

Closure and Post-Closure Plan Contents and Performance Standards

1. *Closure requirements and performance standards.* The following closure requirements apply in full to facilities used for managing NOA-bearing sediment located within the Site. These facilities shall include all constructed engineering controls, repositories, and other appurtenances used by Whatcom County Public Works and Whatcom County Flood Control Zone District (County) to manage NOA-bearing sediment.
 - (a) The County shall submit to the Department of Ecology (Ecology) for review and approval a plan for the closing, or partial closing, and providing for the post-closure care of the facilities. The closure plan can recognize the on-going nature of in-channel structures such as revetments, sediment traps and basins. These in-channel structures will likely need active management until such time as the Sumas Mountain Landslide stabilizes and ceases to supply NOA-bearing sediment. Repositories and off-channel engineered controls, like setback levees and deflection berms, can follow a more traditional closure plan. The plan must identify steps necessary to perform partial and/or final closure of the facilities at any point during its active life.
 - (b) The County shall notify Ecology, and where applicable, the financial assurance instrument provider, sixty (60) days in advance of closure of the facilities, or any portion thereof.
 - (c) *Closure Performance Standard.* The facilities, or any portion thereof, shall close in a manner that:
 - i. Minimizes the need for further maintenance;
 - ii. Controls, minimizes, or eliminates threats to human health and the environment from post-closure escape of NOA-bearing sediment constituents, to groundwater, surface water, and the atmosphere;
 - iii. Returns the land to the appearance and use of surrounding land areas to the degree possible given the nature of the facility; and
 - iv. Prepares the facility, or any portion thereof, for the post-closure period.
 - (d) For facilities identified as repositories, the owner or operator shall commence implementation of the closure plan in part or whole within one hundred eighty (180) days after attaining the final fill elevation at part of or at the entire repository as identified in the approved closure plan unless otherwise specified in the closure plan.
 - (e) The owner or operator shall develop, keep, and abide by a closure plan approved by Ecology as part of the permitting process. At a minimum, the closure plan shall include the following information:
 - i. A description of how the facilities will be closed in accordance with the performance standards described in subsection (c) of this section;
 - ii. An estimate of the volume of NOA-bearing sediment located on the facilities;
 - iii. A description of the final closure cover, designed in accordance with subsection 3. Final Closure System Design of this section, the methods and procedures to be used to install the closure cover, sources of materials for the closure cover, and a schedule or description of the time required for completing closure activities;
 - iv. Projected time intervals at which sequential partial closure and final closure are to be implemented;
 - v. A description of the activities and procedures that will be used to ensure compliance with (a) through (i) of this section;
 - vi. Provide the conditions for new or amended environmental covenants; and
 - vii. Closure cost estimates and projected fund withdrawal intervals for the associated closure costs, from the approved financial assurance instrument.
 - (f) The County shall submit final engineering closure plans, in accordance with the approved closure plan and all approved amendments, for review, comment, and approval by Ecology.

- (g) When closure is completed in part or whole, the County shall submit the following to Ecology:
- i. Repository and engineering controls closure plan sheets signed by a professional engineer registered in the state of Washington and modified as necessary to represent as-built changes to final closure construction, as approved in the closure plan; and
 - ii. Certification by the County, and a professional engineer registered in the state of Washington, that the facilities, or a portion thereof, has have closed in accordance with the approved closure plan.
- (h) Where applicable, the County shall record maps and a statement of fact concerning the location of the facilities as part of the deed with the county auditor not later than three months after closure.

2. *Post-closure requirements.*

- (a) The County shall provide post-closure activities to allow for continued facility maintenance and monitoring of air, land, and water for a period sufficient for the facilities to stabilize and to protect human health and the environment. Post-closure care includes at least the following:
- i. Maintaining the integrity and effectiveness of any final closure cover, including making repairs to the closure cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, maintaining the vegetative cover where applicable, and preventing run-on and runoff from eroding or otherwise damaging the final closure cover;
 - ii. General maintenance of the engineered controls and other structures for their intended use;
 - iii. Monitoring groundwater, surface water, or other waters in accordance with the requirements the approved monitoring plan, including remedial measures if applicable, and maintaining all monitoring systems;
 - iv. Monitoring air quality;
 - v. Maintaining, operating, and monitoring hydraulic gradient controls systems if applicable;
 - vi. Any other activities deemed appropriate by Ecology.
- (b) The County shall commence post-closure activities for the facilities, or a portion thereof, after completion of closure activities outlined in subsection 1. *Closure Requirements and Performance Standards* of this section. Ecology may direct that post-closure activities cease until the Authority receives a notice to proceed with post-closure activities.
- (c) The County shall develop, keep, and abide by a post-closure plan approved by Ecology as a part of the permitting process. The post-closure plan shall:
- i. Address facility maintenance and monitoring activities for a period sufficient for the facilities, or a portion thereof, become stabilized, and monitoring of groundwater, surface water, air, and settlement can be safely discontinued; and
 - ii. Project time intervals at which post-closure activities are to be implemented, and identify post-closure cost estimates and projected fund withdrawal intervals from the selected financial assurance instrument, where applicable, for the associated post-closure costs.
- (d) The County shall complete post-closure activities for the facilities, or portion thereof, in accordance with the approved post-closure plan and schedule, or the plan shall be so amended with the approval of Ecology.
- (e) When post-closure activities are complete, the owner or operator shall submit a certification to Ecology, signed by the County, and a professional engineer registered in the state of Washington stating why post-closure activities are no longer necessary.
- (f) If Ecology finds that post-closure monitoring has established that the facility, or a portion thereof, is stabilized, Ecology may authorize the owner or operator to discontinue post-closure maintenance and monitoring activities.

(g) Ecology shall notify the County of the date when the Ecology has verified that the facility has completed post-closure activities in accordance with the specifications of the approved post-closure plan.

3. *Final closure system design*

(a) Facilities shall be closed in accordance with a design that:

- i. Prevents exposure of NOA-bearing sediment;
- ii. Prevents erosion from wind and water;
- iii. Addresses anticipated settlement;
- iv. Minimizes the need for post-closure maintenance;
- v. Provides for the management of run-on and runoff, preventing erosion or otherwise damaging the closure cover;
- vi. Provides sufficient stability and mechanical strength;
- vii. Meets the requirements of regulations, permits and policies administered by the jurisdictional air pollution control authority or the department under chapter 70.94 RCW, Washington Clean Air Act and Section 110 of the Federal Clean Air Act.

(b) *Presumptive final closure cover*

- i. Facilities that are designed and constructed with the following closure cover are presumed to meet the standards in (a)(i) through (ii) of subsection 3. Final Closure System Design.
- ii. An alternative final closure cover shall be used when the nature of the facility or other factors are incompatible with the presumptive final closure cover system.
- iii. The presumptive final closure cover consists of the following:
 - (A) An anti-erosion layer consisting of a minimum of two feet (60 cm) of earthen material of which at least twelve inches (30 cm) of the uppermost layer is capable of sustaining native vegetation.
 - (B) Vegetative growth that can be established through hydroseeding or through tree/shrub planting in conjunction with heavy mulch.