

OKEMO MOUNTAIN ACCESS ROAD CULVERT REPLACEMENT LUDLOW, VERMONT



The access road to Okemo Mountain Ski Resort in Ludlow, VT crosses a stream which has springtime flows of 650 cfs. The former stream crossing utilized a nine foot diameter steel plate culvert. The culvert bottom was corroded which allowed water to pass in and out of the culvert structure, eroding the gravely sands that formed the backfill around the culvert. This caused sagging of the road surface over the culvert and significant sink holes around the culvert itself.

Design constraints for the project included the ability to accommodate the 50 year storm, be constructed with minimal traffic interruption, allow fish passage and be cost effective. The culvert design also had to accommodate existing water, sewer, and buried communications conduits routed up the access road. After reviewing the options, a precast culvert replacement was selected.

There were significant challenges with the culvert design to meet the Fish and Wildlife criteria for fish passage. The final solution was to construct the culvert with interior stilling basins to trap natural stream materials and provide riprap along the culvert walls to provide fish resting areas.

KEY FEATURES

- Project constructed in approximately 20 days with minimal traffic disturbance.
- Design to meet Fish & Wildlife criteria for aquatic organism and fish passage.
- Minimal stream alteration with stream flows maintained during construction.
- 16' x 8' culvert provides approximately double the original hydraulic capacity.
- Wastewater flows maintained by sewer bypass pumping system.