SALMON-SAFE
ACCREDITATION PROGRAM (AP) GUIDELINES
FOR LARGE-SCALE CONSTRUCTION MANAGEMENT

Version 2.4

April 2025

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April 2025

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Introduction

Salmon-Safe

Salmon-Safe's accreditation program for construction companies is a collaborative effort to engage contractors in consistently applying best construction site management practices to achieve a zero sediment runoff goal everywhere they work. Since 1996, Salmon-Safe has successfully defined and promoted ecologically sustainable land management that protects water quality and aquatic biodiversity at sites throughout the Pacific Coast and inland Pacific Northwest. This is the nation's first accreditation program recognizing construction firms for excellence in water quality protection practices and will serve as a vehicle for enhanced accountability in environmental compliance for construction site management.

Salmon-Safe accreditation is as a means for improving the level of water quality protection provided by contractors at construction sites, thereby minimizing impacts of development on sensitive aquatic environments. A number of the nation's water bodies are currently listed as impaired under the Clean Water Act for turbidity and other pollutants associated with erosion. In response to these conditions, EPA promulgated *Construction and Development Effluent Guidelines* in 2009 and amended the regulations in 2014 and 2015.[1] Focusing on the construction industry presents an opportunity for targeting these pollutants of concern as land-disturbing activities have a high potential for discharge of sediments to water bodies.

Designed to be a general commitment to best practices by service providers, Salmon-Safe initiated this accreditation program to recognize construction companies that commit to implementing pollution control and runoff-receiving water protection measures everywhere they work—including construction sites that may not necessarily be eligible for Salmon-Safe certification. By contrast, Salmon-Safe's certification programs focus on site-specific locations including farms, park and natural areas, corporate and university campuses, large-scale urban developments, infrastructure projects, and golf courses.

This document provides an overview of the accreditation program along with information on the evaluation process, eligibility criteria, and Salmon-Safe best practices for construction site management. Construction companies will find an application for accreditation attached which initiates the process laid out in this document. Also included are the annual verification requirements and model construction-phase stormwater management standards that must be followed to maintain accreditation. Salmon-Safe's peer-reviewed criteria and rigorous on-site inspections provide validation of environmental performance and public credibility for accredited companies. Salmon-Safe's high visibility public awareness campaigns recognize accredited entities, building their reputation for excellence in environmental stewardship and regulatory compliance.

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[1] U.S. Environmental Protection Agency, "Construction and Development Effluent Guidelines," May 2024. Available for download at: *http://www.epa.gov/eg/construction-and-development-effluent-guidelines*

Evaluation Process for Accreditation

Scope of the Evaluation Process

Once Salmon-Safe has received a complete application for accreditation by a construction company, Salmon-Safe will review the application for completeness and eligibility. There is no application fee; however Salmon-Safe charges an assessment fee that is based on the size of operation being reviewed. This assessment fee also covers annual verification and review.

Salmon-Safe will conduct an in-depth assessment of site management policies and procedures that directly and indirectly affect water quality. This evaluation will be augmented by a field-level assessment of active construction site(s) when possible. Both policy and field-level evaluations are conducted using a set of criteria (the "Criteria") to determine whether the construction site management practices employed by a candidate company are consistent with best management practices for avoiding runoff. These practices go beyond regulatory code compliance to ensure the local watershed is protected to the greatest extent feasible during construction.

The policy and field-level assessments will involve a Salmon-Safe independent expert or team of experts. The experts selected to conduct the assessments are qualified professionals hired by Salmon-Safe. The goal is to maximize the credibility of the evaluation process by employing individuals with recognized expertise in relevant disciplines that are capable of rendering independent, objective judgments.

Decision Rule for Accreditation

Construction contractors applying for accreditation shall be evaluated at a minimum of one large (≥ 10 acres) active site, two medium-size (5–10 acres) active sites, or three small (< 1–5 acres) active sites. If an applicant does not have activity at sufficient sites, conditional accreditation can be given and reassessed when an additional site or sites become active.

Contractors shall be awarded accreditation if 100 percent of the applicable criteria have been evaluated positively. Contractors receiving a positive evaluation for at least 80 percent of the applicable criteria shall be given a period of two weeks during the wet season (October–April) and one month during the dry season to make corrections and submit evidence of changes and revised materials to Salmon Safe Accreditation. Contractors receiving a positive evaluation for less than 80 percent of the applicable criteria have to reapply for consideration.

Maintaining Certification

A certificate of accreditation will be granted for a period of three years subject to annual verification and review. Salmon-Safe will grant use of the Salmon-Safe logo and messaging for the duration of the accreditation period. During the annual evaluation, Salmon-Safe will require assurance that the accredited company remains in compliance with local, state, and federal regulations, will confirm satisfactory progress in making any necessary corrections required by the evaluation team, and will conduct a field assessment at active site(s) if the applicant did not have activity at sufficient sites initially through a recertification process composed of a park system audit and reassessment.

Eligibility Criteria for Accreditation

Compliance with Salmon-Safe eligibility criteria is intended to promote construction site pollution control and runoff prevention. The primary focus of Salmon-Safe's programs is on Salmonid species and their habitat requirements. Salmon are a key indicator species within Pacific Coast watersheds. Their conservation tightly intertwines with the health of the larger ecosystem. Thus, the evaluation of compliance with the eligibility criteria focuses on the following key areas of habitat vulnerability; those most critical to Salmonid survival:

- Water Quality—introduction of sediment, chemicals or other pollutants from surface runoff
- Water Quantity—increase in magnitude and frequency of peak flows from removal of vegetation and natural soils

Throughout this section there are references to site management practices intended to control discharges and pollutants. These practices are described in more detail in a subsequent section entitled "Best Practices for Construction Site Management". It is important to note that these best practices must be in compliance with the applicable Construction Stormwater General Permit. Where these guidelines are less specific than the applicable regulatory authority, construction companies must defer to the more rigorous requirement(s).

Specific eligibility criteria are organized into two categories, the first of which is intended for assessment of the candidate construction company's policies and procedures. The second is intended for site(s) assessment. All of the criteria seek to avoid or limit impact to water quality and water quantity.

Category 1: Planning, Staging and Scheduling

Background

An Erosion, Sediment and Pollution Control Plan and/or a Stormwater Pollution Prevention Plan (SWPPP) are fundamental requirements of stormwater permits for construction projects. Whether a project's impacts are minimized by implementation of an erosion prevention plan, a sediment and pollution control plan, or an SWPPP, implementing the necessary measures to avoid sediment and pollution discharge from the construction site is imperative. For the purposes of this accreditation program, the SWPPP will be referred to as the default plan. If something other than an SWPPP is used, eligibility for accreditation will be based on the applicable plan submitted to Salmon-Safe. A SWPPP:

- **Identifies** all potential sources of pollution which may reasonably be expected to affect the quality of stormwater discharges from the construction site;
- **Describes** practices to be used to reduce pollutants in stormwater discharges from the construction site;
- **Includes** visual and other monitoring and maintenance of best management practices used on site; and
- **Helps** assure compliance with the terms and conditions of the permit (when the plan is designed for the individual site and is fully implemented).

SWPPP requirements vary to some extent from state to state and province to province, although many states and provinces are now adopting federal SWPPP requirements. The requirements for each state are provided in the stormwater permit issued by the state authority applicable to your project. Some local municipalities have their own stormwater management requirements which may be more protective. For additional guidance on preparing a SWPPP, the EPA has published *Developing Your Stormwater Pollution Prevention Plan: A Guide for Construction Sites,* which can be found on the National Service Center for Environmental Publications (NSCEP) web site[2].

This guide can also be found on EPA's National Pollutant Discharge Elimination System (NPDES) web page for *Stormwater Pollution Prevention Plan Guidance and Other Helpful Resources for Construction Activities*[3]. In addition, this page provides SWPPP templates, example SWPPP's for a residential subdivision and a commercial site, plus links to other resources, such as state guidance documents.

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[2] *Developing Your Stormwater Pollution Prevention Plan: A Guide for Construction Sites.* Available for download at: *https://www3.epa.gov/npdes/pubs/sw_swppp_guide.pdf*

[3] *https://www.epa.gov/npdes/developing-stormwater-pollution-prevention-plan-swppp*

Criterion 1.1: Stormwater Pollution Prevention Plan (SWPPP)* has been developed to maximally prevent pollution and result in zero runoff from the site.

*Note: *Criterion 1.1 is relevant if the contractor is responsible for developing the SWPPP. If your company does not develop the SWPPP, go to Criterion 1.2.*

The Salmon-Safe review team will determine whether, from an overall perspective, the SWPPP represents and advances the goal of eliminating or limiting, to the maximum extent practicable, discharges from the construction site of sediments and other pollutants above naturally occurring levels (existing pre-construction conditions or consistent with established water quality standards). Most of the elements of the plan will pertain to stormwater related issues. The plan should, however, evaluate and control, where necessary, the likely non-stormwater discharges at construction sites, including dewatering, line and system flushing, dust control, facility wash down, and irrigation.

Key elements of the plan include:

a. Construction staging and access plans that avoid or limit disturbance of vegetation, soils, and natural drainage paths and patterns;

b. Assessment of the potential of the site to discharge sediments and accompanying pollutants from disturbed soil areas in relation to climatology, hydrology, hydraulics, soils, topography, existing land cover, and the construction plan;

c. Description of procedures and practices that eliminate discharges as the first priority, that greatly limit discharges as the second priority, and that reduce discharges as the third priority (see Criterion 2.1: Control of Discharges from Disturbed Soil Areas);

d. Description of procedures and practices for rapid-response stabilization and/or runoff collection (e.g., using temporary depressions) procedures for areas of active work when rain is forecast. Creation of temporary depressions, berms, and other runoff collection procedures should occur only in areas that are already disturbed or will be disturbed by site development activities;

e. Description of specific water pollutants that are typically associated with project construction materials, processes, wastes, vehicles, and other equipment; and description of procedures and practices to eliminate, entirely or largely, any discharges of contaminants into groundwater or surface water from these sources (see Criterion 2.2: Control of Discharges from Construction Equipment, Materials and Wastes);

f. Assessment of the potential of the site to discharge sediments and accompanying pollutants from non-stormwater sources and dewatering operations, if applicable to the site, in relation to the site conditions and construction plan;

g. Description of procedures and practices to control discharges of contaminants from non-stormwater sources and dewatering operations, if applicable (see Criterion 2.3: Control of Discharges from Non-stormwater Sources and Dewatering);

h. Description of inspection and maintenance procedures for all practices applied to control each of the sources of pollution;

i. Description of the discharge or receiving water monitoring that will be performed according to the regulatory requirements, including but not limited to the construction general stormwater permit and requirements of local authorities;

j. Description of permanent stormwater management practices that will be installed according to the regulatory requirements; and

k. Description of training for contractor and subcontractor personnel to ensure proper implementation of the plan. Include at least one Certified Professional in Sediment and Erosion Control as certified by the International Erosion Control Association as a member of the construction team.

Criterion 1.2: SWPPP Implementation is conducted by the contractor to ensure that intent of the pollutant control and runoff prevention practices identified in the plan are being carried out satisfactorily.

If there is no active construction site for Salmon-Safe to review, the candidate company can provide documentation of the following elements from a past project. These tracking and record-keeping elements demonstrate proper implementation of the SWPPP.

The key elements include:

a. Provide records including all plan documents, initial SWPPP certification, annual compliance certification, SWPPP amendments or addenda, site inspection logs, monitoring occasions and results, and reports of unauthorized discharges, if any to demonstrate records are easily accessible, up to date, and maintained on file at the site when construction project is active; and

b. Submit monitoring and incident reports as evidence of evaluating the effectiveness of SWPPP provisions from storm to storm and taking corrective action when necessary.

Category 2: Application of Construction Site Pollutant Control Practices

Background

Pollutant control practices range from soil stabilization, water handling, and sediment trapping to active treatment systems. In order to attain the goal of zero runoff, construction contractors should prioritize practices that can eliminate discharges from disturbed areas first. Where elimination is not feasible, practices that greatly limit discharges should be employed and practices that reduce discharges used as a last resort. If the candidate company has activity at a minimum of one large (≥ 10 acres) site, two medium-size (5–10 acres) sites, or three small (< 1–5 acres) sites that Salmon-Safe can visit and evaluate as part of the accreditation, then the following criteria will be applicable.

Criterion 2.1: Control of discharges from disturbed soil areas are managed in order of priority (eliminate, greatly limit, and then reduce).

As a first priority, construction contractors can eliminate discharges from disturbed soil areas of sediments and accompanying pollutants above naturally occurring levels (existing pre-development conditions or established water quality constituent standards where applicable) by using disturbance avoidance and isolation practices, as appropriate to the site and construction conditions. Consider design elements of the development that can provide temporary runoff collection facilities through construction staging. The field team will assess whether these practices are being used to the maximum extent practicable and properly applied.

As the next priority, construction contractors can greatly limit discharges from disturbed soil areas of sediments and accompanying pollutants above naturally occurring levels by using practices from the following groups, as appropriate to the site and construction conditions:

- exposure limitation practices
- disturbed area stabilization practices
- flow and perimeter control practices
- travelway and materials lay-down area stabilization practices
- drain inlet protection practices
- street sweeping
- planning for sudden, challenging conditions

The field team will assess whether these practices are being used to the maximum extent practicable, when practices in the first-priority group cannot be used; and they are being properly applied.

As the third priority, contractors can reduce discharges from disturbed soil areas of sediments and accompanying pollutants above naturally occurring levels by using active treatment systems such as polymer- or electrostatically-assisted flocculation and advanced sand filtration.

The field team will assess whether these practices are being used to the maximum extent practicable, when practices in the first- and second-priority group cannot be used; and they are being properly applied.

Criterion 2.2: Control of discharges from construction equipment, materials and wastes ("source control") using practices that eliminate pollutant discharges to the maximum extent practicable.

Construction contractors can eliminate discharges of pollutants associated with construction materials, processes, and wastes by preventing precipitation or runoff to contact with these pollutants through covering, enclosing, and/or berming to isolate the potential pollutant sources, developing a spill prevention and response plan, placing fully equipped spill kits at any location where liquids or fuels are dispensed, requiring regular construction vehicle maintenance, implementing a vehicle leak detection inspection program, and conducting vehicle inspections at least weekly. These practices are being used to the maximum extent practicable and properly applied.

Contractors can also largely eliminate discharges of pollutants associated with vehicles and other construction equipment by maintaining, cleaning, and parking or storing such equipment in a way that precipitation or runoff cannot contact petroleum-based and other residues from these operations.

The field team will assess whether these practices are being used to the maximum extent practicable and properly applied.

Criterion 2.3: Control of discharges from non-stormwater sources and dewatering are managed in order of priority (eliminate, greatly limit, and then reduce).

Similar to Criterion 2.1, with non-stormwater sources (uncontaminated water used on site as defined under Criterion 1.1) and dewatering operations, construction contractors are asked to first prioritize eliminating discharges of pollutants, if any, then greatly limiting discharges when elimination practices cannot be used, and finally reducing discharges when the first- and second-priority practices cannot be used. The practices specified for each priority are as follows:

- Eliminate discharges of non-stormwater sources of water that could carry sediments and other pollutants from the site by draining these sources to natural depressions or excavations or pumping into tanks.

If deemed uncontaminated, the collected water can be infiltrated into the soil, evaporated, or pumped elsewhere for dust control or dispersal.

- **Greatly limit** discharges of pollutants when in close proximity to a sensitive aquatic environment by using active treatment systems (see Best Practices for Construction Site Management).
- **Reduce** discharges of pollutants by using conventional sediment collection systems (see Best Practices for Construction Site Management).

The field team will assess whether these practices are being used to the maximum extent possible and properly applied.

Other Protection Measures

While the eligibility criteria focus on site management practices for control of water quality and water quantity, Salmon-Safe requires compliance with other relevant Salmon-Safe certification standards if construction activities will disturb riparian and/or aquatic habitat.

Accredited construction companies should follow these general best practices where applicable:

- Post-occupancy Operations and Landscape Management—For as long as the accredited organization maintains a management role of the site, the accredited organization or their sub-consultant, including landscape contractors, must comply with Salmon-Safe standards related to erosion control, integrated pest management and other habitat conservation and water quality protection guidelines.
- Instream Habitat Restoration and Protection—Use fish and wildlife exclusion/protection measures during construction and include regular monitoring of these features.
- Riparian/Wetlands Vegetation Restoration and Protection—Protect sensitive species and their habitats during construction.
- Water Use Management—For equipment cleaning, avoid discharges to water and potential contamination of adjacent natural resources; make no surface water withdrawals during construction.
- Chemical and Nutrient Containment—Locate construction staging areas including parking, equipment storage, fuel storage, and chemical storage outside of sensitive areas; equipment cleaning and maintenance plans are in place; avoid use of chemicals whenever practicable and, if used, proper containment, clean-up and disposal plans are in place. If necessary, select and responsibly apply a deicer that is least harmful to groundwater (refer to Attachment C: Salmon-Safe Information Sheet, *"A Comparison of Alternative Road Deicers"*).

Best Practices for Construction Site Management

The intent of this section is to provide a model construction site stormwater management plan. These practices should be installed and maintained as specified by an approved stormwater management manual, such as the Washington Department of Ecology's *Stormwater Management Manual for Western Washington, Volume II*.

For more detailed information about best practices and technologies that can be used to control discharges from construction sites, see the EPA's *Development Document for Final Effluent Guidelines and Standards for the Construction and Development Category Section 7: Technology Assessment*[4]. This document provides detailed descriptions of the performance of site runoff control practices and the design criteria or standards used to size each practice to ensure effectiveness. There are also cost data for some of the practices included.

Model Construction Site Stormwater Management Plan

Introduction

Salmon-Safe developed this model plan for managing stormwater on construction sites in furtherance of its goal to eliminate or limit—to the maximum extent operationally feasible[5]—discharges from construction sites of sediments and other pollutants. The plan is intended to: (1) guide contractors holding or seeking Salmon-Safe accreditation; and (2) advise campus, commercial, residential, and infrastructure property owners performing construction projects who already have or are applying for Salmon-Safe certification.

Most contractors and property owners involved in Salmon-Safe accreditations and certifications engage in relatively large construction activities. Some of these projects are in ultra-urban settings, where there are deep excavations that do not drain out. However, they often collect stormwater containing sediments and expose contaminated groundwater that must be pumped to a storm sewer, combined sanitary/storm sewer, or receiving water body. At this point in time, unless they do not discharge externally, these projects generally employ advanced water treatment technology to capture sediments and contaminants in groundwater to meet their discharge limits.

Other projects are more spread out over the landscape, expose a considerable amount of soil, and drain in relation to the topography. A number of source controls, when effectively applied, can minimize or even prevent the release of sediments and other construction-related pollutants. If not, projects of this type today, especially large ones, also often employ advanced treatment.

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[4] *https://www.epa.gov/eg/construction-and-development-effluent-guidelines-documents*

[5] As defined under the topic "Core Urban Certification Standards" in *Salmon-Safe Urban Standards, Version 3.1.*

Contractors accredited by Salmon-Safe must demonstrate proficiency in employing all of these management practices. Likewise, Salmon-Safe certified properties must commit to their use when they do construction.

The model plan recognizes various construction settings. The basic breakdown is between the ultra-urban, confined locations and more widely distributed sites. Either of these types may or may not have a construction staging yard on or off the site and vehicle traffic entering the project. Following are guidelines for each of these situations.

Best Management Practices for Any Construction Project with a Staging Yard

To the maximum extent operationally feasible, use pollution source control strategies such as the following:

- Store all metals and treated wood in roofed enclosures with side walls that prevent contact with falling or wind-driven precipitation or runoff.
- Store all construction aggregates and landscape materials in the same manner or in open enclosures that prevent runoff generated by rainfall contacting them from flowing out, or runoff generated outside of the enclosures from flowing in.
- Store all fluids in containers on secondary containments capable of collecting 110 percent of the contents.
- Perform all vehicle fueling from a double-walled tank in a covered area, bermed to contain a spill, or at an off-site station.
- Develop a spill prevention and response plan.
- Place fully equipped spill kits at any location where liquids or fuels are dispensed.
- Require regular maintenance of construction vehicles. Perform all maintenance indoors or at a suitable location off-site.
- Perform all vehicle cleaning in a contained location from which wash water cannot exit or at such a location off-site.
- Implement a construction vehicle leak detection inspection program, and conduct inspections at least weekly.
- Park all construction vehicles larger than a pick-up truck and forklifts longer than two days so that any fluid leaks cannot contaminate stormwater runoff. To prevent contamination, park in a location that cannot drain into any storm-water conveyance leaving the site. If a potential parking site could result in runoff, that location should be modified by slightly recessing the parking area to prevent draining out. An alternative if such a location cannot be found is to place leakage collection trays under the vehicles. Remove any water and

fluid collected in the pans each work day and properly dispose of it so that it does not disseminate in the water or land environment. Any vehicle observed to be leaking a noticeable quantity of a fluid should be repaired immediately.

Best Management Practices for Any Construction Project with Vehicle Traffic

To the maximum extent operationally feasible, use pollution source control strategies such as the following:

- Minimize the number of vehicle access points.
- Stabilize entrance and exit areas; and provide a recycling tire, under-carriage, and chassis wash for exiting vehicles.
- Fully stabilize any surface on which vehicles will drive, including roads and material lay-down areas, using two- to four-inch crushed rock (6 inches deep) with a gravel or crushed aggregate base course.

Best Management Practices for Ultra-Urban Projects with Confined Excavations

To the maximum extent operationally feasible, use pollution source control strategies such as the following:

- When exporting excavated soil off-site, minimize the distance between the dumping equipment and receiving truck. At the end of each work day, employ a vacuum or regenerative air sweeper in the affected area.
- Unless the site cannot drain out, use advanced sediment collection and treatment devices such as polymer- or electrostatically-assisted floccula-tion, advanced sand filtration, and granular activated carbon, as appropriate, to treat water to be discharged containing sediments, contaminants in groundwater, or both.
- Use the best management practices for projects with a staging yard, if appropriate.
- Use the best management practices for projects with vehicle traffic, if appropriate.

Best Management Practices for Projects More Widely Distributed on the Landscape

These guidelines follow a hierarchical pattern, through which the highest priority practices are those most protective of salmon. These methods are to be used in all instances where they are operationally feasible. Construction management moves to a lower level of the hierarchy only with documentation of operational infeasibility of operating at a higher level. If full application of these practices does not achieve the Salmon-Safe goal of eliminating or limiting discharges of sediments and other pollutants to the maximum extent operationally feasible, the contingency of advanced treatment should be implemented.

FIRST PRIORITY

If appropriate to the site:

- Use the best management practices for a project with a staging yard.
- Use the best management practices for a project with vehicle traffic.

To the maximum extent operationally feasible, use construction management strategies such as the following:

- Maintain existing vegetation cover, if it exists, to the greatest extent operationally feasible.
- Perform ground-disturbing work in the dry season and work off disturbed ground in the wet season.
- Limit ground disturbance to the amount that can be effectively controlled temporarily in the event of rain.
- Schedule and coordinate rough grading, finish grading, and erosion control applications to be completed in the shortest possible time overall and with the shortest possible lag between these work activities.
- Prevent flow of relatively clean off-site water or intercepted groundwater over bare soil or potentially contaminated areas.
- Use natural depressions and plan excavations to drain runoff internally and isolate areas of potential sediment and other pollutant generation from draining off the site, so long as safe in large storms. Isolation can be performed on a large scale (e.g., around major work sites) and a small scale (e.g., by recessing below curbing at the toe of a short slope). It can also be performed over a long term (e.g., all the time a soil stockpile is in place) and a short term (e.g., as a temporary measure in preparation for a forecasted storm event). The collected water can be infiltrated into the soil, evaporated or pumped elsewhere for dust control or dispersal.

SECOND PRIORITY

If the above practices will not fully avoid the release of sediments from the site, apply the following practices as appropriate to the site conditions, season, and future work plans:

- Rapidly stabilize disturbed areas that could drain off the site and will not be worked again with permanent vegetation supplemented until at least 90 percent vegetative soil cover is achieved with highly effective temporary erosion control measures compatible with vegetation establishment, which include but are not limited to properly selected, installed, and maintained bonded fiber matrix, fiber mats, and wood and straw mulches.

- During the wet season, rapidly stabilize disturbed areas that could drain off the site and will be worked again, but not for more than two days, with these highly effective temporary erosion controls; during the dry season rapidly stabilize disturbed areas that could drain off the site and will be worked again, but not for more than seven days, with these highly effective temporary erosion controls. Note that the local regulatory authority may have varying time periods for temporary erosion controls on exposed and unworked soils depending on the geographic location of the project and whether construction activities are occurring in the wet or dry season.

- Have plans in place and materials on hand to react to challenging situations like especially heavy or fast-moving storms (e.g., rapidly applying erosion controls, excavating temporary depressions, etc.).

- Prevent wind erosion with water applications or the same materials used to prevent water erosion.

- Prevent high velocities of flow over relatively steep and/or long slopes, in excess of what erosion control coverings can withstand.

- Prevent erosion of channels by concentrated flows either by using channel lining, velocity control (e.g., check dams), or both.

- Install temporary sediment barriers along the perimeter of the disturbed area to retain sediment and reduce the velocity of sediment–laden runoff. Examples include silt fences, filter rolls, straw wattles, and gravel bags. This strategy should not be the primary means of sediment control.

- If runoff can enter storm drains, use a perimeter control strategy (e.g., filter roll or silt fence around the drain inlet) as a backup where some soil exposure will still occur, even with the best possible erosion control (the above measures) or when there is a discharge to a sensitive water body.

- Use a vacuum or regenerative air sweeper to clean pavement outside construction exits on any day that vehicles track out sediments.

CONTINGENCY ACTION

If the above measures applied to the extent of their operationally feasibility would still allow more than de minimis release of sediments or other pollutants from the site, use advanced sediment collection and treatment devices such as polymer- or electrostatically-assisted flocculation and advanced sand filtration.

Attachments

A: Accreditation Application
Guidelines and Application Form

B: Annual Accreditation Report and Verification Form

C: Salmon-Safe Information Sheet
A Comparison of Alternative Road Deicers

Attachment A | Accreditation Application

The following is a guideline for preparing the application form.
The form is provided as part of this attachment.

Construction Contractor Information

1. **Company Name**—provide full legal name

2. **Contact Information**

   Mailing Address
   Phone
   Email & Website
   Contact Person Name and Title

3. **Size of Company**—provide the total number of employees, the number of offices with their locations. Please note where the company is headquartered.

4. **Contractor Description**

   The following construction industry NAICS subsector categories have been identified as most likely to be responsible for land-disturbing activities at the national level according to the EPA. Please check all that apply to your company:

   Subsector 236: Construction of Buildings

   - Residential
   - Commercial
   - Industrial
   - Other

   Subsector: 237: Heavy and Civil Engineering Construction

   - Utility Systems
   - Roads, Highways, Light Rail, and Other Linear Facilities
   - Bridges
   - Tunnels
   - Other

   Subsector 238: Special Trade Contractors—describe the specific activities for which you are responsible as part of the construction project that are most relevant to this accreditation program such as site preparation and excavation. Generally this subsector includes carpentry, painting, plumbing and electrical services, which typically do not include land-disturbing activities. A contractor that only works on these types of activities is not likely to be eligible for this accreditation program.

5. **Typical Size of Construction Projects**—describe the typical land development project(s) your company engages in and estimate the approximate acreage or provide a range.

6. **Average Number of Projects Annually**—provide a range if this fluctuates. If your company has multiple offices, please indicate which offices currently have the highest volume of work.

7. **Relevant Certifications/Awards**—could include industry specific recognition, USGBC certifications on projects the company has developed, or other.

Construction Contractor Active Project Information

Please provide a completed project information form for each site to be evaluated (e.g., three project forms if submitting three small active sites for evaluation).

1. **Project Description(s)**—summarize the purpose of the land development project, the extent of the construction activities that your company is conducting as part of this project, and the construction schedule including dates of work start and completion and construction phases. If this project is underway, please indicate where you are in the construction schedule.

2. **Client Name**

3. **Project Location**—city, county, state, latitude and longitude. Provide a project location map if available and provide the following:
   - Watershed(s)
   - River(s), Stream(s)
   - Municipality(ies)/Regulating Agencies
     (e.g., Ecology, ODEQ, USACE, EPA) if known

4. **Total Disturbed Acreage**—provide the extent of the area that will be affected by construction activities including staging areas.

5. **Current Pollution Control Plan(s) Completed or in Development**—check all that apply. Please attach completed plan(s). For plan(s) in development, note plan(s) status in Plan Description box on application form.
   - Stormwater Pollution Prevention Plan (SWPPP)
   - Erosion and Sediment Control Plan (ESCP)
   - Other—please describe

6. **Subcontractors**—list other parties involved in conducting site-disturbing activities as well as parties responsible for permitting and construction monitoring for this project. Provide names of contact persons as these parties may be involved at some level in the assessment.

7. **Additional Comments**—if you have anything to note regarding this project that has not been addressed above, or if you have any questions or concerns, please provide that information here.

Application for Accreditation

VISIT SALMONSAFE.ORG TO DOWNLOAD A FILL-AND-SAVE VERSION OF THIS FORM

CONTRACTOR INFORMATION	
Company Name	
Regional Subsidiary Seeking Accreditation *(if applicable)*	
Mailing Address	
Phone	Fax
Email	Web Site
Primary Contact Name	Title
Size of Company and Primary Office Locations	
Contractor Description *(check all that apply)*	Subsector 236 Construction of Buildings ☐ Residential ☐ Commercial ☐ Industrial ☐ Other
	Subsector 237 Heavy and Civil Engineering Construction ☐ Utility Systems ☐ Roads, Highways, Light Rail & Other Linear Facilities ☐ Bridges ☐ Tunnels ☐ Other
	Subsector 238 Special Trade Contractors ☐ See Page 14 before checking this box
Typical Size of Construction Projects	
Average Number of Construction Projects per Year	
Relevant Certifications and Awards *(LEED-NC, EPA Environmental Awards, etc.)*	

SALMON SAFE

CONSTRUCTION CONTRACTOR ACTIVE PROJECT INFORMATION

Project Description

Client Name

Project Location	Watershed	River/Stream	Municipality
			Regulating Agency

Total Disturbed Acreage

Pollution Control Plan(s) Completed and/or in Development *(check all that apply)*	☐ Stormwater Pollution Prevention Plan (SWPPP)
	☐ Erosion and Sediment Control Plan (ESCP)
	☐ Other *(please provide brief description below)*

Plan Description

Subcontractors
(other parties conducting site-disturbing activities, permitting and/or construction monitoring for this project)

Additional Comments

SALMON SAFE

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Attachment B
Annual Accreditation Report and Verification Form

CONTRACTOR INFORMATION	
Company Name	Year First Accredited
Primary Contact	Title
Phone	Email

STATEMENT OF ENVIRONMENTAL COMPLIANCE—*Provide a statement regarding your company's compliance record during the last year. In the event your company was issued a violation of non-compliance by a regulating agency, please detail the cause, the corrective action the company conducted and the end result as applicable. Salmon-Safe may revoke the certificate of accreditation in the event of a compliance violation, but will determine this on a case-by-case basis.*

Attach additional sheets if you were assigned more than three conditions.

SALMON-SAFE ACCREDITATION COMPLIANCE	☐ Accreditation is conditional ☐ Accreditation conditions have been satisfied ☐ Accreditation issued without conditions

• **CONDITION 1** *(describe condition)*	Met Condition? ☐ Yes ☐ No ☐ In Process	CONDITION VERIFICATION *Condition Cleared* ☐ Yes ☐ No Reviewer Initials _____
Action Taken to Correct Issue		
• **CONDITION 2** *(describe condition)*	Met Condition? ☐ Yes ☐ No ☐ In Process	CONDITION VERIFICATION *Condition Cleared* ☐ Yes ☐ No Reviewer Initials _____
Action Taken to Correct Issue		

• **CONDITION 3** *(describe condition)*	Met Condition? ☐ Yes ☐ No ☐ In Process	CONDITION VERIFICATION *Condition Cleared* ☐ Yes ☐ No Reviewer Initials _____
Action Taken to Correct Issue		

SUMMARY OF ACTIVITY—*Provide a statement summarizing the major construction activity in which the company has engaged during the last year. Qualitatively assess the level of site disturbance, ability to fully implement best management practices that avoid site runoff and any significant events that resulted in lessons learned and continual improvement. In the event the certificate of accreditation was issued conditionally, summarize actions to correct issues identified during Salmon-Safe's initial evaluation. In the event a field-level evaluation was not possible during the initial evaluation, provide identification of construction site(s) and work with Salmon-Safe to schedule an evaluation.*

Attach additional sheets if you completed more than six projects in the reporting period.

• **PROJECT NAME**	Project Size (in square feet or acres)
*Describe how Salmon-Safe's pollution prevention hierarchy—**eliminate/greatly limit/reduce** (Category 2, pp. 7–9 in the standards) was applied at project.*	

☐ Summary of monitoring data collected on project discharges is attached.

• **PROJECT NAME**	Project Size (in square feet or acres)
*Describe how Salmon-Safe's pollution prevention hierarchy—**eliminate/greatly limit/reduce** (Category 2, pp. 7–9 in the standards) was applied at project.*	

☐ Summary of monitoring data collected on project discharges is attached.

• **PROJECT NAME**	Project Size (in square feet or acres)
*Describe how Salmon-Safe's pollution prevention hierarchy—**eliminate/greatly limit/reduce** (Category 2, pp. 7–9 in the standards) was applied at project.*	
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• **PROJECT NAME**	Project Size (in square feet or acres)
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• **PROJECT NAME**	Project Size (in square feet or acres)
*Describe how Salmon-Safe's pollution prevention hierarchy—**eliminate/greatly limit/reduce** (Category 2, pp. 7–9 in the standards) was applied at project.*	
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• **PROJECT NAME**	Project Size (in square feet or acres)
*Describe how Salmon-Safe's pollution prevention hierarchy—**eliminate/greatly limit/reduce** (Category 2, pp. 7–9 in the standards) was applied at project.*	
☐ Summary of monitoring data collected on project discharges is attached.	

SALMON-SAFE INC.

SALMON-SAFE INFORMATION SHEET

A Comparison of Alternative Road Deicers

Salmon-Safe recognizes the wintertime balance between public safety on ice- or snow-covered roads and environmental protection. We seek to inform companies and institutions that have achieved Salmon-Safe accreditation and certification, including road maintenance departments, about options for reducing toxicity of road deicing chemicals and potential negative effects on salmon and other aquatic life in water bodies receiving road runoff.

From the salmon perspective, the specification of a deicer should be especially carefully evaluated when a road drains to any relatively small, salmon-supporting water body. If deicer use cannot be avoided in such cases, the best protection would be to channel runoff through an extensive vegetated area to capture and hold the potentially harmful deicer components.

Sodium chloride is by far the most common deicer for roads. Magnesium and calcium chlorides are in some use, being effective to lower temperatures although more expensive and requiring greater application mass because of decreased freezing point depression. All chloride-based deicers are potentially toxic to aquatic life, damage roadside vegetation, and corrode metals in bridge structures and concrete reinforcing bars. Sodium can diminish human cardiovascular health when contaminating wells and other water supplies. Chloride is usually not a threat to human health but can cause taste and odor problems in drinking water. Magnesium, especially, but also sodium, calcium and potassium damage concrete. All of these light metals can release potentially toxic heavy metals from contaminated soils through ion exchange reactions. Additives to counter corrosion, concrete damage, and the tendency of the products to cake can also be toxic to aquatic life. The potential impact of all of these negative effects is dependent on the concentration of the chemical, pointing out the importance of using the minimum needed. In proper use, elevated potential for aquatic toxicity problems should only occur in relatively small water bodies.

Exhaustive research on calcium magnesium acetate (CMA) has demonstrated the only potential environmental problems at any anticipated environmental concentration are aquatic dissolved oxygen reduction and soil metal release (Horner 1988).[1] The concentration necessary to depress oxygen, however, is sufficiently high that it would only be expected to occur in small, poorly flushed lakes and small, slowly flowing streams. Metals in soils were not mobilized in sufficient quantities to be a concern but could be if CMA meltwater flows over a highly contaminated soil, as with any deicing option other than urea. Because of its high cost, CMA use is mostly limited to locations sensitive to aquatic toxicity or corrosion. It has, for example, been the choice for new bridges to avoid the beginning of progressive chloride corrosion.

Potassium and sodium acetates are also on the market and share most of the advantages of CMA with fewer disadvantages than the chloride-based deicers. Of the three acetate formulations, sodium acetate is overall somewhat less advantageous environmentally than the others. Just as in a chloride form, sodium is potentially more harmful to potable water supplies. Also, sodium can reduce the stability and permeability of soil receiving its runoff.[2]

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[1] Horner, R.R. 1988. "Environmental Monitoring and Evaluation of Calcium Magnesium Acetate (CMA)", *National Cooperative Highway Research Program Report 305.* Transportation Research Board, Washington, DC.

[2] Fischel, M. 2001. "Evaluation of Selected Deicers Based on a Review of the Literature", *Report No. CDOT-DTD-R-2001-15.* Colorado Department of Transportation, Denver, Colorado.

SALMON SAFE

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Road deicers on the market differ in their deicing ability, negative effects on the environment, price and secondary costs resulting from damage to roadway materials. The following table is a summary comparison of alternative road deicers with respect to these factors. In general, Salmon-Safe recommends avoiding all chloride-based deicers where the runoff can flow to a headwaters (third-order or smaller[3]) salmon spawning or rearing stream, unless it passes through green stormwater infrastructure (GSI) designed to reduce the discharge quantity through infiltration and evaporation and decreases chloride in the remaining runoff through plant and soil contact. If providing adequate GSI treatment is impossible and deicing is still essential, Salmon-Safe recommends highly targeted application of CMA, using the minimum amount, number of applications, and area coverage necessary for safety. With respect to any deicer involved in the drainage of any water body or groundwater recharge area, careful use of the minimum needed is the best rule.

A Comparison of Alternative Road Deicers[4]

Deicer	Aquatic Ecosystem Effects	Other Environmental Effects	Material Effects	Low Temperature Limit (°F)	Freezing Point Depression (°C/unit weight)	Usage Consistent with Salmon-Safe Certification	Cost Relative to Sodium Chloride
Sodium chloride (rock salt)	Chloride and additive toxicity	Sodium contamination of drinking water source; vegetation damage; mobilization of heavy metals in soil	Corrosive; concrete damage	20	1	Avoided in drainages to headwater streams unless adequate GSI treatment; used in minimum needed amounts in drainages to larger water bodies and groundwater recharge areas	1.0x
Magnesium chloride	Chloride and additive toxicity	Vegetation damage; mobilization of heavy metals in soil	Corrosive; concrete damage	5	0.29		2.5x
Calcium chloride	Chloride and additive toxicity	Vegetation damage; mobilization of heavy metals in soil	Corrosive; concrete damage	-25	0.53		5.5x
Potassium chloride	Chloride and additive toxicity	Vegetation damage; mobilization of heavy metals in soil	Corrosive; concrete damage	12	0.78		1.5x
Calcium magnesium acetate	Dissolved oxygen reduction	Mobilization of heavy metals in soil	Concrete damage	0	0.30	Targeted usage in minimum needed amounts in drainages to headwaters streams	20x
Potassium acetate	Dissolved oxygen reduction	Mobilization of heavy metals in soil	Concrete damage	-15	0.60		25x
Urea	Ammonia and additive toxicity; eutrophi-cation			15	0.97	same as chloride deicers	1.5x

[3] When two first-order streams come together, they form a second-order stream. When two second-order streams come together, they form a third-order stream. Streams of lower order joining a higher order stream do not change the order of the higher stream.

[4] After: (1) Kelly, V.R., Findlay, S.E.G., Schlesinger, W.H., Chatrchyan, A.M., Menking, K. 2010. "Road Salt: Moving Toward the Solution", *The Cary Institute of Ecosystem Studies*, Milbrook, New York. (2) Public Sector Consultants, Inc. 1993. "The Use of Selected Deicing Materials on Michigan Roads: Environmental and Economic Impacts", Michigan Department of Transportation, Lansing, Michigan.

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