

DRAINAGE, EROSION, AND SEDIMENT CONTROL (DESC)

A successful DESC strategy prevents water-related effects on and off the work area and sediment from entering waterbodies. Work site or right-of-way factors such as slope length, elevation change, soil type, and the kinds of local surface water figure in the DESC risk evaluation. Proactive water management will mean less water related site repair and maintenance and more successful reclamation after the construction phase

As responsible stewards of the environment, Surerus Murphy Joint Venture's DESC strategy help erosion control specialists minimize soil erosion and sediment loading of waterways to protect these habitats for native species.

Stewardship:

Proper drainage, erosion, and sediment control measures help protect the surrounding environment, including nearby water bodies, ecosystems, and habitats. The foundation of DESC success lies within the workforce. Surerus Murphy projects involve foremen and their crews, emphasizing the importance of their roles in installing and maintaining DESC measures in their work areas. Prior to commencing work on-site, all workers undergo a general orientation that includes basic information and importance of DESC. The utility crew involved in DESC installation and maintenance may undergo an additional orientation ensuring an informed commitment to DESC methodologies. We also have some personnel with a designation who hold special training in erosion and sediment control. Some project sites have a high risk of erosion and/or sedimentation into waterways and require a person with specialized training in erosion control management.

Strategies Employed to Manage Erosion and Sediment Control:

Mitigating environmental impacts is most effectively achieved through prevention. As an integral part of our proactive strategy towards DESC, the Environment team conducts assessments of the site's DESC requirements during the project's grade planning stages. This requires traversing the entire right-of-way or work area to ensure a comprehensive understanding of the risk from erosion and sedimentation.

After planning, DESC measures and mitigations are installed immediately after initial soil disturbance and are regularly maintained throughout the lifetime of the project until permanent erosion control is implemented, and the right-of-way is restored and stable.

One of the most effective methods to minimize erosion is by limiting disturbance to the site, vegetation, and soils. Whenever feasible, Surerus Murphy strives to retain the existing vegetation by following site management best management practices such as limiting construction to the smallest area possible and minimal surface disturbance construction. In cases where areas have been cleared and stripped, Surerus Murphy ensures that stabilization or revegetation takes place as soon as possible within the construction sequence.



Temporary Erosion and Sediment Control:

Temporary erosion control measures are installed throughout the construction phase and are often installed in locations where the right-of-way and approved access roads intersects or is adjacent to:

- Watercourses and wetlands
- Entry and exit points of water runoff
- Where clay or gravel is used for temporary access
- Steep slopes or on long gradual slopes

These are areas vulnerable to erosion and sediment, and Surerus Murphy environment personnel ensure that they are identified, and the proper structures are deployed. These structures include silt fences, straw wattles, geotextile cloth, logs and woody debris, and sandbags. Temporary control measures are removed as part of the clean-up process.

Permanent erosion control measures such as revegetation, rollback, and diversion berms can be effectively installed after completion of the construction process.

Water Management:

Water management plays a pivotal role as the most effective way to prevent soil erosion and sediment transportation into aquatic environments.

Operating alongside construction activities, effective prevention of environmental impacts requires the management of water originating offsite and water originating onsite. Water originating off-site is usually clean water originating from outside the Project area and is diverted prior to the water reaching the site. Water that originates onsite requires preventative measures, including the implementation of DESC structures to regulate the flow away from the worksite and the application of necessary water treatment protocols.

Some water management techniques include:

- Creation of a sediment control pond for dewatering to remove sedimentation in water prior to release.
- Site dewatering of the pipe trench, bellholes, workspace, and the right-of-way.
- Pumping out stormwater that accumulates in excavated or low-lying areas following a large storm event.
- Using a sump pump to remove groundwater in excavations that extend below the water table.

All water pumped offsite will be discharged onto stable surfaces (i.e., sheeting, rocks, sandbags), well-vegetated areas, or into filter bags or other effective sediment filtering devices such as pigpens.

Best Management Practices (BMP):

The overall goal for erosion and sediment control site management is to minimize the disturbed soil area and the duration of exposure, establish a perimeter limit of construction activity, gravel temporary access roads, cover or seed stockpiles, dust control, and protect all sensitive receptors.

Erosion and sediment control BMPs are techniques used to prevent or control soil erosion and sediment movement. Some common BMPs includes:

- Silt fences
- Straw wattles
- Geotextile cloth
- Riprap or rock cover
- Diversion berms

Silt fencing



Riparian protection



Watercourse crossing with channel rock armouring



Stories from the Field

Recent experience with provincial regulatory agencies has shown a noticeable increase in regulatory interest in erosion and sediment control on our projects, particularly those projects located in BC. In addition to extra scrutiny on our mitigation measures and their effectiveness, inspections have progressed to identification of possible sources of erosion and providing mitigation measures for these potential sources of erosion and sedimentation. Since expectation from regulators has increased, we need to likewise increase the effort and resolve to identify all areas where erosion and sedimentation can be a factor on our projects and provide appropriate mitigation measures.

Species at Risk Act fish containing watercourse



Supporting Canada's Energy Transition:

Surerus Murphy is supporting our clients who are constructing infrastructure for Canada's low-carbon economy. To meet our 2050 net-zero commitments, Canada's infrastructure requires new builds or retrofitted pipelines, facilities, and infrastructure. Building these assets is our wheelhouse.

We have a dedicated team of resources focusing solely on the energy transition who are researching current and developing technologies relating to hydrogen, hydrogen carriers (ammonia/methanol), carbon capture, bioenergy, as well as any other technologies that may be utilized for gas production, transportation, compression, or storage in a net-zero economy.

Whether it's the energy transition of a country or the transition of a product being moved through a pipeline, we build the infrastructure that delivers quality assets in a safe and timely manner and that adapt to the energy transition.

Dewatering filter bag



Surerus Murphy Key Contacts:

- **QHSE:**
QHSE@surerus-murphy.com
- **HR:**
recruitment@surerus-murphy.com
- **Media & Issues:**
marketingcommunications@surerus-murphy.com
- **Local & Indigenous Engagement:**
indigenouslocalengagement@surerus-murphy.com



www.surerus-murphy.com | 403.930.1358