above or below this value are considered harmful to most aquatic life.

pH Monitoring Period means the time period in which the pH of stormwater runoff from a site must be tested a minimum of once every seven days to determine if stormwater pH is between 6.5 and 8.5.

Point Source means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, and container from which pollutants are or may be discharged to surface waters of the State. This term does not include return flows from irrigated agriculture.

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, domestic sewage sludge (biosolids), munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste. This term does not include sewage from vessels within the meaning of section 312 of the CWA, nor does it include dredged or fill material discharged in accordance with a permit issued under section 404 of the CWA.

Pollution means contamination or other alteration of the physical, chemical, or biological properties of waters of the State; including change in temperature, taste, color, turbidity, or odor of the waters; or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the State as will or is likely to create a nuisance or render such waters harmful, detrimental or injurious to the public health, safety or welfare; or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses; or to livestock, wild animals, birds, fish or other aquatic life.

Process Wastewater means any non-stormwater which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product. If stormwater commingles with process wastewater, the commingled water is considered process wastewater.

Receiving Water means the waterbody at the point of discharge. If the discharge is to a storm sewer system, either surface or subsurface, the receiving water is the waterbody to which the storm system discharges. Systems designed primarily for other purposes such as for ground water drainage, redirecting stream natural flows, or for conveyance of irrigation water/return flows that coincidentally convey stormwater are considered the receiving water.

Representative means a stormwater or wastewater sample which represents the flow and characteristics of the discharge. Representative samples may be a grab sample, a time proportionate **composite sample**, or a flow proportionate sample. Ecology's Construction Stormwater Monitoring Manual provides guidance on representative sampling.

Responsible Corporate Officer for the purpose of signatory authority means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

Sanitary sewer means a sewer which is designed to convey domestic wastewater.

Sediment means the fragmented material that originates from the weathering and erosion of rocks or unconsolidated deposits, and is transported by, suspended in, or deposited by water.

Sedimentation means the depositing or formation of sediment.

Sensitive Area means a waterbody, wetland, stream, aquifer recharge area, or channel migration zone.

SEPA (State Environmental Policy Act) means the Washington State Law, RCW 43.21C.020, intended to prevent or eliminate damage to the environment.

Significant Amount means an amount of a pollutant in a discharge that is amenable to available and reasonable methods of prevention or treatment; or an amount of a pollutant that has a reasonable potential to cause a violation of surface or ground water quality or sediment management standards.

Significant Concrete Work means greater than 1000 cubic yards placed or poured concrete used over the life of a project.

Significant Contributor of Pollutants means a facility determined by Ecology to be a contributor of a significant amount(s) of a pollutant(s) to waters of the State of Washington.

Site means the land or water area where any "facility or activity" is physically located or conducted.

Source Control BMPs means physical, structural or mechanical devices or facilities that are intended to prevent pollutants from entering stormwater. A few examples of source control BMPs are erosion control practices, maintenance of stormwater facilities, constructing roofs over storage and working areas, and directing wash water and similar discharges to the sanitary sewer or a dead end sump.

Stabilization means the application of appropriate BMPs to prevent the erosion of soils, such as, temporary and permanent seeding, vegetative covers, mulching and matting, plastic covering and sodding. See also the definition of Erosion and Sediment Control BMPs.

Storm Drain means any drain which drains directly into a **storm sewer system**, usually found along roadways or in parking lots.

Storm Sewer System means a means a conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains designed or used for collecting or conveying stormwater. This does not include systems which are part of a **combined sewer** or Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

Stormwater means that portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a stormwater drainage system into a defined surface waterbody, or a constructed infiltration facility.

Stormwater Management Manual (SWMM) or Manual means the technical Manual published by Ecology for use by local governments that contain descriptions of and design criteria for BMPs to prevent, control, or treat pollutants in stormwater.

Stormwater Pollution Prevention Plan (SWPPP) means a documented plan to implement measures to identify, prevent, and control the contamination of point source discharges of stormwater.

Surface Waters of the State includes lakes, rivers, ponds, streams, inland waters, salt waters, and all other surface waters and water courses within the jurisdiction of the state of Washington.

Temporary Stabilization means the exposed ground surface has been covered with appropriate materials to provide temporary stabilization of the surface from water or wind erosion. Materials include, but are not limited to, mulch, riprap, erosion control mats or blankets and temporary cover crops. Seeding alone is not considered stabilization. Temporary stabilization is not a substitute for the more permanent "final stabilization."

Total Maximum Daily Load (TMDL) means a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet state water quality standards. Percentages of the total maximum daily load are allocated to the various pollutant sources. A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. The TMDL calculations must include a "margin of safety" to ensure that the waterbody can be protected in case there are unforeseen events or unknown sources of the pollutant. The calculation must also account for seasonable variation in water quality.

Transfer of Coverage (TOC) means a request for transfer of coverage under this general permit as specified by Special Condition S2.A.2 of this permit.

Treatment BMPs means BMPs that are intended to remove pollutants from stormwater. A few examples of treatment BMPs are detention ponds, oil/water separators, biofiltration, and constructed wetlands.

Transparency means a measurement of water clarity in centimeters (cm), using a 60 cm transparency tube. The transparency tube is used to estimate the relative clarity or transparency of water by noting the depth at which a black and white Secchi disc becomes visible when water is released from a value in the bottom of the tube. A transparency tube is sometimes referred to as a "turbidity tube."

Turbidity means the clarity of water expressed as nephelometric turbidity units (NTU) and measured with a calibrated turbidimeter.

Uncontaminated means free from any contaminant, as defined in MTCA cleanup regulations. See definition of "contaminant" and WAC 173-340-200.

Upset means an exceptional incident in which there is unintentional and temporary non-compliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error,

improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless improper operation.

Waste Load Allocation (WLA) means the portion of a receiving water's loading capacity that is allocated to one of its existing or future point sources of pollution. WLAs constitute a type of water quality based effluent limitation (40 CFR 130.2[h]).

Water-only Based Shaft Drilling is a shaft drilling process that uses water only and no additives are involved in the drilling of shafts for construction of building, road, or bridge foundations.

Water Quality means the chemical, physical, and biological characteristics of water, usually with respect to its suitability for a particular purpose.

Waters of the State includes those waters as defined as "waters of the United States" in 40 CFR Subpart 122.2 within the geographic boundaries of Washington State and "waters of the State" as defined in Chapter 90.48 RCW, which include lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and water courses within the jurisdiction of the state of Washington.

Well means a bored, drilled or driven shaft, or dug hole whose depth is greater than the largest surface dimension. (See Injection well.)

Wheel Wash Wastewater means any water used in, or resulting from the operation of, a tire bath or wheel wash (BMP C106: Wheel Wash), or other structure or practice that uses water to physically remove mud and debris from vehicles leaving a construction site and prevent track-out onto roads. When stormwater combines with wheel wash wastewater, the resulting water is considered wheel wash wastewater and must be managed according to Special Condition S9.D.9.

APPENDIX C – ACRONYMS

AKART	All Known, Available, and Reasonable Methods of Prevention, Control, and Treatment
BMP	Best Management Practice
CESCL	Certified Erosion and Sediment Control Lead CFR Code of Federal Regulations
CKD	Cement Kiln Dust
cm	Centimeters
CPD	Common Plan of Development
CTB	Cement-Treated Base
CWA	Clean Water Act
DMR	Discharge Monitoring Report
EPA	Environmental Protection Agency
ESC	Erosion and Sediment Control
FR	Federal Register
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System NTU Nephelometric Turbidity Unit
RCW	Revised Code of Washington
SEPA	State Environmental Policy Act SWMM Stormwater Management Manual SWPPP Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load
UIC	Underground Injection Control
USC	United States Code
USEPA	United States Environmental Protection Agency
WAC	Washington Administrative Code WQ Water Quality
WWHM	Western Washington Hydrology Model