

Swift Creek

Sediment Management Action Plan (SCSMAP)

**PHASE 3 PROJECT PLAN PROPOSAL**

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## Proposal for: SCSMAP Phase 3 Project Plan

To meet challenges related to Swift Creek flooding, potential health risk, and potential for creek avulsion, Whatcom County has identified a set of strategies appropriate for implementation under the Swift Creek Sediment Management Action Plan (SCSMAP). The SCSMAP identified and prioritized problems within the watershed. Highest priority problems included potential avulsion in all reaches, potential for sediment deposition that could be considered a potential public health risk, and the need to plan for debris flow or outbreak flooding. In addition, Swift Creek overbank flooding or avulsion could significantly impact the Breckenridge Creek watershed, a watershed on which Whatcom County has worked to restore overall ecological health.

The high priority strategies identified in the SCSMAP included:

- Development of debris deflection and setback levees
- Development of in-stream sediment traps
- Further exploration of sediment basins for trapping suspended sediment
- Maintenance and repair, including annual maintenance, channel conveyance, and large-scale maintenance and repair
- Slide stabilization in the form of a toe buttress.

### 1.1 Safe Sediment Disposal Concept

Projects were identified for implementation in SCSMAP Phase 1 to address high priority strategies of the plan. Ongoing maintenance activities associated with sediment management structures developed under SCSMAP Phase 1 have prompted examination of SCSMAP strategy 4.2D, Safe Sediment Disposal. The safe sediment storage/repository concept includes identification of a site for constructing a permanent repository for Swift Creek sediment to reduce migration within the Swift Creek system and the potential for exposure.

Safe sediment disposal, as described in the SCSMAP, includes identification of a sediment storage location (repository) in close proximity to Swift Creek. A sediment repository will be required to store sediment from the following:

- Swift Creek dredging between Goodwin Road and the confluence of the Sumas River to restore channel cross-sections
- Annual maintenance of in-stream sediment traps to be constructed in the Canyon Reach
- Sediment basin maintenance (assumed to once every 10 years).

The identified repository would be expected to contain 1,000,000 yd<sup>3</sup> of Swift Creek-source sediment for a 10-year period. If a sufficiently large repository is identified, existing Swift Creek stockpiles may be removed and placed in the repository.

The repository location would ideally be in close proximity to the sediment dredging area to reduce transportation costs. Whatcom County, in the period of development of the SCSMAP, examined gravel mine locations within a six mile radius of Swift Creek. An unused gravel pit or quarry would be advantageous for a sediment repository because of reduced site preparation costs, lack of disturbance of undeveloped/unimpacted land, and relatively low transportation costs.

Once the repository reaches capacity, it would be closed in accordance with the appropriate federal, state and local requirements. The closure would be performed such that the final cover system could blend in with the natural topography.

Implementation of this alternative would require obtaining a suitable repository site within proximity to the Swift Creek sediment removal location. While hauling and placing the material, visible dust emissions would need to be prevented with water/surfactant application and control of runoff. Requirements for a repository include a barrier fence and warning signs.

## 1.2 Safe Sediment Disposal Preliminary Benefits Analysis and Planning-Level Costs

Benefits expected to be derived from safe and long term sediment disposal in a repository.

- Sediment would be removed from the Swift Creek system and prevented from re-entering the system, reducing potential asbestos exposure pathways.
- Additional stockpiles of dredged sediment would not be created.

Strategy	Projected Planning Level Cost
4.2D	Safe Sediment Disposal Repository Identification (including purchase): \$1,000,000 Annual Dredging, Transportation, PWAP Implementation, Monitoring: \$2,170,000

## 1.3 Safe Sediment Disposal Next Steps

Work completed on this strategy to date includes a cursory examination of possible off-site storage locations. This strategy would fully develop an off-site storage protocol for Swift Creek sediment storage, including a system for tracking all sediment removed from the Swift Creek area.

A first step in implementing Strategy 4.2D includes development of locational criteria for off-site sediment storage that would consider transportation costs, proximity of residences, natural features such as adjacent wetlands or streams, and groundwater conditions. Refinement of the previous analysis of gravel mines within a reasonable distance of Swift Creek would be required. If a gravel mine within a reasonable transportation distance is not found to be a feasible option, additional sites will be considered. Once a site is selected based on identified criteria, property purchase would be required.

After a site is selected and purchased, the following would be developed:

- Generalized monitoring criteria that would apply to all off-site storage locations and facilities. Site-specific monitoring plans would also be required.
- Stabilization criteria for capping, planting, or other stabilization methodology. Capping and stabilization would be required to close the repository once it is full. An identified repository is expected to include a minimum 10 year life.