

TABLE 7
Sediment Management and Dam Removal Options - Preliminary Cost Estimate
Potential Removal of the Coldstream Dam

Sediment Management and Dam Removal Options	Capital Cost Estimate for Dam Removal	Capital Cost Estimate for Sediment Removal	Total Capital Cost Estimate	Comments
Option 1: Dredging of sediment with water in head pond followed by complete dam removal.	\$1,100,000 to \$1,300,000	>\$2,000,000 Need to construct very large sediment/dewatering lagoon on north side of head pond.	>\$3,100,000 to \$3,300,000	Cost to design, approve and construct large sediment/dewatering pond difficult to estimate. Would also be final restoration costs of dewatering pond once sediment dries. Major impact on conservation authority site project.
Option 2: Temporary bypass of river around dam. Excavate sediment "in the dry" and complete dam removal.	\$700,000 to \$900,000	>\$1,800,000 Cost to build large bypass channel or large bypass pipe around north side of head pond would be extremely high.	>\$2,500,00 to \$2,700,000	Technically difficult. The bypass channel/pipeline likely would need to be quite large to accommodate a reasonably large flow, i.e. ± 5 m³/s. Deep excavation likely required through higher lands on northern side of pond. Removal of excavated sediment from "dry pad" likely difficult due to wet, soft soil conditions.
Option 3: Remove dam in phases over ± 3 years. Allows slow release of sediment over 3 years.	\$1,600,000	Essentially zero cost for active sediment management as sediment would slowly wash downstream. Assume \$300,000 for bioengineering stabilization of emerging stream banks.	\$1,900,000	Second lowest overall cost. Agreement from all review agencies (DFO, MECP, MNRF and SCRCA) required <u>in advance</u> to allow downstream sediment release from head pond.
Option 4: One time removal of complete dam. Allow one time release of sediment.	\$1,100,000 to \$1,300,000	Essentially zero cost for active sediment management as sediment would wash downstream. Assume \$300,000 for bioengineering stabilization of emerging stream banks.	\$1,400,000 to \$1,600,000	Lowest overall cost. Agreement from all review agencies (DFO, MECP, MNRF and SCRCA) required <u>in advance</u> to allow downstream sediment release from head pond.
Option 5: Partial dam removal. Construct "rocky ramp" step pool system to provide fish passage.	\$500,000 for partial dam removal in one year.	Essentially zero cost for active sediment management as sediment would wash downstream. Assume \$300,000 for bioengineering stabilization of emerging stream banks.	\$800,000	Lowest overall cost. Provides fish passage and minimizes downstream sediment migration.
Option 6: Construct permanent new, natural stream channel around dam headpond. Leave dam and sediment in place as is.	New channel would be approximately 350 m long and designed for major flood flows of approximately 100 cubic meters per second. The cost of the new channel is estimated to be \$1,800,000 to \$2,100,000.	No cost. Sediment remains in place.	Cost for new permanent, stream channel estimated to be \$1,800,000 to \$2,100,000.	Cost similar to Options 3 and 4 but more than Option 5. Long term, dam removal and sediment management may still be required.
Option 7: Do nothing.	Theoretically zero cost. However, ultimately, dam will reach end of service life and will need to be repaired, rebuilt or removed.	No cost.	Theoretically zero.	Volume of sediment in head pond will continue to increase over time. With inflation and extra sediment, future costs for dam removal will increase compared to current costs.

Note: Capital costs do not include consultation, engineering or permitting costs.