

Appendix 7-2

Summary of Potential Construction and Operations and Maintenance Effects on Physical Environment Valued Components Prior to Mitigation

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Valued Component	Potential Effect	Potential Construction/Operations and Maintenance Effects Before Mitigation					Level of Potential Effect ¹
		Extent		Frequency	Reversibility	Ecological Context	
		Magnitude/Geographic Extent	Duration				
Surface Water	Alteration of surface drainage patterns and stream flow.	Measurable effect marginally beyond established thresholds of acceptable change.	Timeframe of greater than 10 years.	Occurs once over the duration of the disturbance.	Project-specific effects are permanent.	No adverse ecosystem effects.	Moderate
		Level II	Level III	Level I	Level III	Level I	
	Alteration of ice freeze-up/break-up dynamics at watercourse crossings.	Measurable effect marginally beyond established thresholds of acceptable change.	Timeframe of greater than 10 years.	Occurs once over the duration of the disturbance.	Project-specific effects are permanent.	No adverse ecosystem effects.	Moderate
		Level II	Level III	Level I	Level III	Level I	
	Temporary increase in suspended sediments in surface water.	Measurable effect marginally beyond established thresholds of acceptable change.	Short-term activities such as the time required to complete a discrete component.	Occurs at sporadic or intermittent intervals.	Potential effect is potentially reversible but over a long period of time.	No adverse ecosystem effects.	Low
		Level II	Level I	Level II	Level II	Level I	
	Impaired surface water quality due to introduction of hazardous substances.	Measurable effect marginally beyond established thresholds of acceptable change.	Short-term activities such as the time required to complete a discrete component.	Occurs at sporadic or intermittent intervals.	Potential effect is potentially reversible but over a long period of time.	No adverse ecosystem effects.	Low
		Level II	Level I	Level II	Level II	Level I	
Air Quality	Release/transport of dust/particulates due to the use of vehicles/machinery and blasting.	Measurable effect marginally beyond established thresholds of acceptable change.	Short-term activities such as the time required to complete a discrete component.	Occurs at sporadic or intermittent intervals.	Potential effect is potentially reversible but over a long period of time.	No adverse ecosystem effects.	Low
		Level II	Level I	Level II	Level II	Level I	

Valued Component	Potential Effect	Potential Construction/Operations and Maintenance Effects Before Mitigation					Level of Potential Effect ¹
		Extent		Frequency	Reversibility	Ecological Context	
		Magnitude/Geographic Extent	Duration				
	Increased greenhouse gases and VOCs due to the use of vehicles/machinery.	Measurable effect marginally beyond established thresholds of acceptable change.	Short-term activities such as the time required to complete a discrete component.	Occurs at sporadic or intermittent intervals.	Project-specific effects are permanent.	No adverse ecosystem effects.	Low
		Level II	Level I	Level II	Level III	Level I	
	Reduction of carbon sink with removal of vegetation.	Measurable effect marginally beyond established thresholds of acceptable change.	The potential effect is likely to persist until the completion of construction and rehabilitation activities.	Occurs once over the duration of the disturbance.	Project-specific effects are permanent.	No adverse ecosystem effects.	Moderate
		Level II	Level II	Level I	Level III	Level I	
Noise and Vibration	Increased noise associated with the use of vehicles and machinery.	Measurable effect marginally beyond established thresholds of acceptable change.	Short-term activities such as the time required to complete a discrete component.	Occurs at sporadic or intermittent intervals.	Readily reversible over a relatively short period of time.	No adverse ecosystem effects.	Low
		Level II	Level I	Level II	Level I	Level I	
	Increased noise and vibration as a result of blasting activities.	Measurable effect marginally beyond established thresholds of acceptable change.	Short-term activities such as the time required to complete a discrete component.	Occurs at sporadic or intermittent intervals.	Readily reversible over a relatively short period of time.	No adverse ecosystem effects.	Low
		Level II	Level I	Level II	Level I	Level I	

Note: 1 The level of potential effect was ranked as being 'low', 'moderate' or 'high' based on the extent, frequency, reversibility and ecological context of the potential effect prior to the implementation of mitigation measures, and the probability of the occurrence of the predicted effect. A predicted effect was considered to be 'low' if there is a low probability of occurrence, 'moderate' if it has a moderate probability of occurrence, and 'high' if there is a high probability of occurrence.