

5.11 Soil Erosion & Sediment Control

Soil disturbance is inevitable from most road construction activities. Control of soil erosion and the subsequent transport of sediment during road construction are therefore important concerns where there is direct or indirect connectivity to water. Erosion control addresses the source of soil erosion, whereas sediment control addresses the control and retention of sediment. As erosion control has a generally higher level of effectiveness than sediment control, ensure that the primary goals are, first, to minimize potentially damaging erosion of the disturbed sites; and, second, to limit the transport of sediment from these sites.

5.11.1 Soil Erosion Control Techniques

To minimize surface soil erosion after road construction, cover all exposed soils that are subject to weathering (e.g., silty and sandy non-cohesive soils and clayey and other cohesive fine-grained soils) with grass and legume vegetation. A variety of erosion seed mixes are available that provide for rapid germination and long-term growth to create a solid sod layer. Take care to ensure that the seed species selected are compatible with domestic livestock. Establish this vegetative cover to protect and hold soil by:

- decreasing the erosive effects of rain drop impact on soil particles;
- decreasing runoff velocity and volumes; and
- promoting water infiltration into the soil.

Apply the cover as soon as slopes are completed, rather than after the entire road project is complete. Prompt revegetation by dry broadcast (by hand or spreader) or by hydroseeding not only assists with erosion control; it also helps to prevent the spread of noxious weeds.

Other soil erosion control techniques include, but are not limited to, the following:

- confinement of sensitive operations to periods of dry weather and selection of equipment that will create the least disturbance;
- compliance with local rainfall shutdown guidelines;
- temporary diversion or impoundment of stream flow using diversion ditches and berms to reduce the exposure of disturbed soil to flowing water during stream-crossing structure construction, or construction of rock-lined ditches or channels to provide a durable erosion-resistant surface; and
- installation of rock, straw bale, or sand bag check dams across a defined ditch or channel,

or placement of riprap on a slope, to reduce water velocity and scour potential.

For more detailed information on control of soil erosion and sediment transport, refer to the Ministry of Forests' [Best Management Practices Handbook: Hillslope Restoration in British Columbia](#).

5.11.2 Sediment Control Techniques

To minimize sediment transport away from the road prism and disposal sites, consider using the following sediment control techniques:

- install silt fencing to collect and detain runoff and retain sediment;
- install sediment retention berms (e.g., berm constructed of brush, rock, wood chips, or other material that may be wrapped in geotextile fabric);
- install sediment basins and traps to detain runoff and retain sediment;
- confine sensitive operations to periods of dry weather, minimize traffic through these areas, and select equipment that will create the least disturbance (e.g., rubber-tired or rubber-tracked machinery);
- for stream culvert installations, use temporary diversion or impoundment of stream flow to reduce the exposure of disturbed soil to flowing water – being sure to obtain prior agency approval, if required.

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