



RISK ASSESSMENT OVERVIEW AND EXAMPLE IMPACT RATING

1. Risk Assessment Methodology

$$\text{Risk} = \text{Likelihood} \times \text{Consequence}$$

1.1 Likelihood

Determining the likelihood of an event is determined based on the climate science and current observations.

LIKELIHOOD RANKING	RECURRENT IMPACT	SINGLE EVENT
Almost Certain (5)	Could occur several times per year	More likely than not – probability greater than 50%
Likely (4)	May arise about once per year	As likely as not – 50/50 chance
Possible (3)	May arise once in 10 years	Less likely than not but still appreciable - probability less than 50% but still quite high
Unlikely (2)	May arise once in 10 to 25 years	Unlikely not but negligible – probability low but noticeably greater than zero
Rare (1)	Unlikely during the next 25	Negligible – probability very small, closer to zero

1.2 Consequence Ratings for Social, Economic and Environmental Factors

SOCIAL FACTORS	ECONOMIC FACTORS	ENVIRONMENTAL FACTORS
Public health & safety	Property damage	Air
Displacement	Local economy & growth	Soil & vegetation
Loss of livelihood	Community Livability	Water
Cultural aspects	Public administration	Ecosystem function

CONSEQUENCE RATINGS FOR SOCIAL FACTORS				
CONSEQUENCE RATING	Public Health & Safety	Displacement	Loss of Livelihood	Cultural Aspects
Catastrophic (5)	Catastrophic (5): Large number of fatalities or serious injuries, or permanent illness	Catastrophic (5): Large number of permanent displaced people on a widespread scale	Catastrophic (5): Large Disturbances leading to permanent changes in peoples' normal routines and way of life	Catastrophic (5): Unprecedented loss of cultural identity (traditions/ customs) across the wider community (cancellation of flagship annual event)
Major (4)	Major (4): Isolated instances of fatalities or serious injuries, or long-term illness	Major (4): Isolated instances of permanently displaced people on a widespread scale	Major (4): Large disturbances leading to prolonged changes in people's normal routines and way of life	Major (4): Significant loss of cultural identity (traditions/customs) for multiple social groups
Moderate (3)	Moderate (3): Small number of injuries or cases of illness	Moderate (3): Isolated instances of temporary displaced people on a widespread scale	Moderate (3): Moderate disturbances leading to short-term changes in people's normal routines and way of life	Moderate (3): Moderate impact on cultural identity (traditions/customs)
Minor (2)	Minor (2): Near misses or minor injuries	Minor (2): Isolated instances of temporary displaced people in localized areas	Minor (2): Minor and short-term changes to people's normal routines and way of life	Minor (2): Minor impact on cultural identity (traditions/customs) for a small number of social groups
Negligible (1)	Negligible (1): Appearance of a threat but no actual harm	Negligible (1): Appearance of a threat but no actual displacement	Negligible (1): No changes to people's normal routine and way of life	Negligible (1): Appearance of a threat but no actual impact on cultural identity (transitions/customs)

CONSEQUENCE RATINGS FOR ECONOMIC FACTORS				
CONSEQUENCE RATING	Property Damage	Local Economy and Growth	Community Livability	Public Administration
Catastrophic (5)	Catastrophic (5): Catastrophic damage and costs incurred by the owner (\$\$\$\$\$)	Catastrophic (5): City-scale decline leading to widespread business failure, loss of employment and hardships	Catastrophic (5): Permanent decline in services, causing the city to be seen as very unattractive, moribund, and unable to support the community	Catastrophic (5): Public administration would fall into decay and cease to be effective
Major (4)	Major (4): Major damage and costs incurred by the owner (\$\$\$\$)	Major (4): City-scale stagnation such that businesses are unable to thrive	Major (4): Widespread and severe decline in services and quality of life within the community	Major (4): Public administration would struggle to remain effective and would be in danger of failing
Moderate (3)	Moderate (3): Moderate damage and costs incurred by the owner (\$\$\$)	Moderate (3): Isolated areas of reduction in economic performance relative to current forecasts	Moderate (3): Isolated but noticeable examples of decline in services	Moderate (3): Public administration would be under severe pressure on several fronts
Minor (2)	Minor (2): Minor damage and costs incurred by the owner (\$\$)	Minor (2): Inconveniences that cause minor shortfall relative to current forecasts	Minor (2): There would be minor areas in which the community is unable to maintain its current services	Minor (2): There would be minor instances of public administration being under more than usual stress
Negligible (1)	Negligible (1): No damage and costs incurred by the owner (\$)	Negligible (1): No real impact to the local economy and growth	Negligible (1): No real pressure on current services	Negligible (1): No real stress on public administration

CONSEQUENCE RATINGS FOR ENVIRONMENTAL FACTORS				
CONSEQUENCE RATING	Air	Water	Soil and Vegetation	Ecosystem Function
Catastrophic (5)	Catastrophic (5): Very frequent periods of reduced air quality	Catastrophic (5): Irreversible, widespread reduction in water quality/quantity	Catastrophic (5): Irreversible, widespread impacts to soil or vegetation	Catastrophic (5): Major and widespread loss of ecological functions and irrecoverable damage
Major (4)	Major (4): Considerable increase in periods of reduced air quality in the medium term	Major (4): Major, widespread reduction in water quality/quantity in the short/medium term	Major (4): Moderate, widespread impacts on soil or vegetation in the short/medium term	Major (4): Severe and widespread loss of ecological functions and damage that could be reversed with intensive efforts
Moderate (3)	Moderate (3): Moderate increase in periods of reduced air quality in the short/medium term	Moderate (3): Moderate, widespread reduction in water quality/quantity in the short/ medium term	Moderate (3): Moderate widespread impacts on soil or vegetation in the short/ medium term	Moderate (3): Isolated but moderate instances of damage to the ecosystem that could be reversed with intensive efforts
Minor (2)	Minor (2): Minor increase in periods of reduced air quality in the short term	Minor (2): Minor, localized reduction in water quality/quantity in the short term	Minor (2): Minor, localized impacts on soil or vegetation in the short term	Minor (2): Isolated but minor instances of damage to the ecosystem that could be reversed
Negligible (1)	Negligible (1): Appearance of a threat but no real impact to air quality	Negligible (1): Appearance of threat but no real reduction in water quality/quantity	Negligible (1): Appearance of threat but no real impacts on soil vegetation	Negligible (1): Appearance of a threat but no real damage to the ecosystem and its function

2. Example Risk Assessment Results

EXAMPLE: RISK ASSESSMENT RESULTS																			
Impact ID	Climatic Threat	Impact Statement	LIKELIHOOD	SOCIAL FACTORS					ECONOMIC FACTORS					ENVIRONMENTAL FACTORS					TOTAL RISK SCORE (/300)
				Public Health & Safety	Displacement	Loss of Livelihood	Cultural Aspects	RISK SCORE (/100)	Property Damage	Local Economy & Growth	Community Livability	Public Administration	RISK SCORE (/100)	Air	Water	Soil & Vegetation	Ecosystem Function	RISK SCORE (/100)	
49	Heavy localized flooding events	Increase in flooding in areas that may lead to an increased risk of public exposure to potential illnesses and pathogens (including water-borne illnesses, mold).	4	4	2	2	1	35 (Medium-low)	3	2	2	2	35 (Medium-low)	1	3	4	2	50 (Medium)	120 (Medium-Low)

