Appendix F

Qualitative Risk Assessment

Table F.1: Management Zone 1: Burrum Heads to Eli Waters - Risk Assessment

Aspect	Source of Risk (hazards)	Environmental Impacts	Inherent Risk 2030			Inherent Risk 2050			Inherent Risk 2070			Inherent Risk 2100		
			L	C	R	L	C	R	L	C	R	L	C	R
Environmental Values														
Soils	Storm Event (erosion & storm tide inundation)	Loss of substrate with some limited potential for recovery (Hervey Bay). Change in shoreline profile (e.g. erosion scarp). Potential for erosion scarp to collapse after the event. Reduced load bearing strength near the erosion scarp. Re-distribution of sediments. Potential mobilisation of ASS or contaminated soils. Re-distribution of sediments. Increase salinity of surficial sediments. Mobilisation of nutrients & other contaminants from surficial sediments.	5	4	20	3	4	12	3	4	12	2	4	8
	Long Term Erosion & Sea Level Rise Inundation	Permanent loss of substrate. Equilibrium profile may differ from present day. Potential mobilisation of ASS or contaminated soils. Increased salinisation of soils. Change in sediment transport processes. Change in sediment composition. Rise in water table. Mobilisation of nutrients & other contaminants from surficial sediments. Landward translation of the shoreline.	4	3	12	3	2	6	2	2	4	1	1	1
Intertidal & foreshore habitat (vegetated & non-vegetated)	Storm Event (erosion & storm tide inundation)	Direct loss of substrate/vegetation with potential for recovery. Damage to intertidal habitat. Smothering &/or undermining of root system. Re-suspension of sediments and organic matter. Short-term increases in turbidity and nutrient concentrations. Short term inundation & ponding of marine water after the event.	5	5	25	4	4	16	3	3	9	2	2	4
	Long Term Erosion & Sea Level Rise Inundation	Landward translation of the intertidal zone. Potential change (increase or decrease) in the extent of the intertidal zone. Permanent loss of some habitat types, particularly vegetation. More regular and deeper tidal inundation. Shift in species composition to more tolerant species, esp. in the lower intertidal zone. Colonisation of areas that were previously supra-tidal. Potential increase in prevalence of pest species.	4	4	16	3	3	9	2	2	4	1	1	1

Aspect	Source of Risk (hazards)	Environmental Impacts	Inherent Risk 2030			Inherent Risk 2050			Inherent Risk 2070			Inherent Risk 2100		
			L	C	R	L	C	R	L	C	R	L	C	R
Coastal creeks & wetlands	Storm Event (erosion & storm tide inundation)	Temporary significant elevation of water levels. Temporary intrusion of ocean water / increased salinity. Temporary increase in mixing.	4	5	20	4	5	20	3	4	12	2	4	8
	Long Term Erosion & Sea Level Rise Inundation	Permanent increase in surface & groundwater levels. Increased tidal penetration/inundation. Increased salinisation. Change in mixing processes.	4	4	16	3	3	9	2	3	6	1	2	2
Critical Infrastructure														
Roads	Storm Event	Deterioration of road pavement and surface. Groundwater level rise. Road collapse. Temporary loss of road.	4	4	16	4	3	12	3	2	6	2	1	2
	Long term erosion and sea level rise inundation	Groundwater level rise. Deterioration of road pavement and surface. Road collapse. Permanent loss of road.	4	4	16	3	3	9	3	2	6	1	1	1
Stormwater	Storm Event	Overflow of stormwater pipes. Temporary disruption to service. Drowning of system.	3	4	12	3	3	9	3	2	6	2	1	2
	Long term erosion and sea level rise inundation	Permanent loss of pipes. Overflow of stormwater pipes. Storm water drainage and flooding damage. Degradation and failure of drainage infrastructure.	4	4	16	3	3	9	2	2	4	1	1	1
Sewer/Potable Water	Storm Event	Temporary disruption to service. Corrosion of pipes. Change in salt gradients. Overflow of sewer system.	4	4	16	4	3	12	3	3	9	2	2	4
	Long term erosion and sea level rise inundation	Degradation and failure of pipes. Long term disruption to service. Sewer spills to rivers.	4	4	16	3	3	9	3	2	6	2	1	2
Evacuation Routes	Storm Event	Temporary loss of route. Short term isolation. Short term access by Emergency Services affected.	5	3	15	4	3	12	3	2	6	1	1	1
	Long term erosion and sea level rise inundation	Permanent loss of route. Evacuation by land no longer possible.	5	3	15	4	3	12	3	2	6	1	1	1

Aspect	Source of Risk (hazards)	Environmental Impacts	Inherent Risk 2030			Inherent Risk 2050			Inherent Risk 2070			Inherent Risk 2100		
			L	C	R	L	C	R	L	C	R	L	C	R
Social Values – Cultural Heritage, Visual Amenity, Public Health and Safety														
Public Safety	Storm Event (erosion & storm tide inundation)	Fall down erosion scarp. Difficulty walking through inundated areas. Washed off feet by waves. Washed out to sea. Crush by water-borne debris during storm. Injury on debris after the storm. Possibility of death due to injury/drowning.	3	4	12	2	4	8	2	4	8	2	4	8
	Long Term Erosion & Sea Level Rise Inundation	Permanent change in beach profile (steepness) may increase risk of falling.	5	4	20	4	4	16	4	4	16	4	4	16
Social Disruption	Storm Event (erosion & storm tide inundation)	Temporary loss of access due to inundation or erosion of roads & other accessways. Temporary loss of services (utilities) to residences & businesses due to inundation or erosion. Temporary difficulties in getting to/from work/home. Complaints to service providers & authorities.	3	4	12	3	4	12	2	4	8	2	4	8
	Long Term Erosion & Sea Level Rise Inundation	Permanent loss of access due to inundation or erosion of roads & other accessways. Permanent loss of services (utilities) to residences & businesses due to inundation or erosion. Difficulties in getting to/from work/home unless alternative access routes are established. Complaints to service providers & authorities. Displacement of residents & businesses from affected locations. Inequitable distribution of impacts; decline in social cohesion.	4	4	16	3	3	9	2	2	4	1	1	1
Public Health & Lifestyle	Storm Event (erosion & storm tide inundation)	Temporary decline in local recreational resources/areas with potential for re-establishment. Temporary disruption to regular activities/exercise due to erosion. Temporary decline in lifestyle values associated with coastal zone.	4	4	16	4	4	16	3	3	9	2	3	6
	Long Term Erosion & Sea Level Rise Inundation	Permanent loss of regional recreational resources/areas due to concentration of Crown land on the coast. Permanent disruption to regular activities/exercise. Likely permanent decline in lifestyle values associated with the coastal zone.	4	3	12	3	3	9	2	2	4	1	1	1
Visual Amenity	Storm Event (erosion & storm tide inundation)	Temporary alteration to landscape character with potential for recovery. Temporary decline in visual amenity.	4	4	16	3	4	12	2	3	6	1	3	3
	Long Term Erosion & Sea Level Rise Inundation	Permanent alternation to landscape character. Permanent decline in visual amenity due to loss of coastal open space areas.	4	4	16	3	3	9	2	2	4	1	1	1

Aspect	Source of Risk (hazards)	Environmental Impacts	Inherent Risk 2030			Inherent Risk 2050			Inherent Risk 2070			Inherent Risk 2100		
			L	C	R	L	C	R	L	C	R	L	C	R
Cultural Heritage	Storm Event (erosion & storm tide inundation)	Register of National Estate (natural) areas impacted. Potential for temporary disruption to traditional resource uses. Potential for loss or damage of previously unidentified heritage sites.	5	4	20	4	4	16	3	4	12	2	3	6
	Long Term Erosion & Sea Level Rise Inundation	Register of National Estate (natural) areas impacted. Potential for permanent disruption to traditional resource uses. Potential for loss or damage of previously unidentified heritage sites.	5	4	20	4	4	16	4	3	12	3	2	6
Social Values – Recreational Access and Amenity														
Parks (open space areas)	Storm Event (erosion & storm tide inundation)	Potential for loss or damage to open space areas. Net loss of area due to erosion.	4	4	16	3	4	12	2	3	6	2	1	2
	Long Term Erosion & Sea Level Rise Inundation	Potential for loss or damage to open space areas. Net loss of area due to erosion.	4	4	16	3	4	12	2	3	6	2	1	2
Public Access	Storm Event (erosion & storm tide inundation)	Temporary loss of access.	4	4	16	3	4	12	2	3	6	2	1	2
	Long Term Erosion & Sea Level Rise Inundation	Permanent loss of access.	5	4	20	4	4	16	3	3	9	2	2	4
Recreational Facilities	Storm Event (erosion & storm tide inundation)	Temporary loss of recreational facilities. Structural and/or water damage.	4	4	16	3	4	12	1	3	3	2	1	2
	Long Term Erosion & Sea Level Rise Inundation	Permanent loss of facilities. Structural and/or water damage.	5	4	20	4	4	16	3	4	12	2	2	4
Commercial Values														
Freehold Properties (cadastral lots)	Storm Event	Structural and/or water damage (Ancillary structures e.g. fences, sheds). Structural and/or water damage (Primary structures e.g. dwelling). Net loss of lot area due to erosion. Devaluation of properties at risk.	3	3	9	3	3	9	3	2	6	2	1	2
	Long term erosion and sea level rise inundation	Structural and/or water damage (Ancillary structures e.g. fences, sheds). Structural and/or water damage (Primary structures e.g. dwelling). Net loss of lot area due to erosion. Devaluation of properties at risk.	4	4	16	4	3	12	3	2	6	2	1	2
Businesses/Commercial Area	Storm Event	Structural and/or water damage. Net loss of lot area due to erosion. Devaluation of properties at risk.	4	4	16	4	3	12	3	3	9	2	2	4

Aspect	Source of Risk (hazards)	Environmental Impacts	Inherent Risk 2030			Inherent Risk 2050			Inherent Risk 2070			Inherent Risk 2100		
			L	C	R	L	C	R	L	C	R	L	C	R
	Long term erosion and sea level rise inundation	Structural and/or water damage. Net loss of lot area due to erosion. Devaluation of properties at risk.	4	4	16	4	3	12	3	3	9	2	2	4
Tourist Park	Storm Event	Structural and/or water damage (Ancillary structures e.g. fences, sheds). Structural and/or water damage (Primary structures e.g. dwelling, toilet block). Net loss of lot area due to erosion. Devaluation of property at risk.	3	3	9	2	3	6	2	2	4	1	1	1
	Long term erosion and sea level rise inundation	Structural and/or water damage (Ancillary structures e.g. fences, sheds). Structural and/or water damage (Primary structures e.g. dwelling, toilet block). Net loss of lot area due to erosion. Devaluation of property at risk.	4	4	16	4	3	12	3	3	9	2	2	4

Table F.2: Management Zone 2: Point Vernon - Risk Assessment

Aspect	Source of Risk (hazards)	Environmental Impacts	Inherent Risk 2030			Inherent Risk 2050			Inherent Risk 2070			Inherent Risk 2100		
			L	C	R	L	C	R	L	C	R	L	C	R
Environmental Values														
Soils	Storm Event	Loss of substrate with some limited potential for recovery (Hervey Bay). Change in shoreline profile (e.g. erosion scarp). Potential for erosion scarp to collapse after the event. Reduced load bearing strength near the erosion scarp. Re-distribution of sediments. Potential mobilisation of ASS or contaminated soils. Re-distribution of sediments. Increase salinity of surficial sediments. Mobilisation of nutrients & other contaminants from surficial sediments.	5	5	25	5	5	25	4	5	20	4	5	20
	Long term erosion and sea level rise inundation	Permanent loss of substrate. Equilibrium profile may differ from present day. Potential mobilisation of ASS or contaminated soils. Increased salinisation of soils. Change in sediment transport processes. Change in sediment composition. Rise in water table. Mobilisation of nutrients & other contaminants from surficial sediments. Landward translation of the shoreline.	5	4	20	5	4	20	4	3	12	4	3	12
Intertidal & foreshore habitat (vegetated & non-vegetated)	Storm Event (erosion & storm tide inundation)	Direct loss of substrate/vegetation with potential for recovery. Damage to intertidal habitat. Smothering &/or undermining of root system. Re-suspension of sediments and organic matter. Short-term increases in turbidity and nutrient concentrations. Short term inundation & ponding of marine water after the event.	5	4	20	5	4	20	4	3	12	4	3	12
	Long Term Erosion & Sea Level Rise Inundation	Landward translation of the intertidal zone. Potential change (increase or decrease) in the extent of the intertidal zone. Permanent loss of some habitat types, particularly vegetation. More regular and deeper tidal inundation. Shift in species composition to more tolerant species, esp. in the lower intertidal zone. Colonisation of areas that were previously supra-tidal. Potential increase in prevalence of pest species.	5	4	20	4	4	16	4	3	12	3	3	9

Aspect	Source of Risk (hazards)	Environmental Impacts	Inherent Risk 2030			Inherent Risk 2050			Inherent Risk 2070			Inherent Risk 2100		
			L	C	R	L	C	R	L	C	R	L	C	R
Coastal creeks & wetlands	Storm Event (erosion & storm tide inundation)	Temporary significant elevation of water levels. Temporary intrusion of ocean water / increased salinity. Temporary increase in mixing.	4	5	20	4	5	20	3	4	12	2	4	8
	Long Term Erosion & Sea Level Rise Inundation	Permanent increase in surface & groundwater levels. Increased tidal penetration/inundation. Increased salinisation. Change in mixing processes.	4	4	16	3	3	9	2	3	6	1	2	2
Critical Infrastructure														
Roads	Storm Event	Deterioration of road pavement and surface. Groundwater level rise. Road collapse. Temporary loss of road.	4	4	16	4	3	12	3	2	6	2	1	2
	Long term erosion and sea level rise inundation	Groundwater level rise. Deterioration of road pavement and surface. Road collapse. Permanent loss of road.	4	4	16	3	3	9	3	2	6	1	1	1
Stormwater	Storm Event	Overflow of stormwater pipes. Temporary disruption to service. Drowning of system.	4	4	16	3	3	9	3	2	6	2	1	2
	Long term erosion and sea level rise inundation	Permanent loss of pipes. Overflow of stormwater pipes. Storm water drainage and flooding damage. Degradation and failure of drainage infrastructure.	4	4	16	3	3	9	2	2	4	1	1	1
Sewer/Potable Water	Storm Event	Temporary disruption to service. Corrosion of pipes. Change in salt gradients. Overflow of sewer system.	4	4	16	4	3	12	3	3	9	2	2	4
	Long term erosion and sea level rise inundation	Degradation and failure of pipes. Long term disruption to service. Sewer spills to rivers.	4	4	16	3	3	9	3	2	6	2	1	2
Evacuation Routes	Storm Event	Temporary loss of route. Short term isolation. Short term access by Emergency Services affected.	5	3	15	4	3	12	3	2	6	1	1	1
	Long term erosion and sea level rise inundation	Permanent loss of route. Evacuation by land no longer possible.	5	3	15	4	3	12	3	2	6	1	1	1
Social Values – Cultural Heritage, Visual Amenity, Public Health and Safety														

Aspect	Source of Risk (hazards)	Environmental Impacts	Inherent Risk 2030			Inherent Risk 2050			Inherent Risk 2070			Inherent Risk 2100		
			L	C	R	L	C	R	L	C	R	L	C	R
Public Safety	Storm Event (erosion & storm tide inundation)	Fall down erosion scarp. Difficulty walking through inundated areas. Washed off feet by waves. Washed out to sea. Crush by water-borne debris during storm. Injury on debris after the storm. Possibility of death due to injury/drowning.	4	4	16	4	4	16	3	4	12	3	4	12
	Long Term Erosion & Sea Level Rise Inundation	Permanent change in beach profile (steepness) may increase risk of falling.	5	4	20	5	4	20	4	4	16	4	4	16
Social Disruption	Storm Event (erosion & storm tide inundation)	Temporary loss of access due to inundation or erosion of roads & other accessways. Temporary loss of services (utilities) to residences & businesses due to inundation or erosion. Temporary difficulties in getting to/from work/home. Complaints to service providers & authorities.	4	4	16	4	4	16	3	4	12	3	4	12
	Long Term Erosion & Sea Level Rise Inundation	Permanent loss of access due to inundation or erosion of roads & other accessways. Permanent loss of services (utilities) to residences & businesses due to inundation or erosion. Difficulties in getting to/from work/home unless alternative access routes are established. Complaints to service providers & authorities. Displacement of residents & businesses from affected locations. Inequitable distribution of impacts; decline in social cohesion.	5	4	20	4	3	12	3	2	6	2	2	4
Public Health & Lifestyle	Storm Event (erosion & storm tide inundation)	Temporary decline in local recreational resources/areas with potential for re-establishment. Temporary disruption to regular activities/exercise due to erosion. Temporary decline in lifestyle values associated with coastal zone.	5	4	20	4	4	16	4	4	16	4	3	12
	Long Term Erosion & Sea Level Rise Inundation	Permanent loss of regional recreational resources/areas due to concentration of Crown land on the coast. Permanent disruption to regular activities/exercise. Likely permanent decline in lifestyle values associated with the coastal zone.	5	4	20	4	4	16	4	4	16	3	3	9
Visual Amenity	Storm Event (erosion & storm tide inundation)	Temporary alteration to landscape character with potential for recovery. Temporary decline in visual amenity.	5	4	20	4	4	16	4	4	16	3	3	9
	Long Term Erosion & Sea Level Rise Inundation	Permanent alternation to landscape character. Permanent decline in visual amenity due to loss of coastal open space areas.	5	4	20	4	4	16	4	4	16	3	3	9

Aspect	Source of Risk (hazards)	Environmental Impacts	Inherent Risk 2030			Inherent Risk 2050			Inherent Risk 2070			Inherent Risk 2100		
			L	C	R	L	C	R	L	C	R	L	C	R
Cultural Heritage	Storm Event (erosion & storm tide inundation)	Register of National Estate (natural) areas impacted. Potential for temporary disruption to traditional resource uses. Potential for loss or damage of previously unidentified heritage sites.	5	4	20	4	4	16	3	4	12	2	3	6
	Long Term Erosion & Sea Level Rise Inundation	Register of National Estate (natural) areas impacted. Potential for permanent disruption to traditional resource uses. Potential for loss or damage of previously unidentified heritage sites.	5	4	20	4	4	16	4	3	12	3	3	9
Social Values – Recreational Access and Amenity														
Parks (open space areas)	Storm Event (erosion & storm tide inundation)	Potential for loss or damage to open space areas. Net loss of area due to erosion.	4	4	16	3	4	12	2	3	6	2	1	2
	Long Term Erosion & Sea Level Rise Inundation	Potential for loss or damage to open space areas. Net loss of area due to erosion.	4	4	16	3	4	12	2	3	6	2	1	2
Public Access	Storm Event (erosion & storm tide inundation)	Temporary loss of access.	4	4	16	3	4	12	2	3	6	2	1	2
	Long Term Erosion & Sea Level Rise Inundation	Permanent loss of access.	5	4	20	4	4	16	3	3	9	2	2	4
Recreational Facilities	Storm Event (erosion & storm tide inundation)	Temporary loss of recreational facilities. Structural and/or water damage.	4	4	16	3	4	12	1	3	3	2	1	2
	Long Term Erosion & Sea Level Rise Inundation	Permanent loss of facilities. Structural and/or water damage.	5	4	20	4	4	16	3	4	12	2	2	4
Commercial Values														
Freehold Properties (cadastral lots)	Storm Event	Structural and/or water damage (Ancillary structures e.g. fences, sheds). Structural and/or water damage (Primary structures e.g. dwelling). Net loss of lot area due to erosion. Devaluation of properties at risk.	5	4	20	4	3	12	3	2	6	2	1	2
	Long term erosion and sea level rise inundation	Structural and/or water damage (Ancillary structures e.g. fences, sheds). Structural and/or water damage (Primary structures e.g. dwelling). Net loss of lot area due to erosion. Devaluation of properties at risk.	4	4	16	4	3	12	3	2	6	2	1	2
Businesses/Commercial Area	Storm Event	Structural and/or water damage. Net loss of lot area due to erosion. Devaluation of properties at risk.	4	4	16	4	3	12	3	3	9	2	2	4

Aspect	Source of Risk (hazards)	Environmental Impacts	Inherent Risk 2030			Inherent Risk 2050			Inherent Risk 2070			Inherent Risk 2100		
			L	C	R	L	C	R	L	C	R	L	C	R
	Long term erosion and sea level rise inundation	Structural and/or water damage. Net loss of lot area due to erosion. Devaluation of properties at risk.	4	4	16	4	3	12	3	3	9	2	2	4

Table F.3: Management Zone 3: Pialba to Urangan - Risk Assessment

Aspect	Source of Risk (hazards)	Environmental Impacts	Inherent Risk 2030			Inherent Risk 2050			Inherent Risk 2070			Inherent Risk 2100		
			L	C	R	L	C	R	L	C	R	L	C	R
Environmental Values														
Soils	Storm Event	Loss of substrate with some limited potential for recovery (Hervey Bay). Change in shoreline profile (e.g. erosion scarp). Potential for erosion scarp to collapse after the event. Reduced load bearing strength near the erosion scarp. Re-distribution of sediments. Potential mobilisation of ASS or contaminated soils. Re-distribution of sediments. Increase salinity of surficial sediments. Mobilisation of nutrients & other contaminants from surficial sediments.	4	4	16	4	3	12	3	3	9	2	3	6
	Long term erosion and sea level rise inundation	Permanent loss of substrate. Equilibrium profile may differ from present day. Potential mobilisation of ASS or contaminated soils. Increased salinisation of soils. Change in sediment transport processes. Change in sediment composition. Rise in water table. Mobilisation of nutrients & other contaminants from surficial sediments. Landward translation of the shoreline.	4	4	16	3	3	9	2	3	6	1	2	2
Intertidal & foreshore habitat (vegetated & non-vegetated)	Storm Event (erosion & storm tide inundation)	Direct loss of substrate/vegetation with potential for recovery. Damage to intertidal habitat. Smothering &/or undermining of root system. Re-suspension of sediments and organic matter. Short-term increases in turbidity and nutrient concentrations. Short term inundation & ponding of marine water after the event.	5	5	25	4	4	16	3	3	9	2	2	4
	Long Term Erosion & Sea Level Rise Inundation	Landward translation of the intertidal zone. Potential change (increase or decrease) in the extent of the intertidal zone. Permanent loss of some habitat types, particularly vegetation. More regular and deeper tidal inundation. Shift in species composition to more tolerant species, esp. in the lower intertidal zone. Colonisation of areas that were previously supra-tidal. Potential increase in prevalence of pest species.	4	4	16	3	4	12	2	3	6	1	2	2

Aspect	Source of Risk (hazards)	Environmental Impacts	Inherent Risk 2030			Inherent Risk 2050			Inherent Risk 2070			Inherent Risk 2100		
			L	C	R	L	C	R	L	C	R	L	C	R
Coastal creeks & wetlands	Storm Event (erosion & storm tide inundation)	Temporary significant elevation of water levels. Temporary intrusion of ocean water / increased salinity. Temporary increase in mixing.	4	5	20	4	5	20	3	4	12	2	4	8
	Long Term Erosion & Sea Level Rise Inundation	Permanent increase in surface & groundwater levels. Increased tidal penetration/inundation. Increased salinisation. Change in mixing processes.	4	4	16	3	3	9	2	3	6	1	2	2
Critical Infrastructure														
Roads	Storm Event	Deterioration of road pavement and surface. Groundwater level rise. Road collapse. Temporary loss of road.	4	4	16	4	3	12	3	2	6	2	1	2
	Long term erosion and sea level rise inundation	Groundwater level rise. Deterioration of road pavement and surface. Road collapse. Permanent loss of road.	4	4	16	3	3	9	3	2	6	1	1	1
Stormwater	Storm Event	Overflow of stormwater pipes. Temporary disruption to service. Drowning of system.	3	4	12	3	3	9	3	2	6	2	1	2
	Long term erosion and sea level rise inundation	Permanent loss of pipes. Overflow of stormwater pipes. Storm water drainage and flooding damage. Degradation and failure of drainage infrastructure.	4	4	16	3	3	9	2	2	4	1	1	1
Sewer/Potable Water	Storm Event	Temporary disruption to service. Corrosion of pipes. Change in salt gradients. Overflow of sewer system.	4	4	16	4	3	12	3	3	9	2	2	4
	Long term erosion and sea level rise inundation	Degradation and failure of pipes. Long term disruption to service. Sewer spills to rivers.	4	4	16	3	3	9	3	2	6	2	1	2
Gas	Storm Event	Temporary disruption to service. Corrosion of gas lines.	5	4	20	4	4	16	3	3	9	2	2	4
	Long term erosion and sea level rise inundation	Long term disruption to service. Gas main rupture causing explosion	5	4	20	4	4	16	3	3	9	2	1	2
Evacuation Routes	Storm Event	Temporary loss of route. Short term isolation. Short term access by Emergency Services affected.	4	4	16	4	3	12	3	2	6	1	1	1
	Long term erosion and sea level rise inundation	Permanent loss of route. Evacuation by land no longer possible.	4	4	16	4	3	12	3	2	6	1	1	1

Aspect	Source of Risk (hazards)	Environmental Impacts	Inherent Risk 2030			Inherent Risk 2050			Inherent Risk 2070			Inherent Risk 2100		
			L	C	R	L	C	R	L	C	R	L	C	R
Social Values – Cultural Heritage, Visual Amenity, Public Health and Safety														
Public Safety	Storm Event (erosion & storm tide inundation)	Fall down erosion scarp. Difficulty walking through inundated areas. Washed off feet by waves. Washed out to sea. Crush by water-borne debris during storm. Injury on debris after the storm. Possibility of death due to injury/drowning.	2	3	6	2	3	6	1	2	2	1	1	1
	Long Term Erosion & Sea Level Rise Inundation	Permanent change in beach profile (steepness) may increase risk of falling.	4	4	16	2	4	8	3	3	9	2	3	6
Social Disruption	Storm Event (erosion & storm tide inundation)	Temporary loss of access due to inundation or erosion of roads & other accessways. Temporary loss of services (utilities) to residences & businesses due to inundation or erosion. Temporary difficulties in getting to/from work/home. Complaints to service providers & authorities.	3	3	9	2	3	6	2	2	4	1	2	2
	Long Term Erosion & Sea Level Rise Inundation	Permanent loss of access due to inundation or erosion of roads & other accessways. Permanent loss of services (utilities) to residences & businesses due to inundation or erosion. Difficulties in getting to/from work/home unless alternative access routes are established. Complaints to service providers & authorities. Displacement of residents & businesses from affected locations. Inequitable distribution of impacts; decline in social cohesion.	3	2	6	2	1	2	2	1	2	1	1	1
Public Health & Lifestyle	Storm Event (erosion & storm tide inundation)	Temporary decline in local recreational resources/areas with potential for re-establishment. Temporary disruption to regular activities/exercise due to erosion. Temporary decline in lifestyle values associated with coastal zone.	4	3	12	3	3	9	3	2	6	2	2	4
	Long Term Erosion & Sea Level Rise Inundation	Permanent loss of regional recreational resources/areas due to concentration of Crown land on the coast. Permanent disruption to regular activities/exercise. Likely permanent decline in lifestyle values associated with the coastal zone.	4	3	12	3	2	6	2	1	2	1	1	1
Visual Amenity	Storm Event (erosion & storm tide inundation)	Temporary alteration to landscape character with potential for recovery. Temporary decline in visual amenity.	4	4	16	3	4	12	2	3	6	1	3	3
	Long Term Erosion & Sea Level Rise Inundation	Permanent alternation to landscape character. Permanent decline in visual amenity due to loss of coastal open space areas.	4	3	12	3	3	9	2	2	4	1	1	1

Aspect	Source of Risk (hazards)	Environmental Impacts	Inherent Risk 2030			Inherent Risk 2050			Inherent Risk 2070			Inherent Risk 2100		
			L	C	R	L	C	R	L	C	R	L	C	R
Cultural Heritage	Storm Event (erosion & storm tide inundation)	Register of National Estate (natural) & cultural heritage sites impacted. Potential for temporary disruption to traditional resource uses. Potential for loss or damage of previously unidentified heritage sites.	4	3	12	3	3	9	2	3	6	1	2	2
	Long Term Erosion & Sea Level Rise Inundation	Register of National Estate (natural) & cultural heritage sites impacted. Potential for permanent disruption to traditional resource uses. Potential for loss or damage of previously unidentified heritage sites.	4	3	12	3	3	9	2	2	4	1	1	1
Social Values – Recreational Access and Amenity														
Parks (open space areas)	Storm Event (erosion & storm tide inundation)	Potential for loss or damage to open space areas. Net loss of area due to erosion.	4	4	16	3	4	12	2	3	6	2	1	2
	Long Term Erosion & Sea Level Rise Inundation	Potential for loss or damage to open space areas. Net loss of area due to erosion.	4	4	16	3	4	12	2	3	6	2	1	2
Public Access	Storm Event (erosion & storm tide inundation)	Temporary loss of access.	4	4	16	3	4	12	2	3	6	2	1	2
	Long Term Erosion & Sea Level Rise Inundation	Permanent loss of access.	5	4	20	4	4	16	3	3	9	2	2	4
Recreational Facilities	Storm Event (erosion & storm tide inundation)	Temporary loss of recreational facilities. Structural and/or water damage.	4	4	16	3	4	12	1	3	3	2	1	2
	Long Term Erosion & Sea Level Rise Inundation	Permanent loss of facilities. Structural and/or water damage.	5	4	20	4	4	16	3	4	12	2	2	4
Commercial Values														
Freehold Properties (cadastral lots)	Storm Event	Structural and/or water damage (Ancillary structures e.g. fences, sheds). Structural and/or water damage (Primary structures e.g. dwelling). Net loss of lot area due to erosion. Devaluation of properties at risk.	5	4	20	4	3	12	3	2	6	2	1	2
	Long term erosion and sea level rise inundation	Structural and/or water damage (Ancillary structures e.g. fences, sheds). Structural and/or water damage (Primary structures e.g. dwelling). Net loss of lot area due to erosion. Devaluation of properties at risk.	4	4	16	4	3	12	3	2	6	2	1	2
Businesses/Commercial Area	Storm Event	Structural and/or water damage. Net loss of lot area due to erosion. Devaluation of properties at risk.	4	4	16	4	3	12	3	3	9	2	2	4

Aspect	Source of Risk (hazards)	Environmental Impacts	Inherent Risk 2030			Inherent Risk 2050			Inherent Risk 2070			Inherent Risk 2100		
			L	C	R	L	C	R	L	C	R	L	C	R
	Long term erosion and sea level rise inundation	Structural and/or water damage. Net loss of lot area due to erosion. Devaluation of properties at risk.	4	4	16	4	3	12	3	3	9	2	2	4
Tourist Park	Storm Event	Structural and/or water damage (Ancillary structures e.g. fences, sheds). Structural and/or water damage (Primary structures e.g. dwelling, toilet block). Net loss of lot area due to erosion. Devaluation of property at risk.	3	3	9	2	2	4	2	1	2	1	1	1
	Long term erosion and sea level rise inundation	Structural and/or water damage (Ancillary structures e.g. fences, sheds). Structural and/or water damage (Primary structures e.g. dwelling, toilet block). Net loss of lot area due to erosion. Devaluation of property at risk.	3	3	9	2	2	4	2	1	2	1	1	1

Table F.4: Management Zone 4: Urangan Boat Harbour to River Heads - Risk Assessment

Aspect	Source of Risk (hazards)	Environmental Impacts	Inherent Risk 2030			Inherent Risk 2050			Inherent Risk 2070			Inherent Risk 2100		
			L	C	R	L	C	R	L	C	R	L	C	R
Environmental Values														
Soils	Storm Event	Loss of substrate with low potential for recovery. Change in shoreline profile (e.g. erosion scarp). Potential for erosion scarp to collapse after the event. Reduced load bearing strength near the erosion scarp. Re-distribution of sediments. Potential mobilisation of ASS or contaminated soils. Re-distribution of sediments. Increase salinity of surficial sediments. Mobilisation of nutrients & other contaminants from surficial sediments.	5	4	20	4	4	16	3	4	12	2	4	8
	Long term erosion and sea level rise inundation	Permanent loss of substrate. Equilibrium profile may differ from present day. Potential mobilisation of ASS or contaminated soils. Increased salinisation of soils. Change in sediment transport processes. Change in sediment composition. Rise in water table. Mobilisation of nutrients & other contaminants from surficial sediments. Landward translation of the shoreline.	4	4	16	4	3	12	3	3	9	2	2	4
Intertidal & foreshore habitat (vegetated & non-vegetated)	Storm Event (erosion & storm tide inundation)	Direct loss of substrate/vegetation with potential for recovery. Damage to intertidal habitat. Smothering &/or undermining of root system. Re-suspension of sediments and organic matter. Short-term increases in turbidity and nutrient concentrations. Short term inundation & ponding of marine water after the event.	5	5	25	4	4	16	3	3	9	2	2	4
	Long Term Erosion & Sea Level Rise Inundation	Landward translation of the intertidal zone. Potential change (increase or decrease) in the extent of the intertidal zone. Permanent loss of some habitat types, particularly vegetation. More regular and deeper tidal inundation. Shift in species composition to more tolerant species, esp. in the lower intertidal zone. Colonisation of areas that were previously supra-tidal. Potential increase in prevalence of pest species.	4	4	16	3	3	9	2	2	4	2	1	2

Aspect	Source of Risk (hazards)	Environmental Impacts	Inherent Risk 2030			Inherent Risk 2050			Inherent Risk 2070			Inherent Risk 2100		
			L	C	R	L	C	R	L	C	R	L	C	R
Coastal creeks & wetlands	Storm Event (erosion & storm tide inundation)	Temporary significant elevation of water levels. Temporary intrusion of ocean water / increased salinity. Temporary increase in mixing.	4	5	20	4	5	20	3	4	12	2	4	8
	Long Term Erosion & Sea Level Rise Inundation	Permanent increase in surface & groundwater levels. Increased tidal penetration/inundation. Increased salinisation. Change in mixing processes.	4	4	16	4	4	16	3	3	9	2	2	4
Critical Infrastructure														
Roads	Storm Event	Deterioration of road pavement and surface. Groundwater level rise. Road collapse. Temporary loss of road.	4	4	16	4	3	12	3	2	6	2	1	2
	Long term erosion and sea level rise inundation	Groundwater level rise. Deterioration of road pavement and surface. Road collapse. Permanent loss of road.	4	4	16	3	3	9	3	2	6	1	1	1
Stormwater	Storm Event	Overflow of stormwater pipes. Temporary disruption to service. Drowning of system.	3	4	12	3	3	9	3	2	6	2	1	2
	Long term erosion and sea level rise inundation	Permanent loss of pipes. Overflow of stormwater pipes. Storm water drainage and flooding damage. Degradation and failure of drainage infrastructure.	4	4	16	3	3	9	2	2	4	1	1	1
Sewer/Potable Water	Storm Event	Temporary disruption to service. Corrosion of pipes. Change in salt gradients. Overflow of sewer system.	4	4	16	4	3	12	3	3	9	2	2	4
	Long term erosion and sea level rise inundation	Degradation and failure of pipes. Long term disruption to service. Sewer spills to rivers.	4	4	16	3	3	9	3	2	6	2	1	2
Gas	Storm Event	Temporary disruption to service. Corrosion of gas lines.	5	4	20	4	4	16	3	3	9	2	2	4
	Long term erosion and sea level rise inundation	Long term disruption to service. Gas main rupture causing explosion	5	4	20	4	4	16	3	3	9	2	1	2
Evacuation Routes	Storm Event	Temporary loss of route. Short term isolation. Short term access by Emergency Services affected.	5	3	15	4	3	12	3	2	6	1	1	1

Aspect	Source of Risk (hazards)	Environmental Impacts	Inherent Risk 2030			Inherent Risk 2050			Inherent Risk 2070			Inherent Risk 2100		
			L	C	R	L	C	R	L	C	R	L	C	R
	Long term erosion and sea level rise inundation	Permanent loss of route. Evacuation by land no longer possible.	5	3	15	4	3	12	3	2	6	1	1	1
Social Values – Cultural Heritage, Visual Amenity, Public Health and Safety														
Public Safety	Storm Event (erosion & storm tide inundation)	Fall down erosion scarp. Difficulty walking through inundated areas. Washed off feet by waves. Washed out to sea. Crush by water-borne debris during storm. Injury on debris after the storm. Possibility of death due to injury/drowning.	3	4	12	3	4	12	3	4	12	4	4	16
	Long Term Erosion & Sea Level Rise Inundation	Permanent change in beach profile (steepness) may increase risk of falling.	5	4	20	5	4	20	4	4	16	4	4	16
Social Disruption	Storm Event (erosion & storm tide inundation)	Temporary loss of access due to inundation or erosion of roads & other accessways. Temporary loss of services (utilities) to residences & businesses due to inundation or erosion. Temporary difficulties in getting to/from work/home. Complaints to service providers & authorities.	4	4	16	3	4	12	3	4	12	3	4	12
	Long Term Erosion & Sea Level Rise Inundation	Permanent loss of access due to inundation or erosion of roads & other accessways. Permanent loss of services (utilities) to residences & businesses due to inundation or erosion. Difficulties in getting to/from work/home unless alternative access routes are established. Complaints to service providers & authorities. Displacement of residents & businesses from affected locations. Inequitable distribution of impacts; decline in social cohesion.	4	4	16	4	4	16	3	3	9	2	2	4
Public Health & Lifestyle	Storm Event (erosion & storm tide inundation)	Temporary decline in local recreational resources/areas with potential for re-establishment. Temporary disruption to regular activities/exercise due to erosion. Temporary decline in lifestyle values associated with coastal zone.	4	4	16	4	4	16	4	3	12	2	3	6
	Long Term Erosion & Sea Level Rise Inundation	Permanent loss of regional recreational resources/areas due to concentration of Crown land on the coast. Permanent disruption to regular activities/exercise. Likely permanent decline in lifestyle values associated with the coastal zone.	4	4	16	4	3	12	3	2	6	2	2	4
Visual Amenity	Storm Event (erosion & storm tide inundation)	Temporary alteration to landscape character with potential for recovery.	5	4	20	4	4	16	3	4	12	2	3	6

Aspect	Source of Risk (hazards)	Environmental Impacts	Inherent Risk 2030			Inherent Risk 2050			Inherent Risk 2070			Inherent Risk 2100		
			L	C	R	L	C	R	L	C	R	L	C	R
		Temporary decline in visual amenity.												
	Long Term Erosion & Sea Level Rise Inundation	Permanent alternation to landscape character. Permanent decline in visual amenity due to loss of coastal open space areas.	4	4	16	3	4	12	3	3	9	2	2	4
Cultural Heritage	Storm Event (erosion & storm tide inundation)	Register of National Estate (natural) & cultural heritage sites impacted. Potential for temporary disruption to traditional resource uses. Potential for loss or damage of previously unidentified heritage sites.	4	3	12	3	3	9	2	2	4	1	2	2
	Long Term Erosion & Sea Level Rise Inundation	Register of National Estate (natural) & cultural heritage sites impacted. Potential for temporary disruption to traditional resource uses. Potential for loss or damage of previously unidentified heritage sites.	4	3	12	3	3	9	2	2	4	1	1	1
Social Values – Recreational Access and Amenity														
Parks (open space areas)	Storm Event (erosion & storm tide inundation)	Potential for loss or damage to open space areas. Net loss of area due to erosion.	4	4	16	4	4	16	2	3	6	2	1	2
	Long Term Erosion & Sea Level Rise Inundation	Potential for loss or damage to open space areas. Net loss of area due to erosion.	5	4	20	4	4	16	3	3	9	2	1	2
Public Access	Storm Event (erosion & storm tide inundation)	Temporary loss of access.	4	4	16	3	4	12	2	3	6	2	1	2
	Long Term Erosion & Sea Level Rise Inundation	Permanent loss of access.	5	4	20	4	4	16	3	3	9	2	1	2
Recreational Facilities	Storm Event (erosion & storm tide inundation)	Temporary loss of recreational facilities. Structural and/or water damage.	4	4	16	3	4	12	1	3	3	2	1	2
	Long Term Erosion & Sea Level Rise Inundation	Permanent loss of facilities. Structural and/or water damage.	5	4	20	4	4	16	3	4	12	2	1	2
Commercial Values														
Freehold Properties (cadastral lots)	Storm Event	Structural and/or water damage (Ancillary structures e.g. fences, sheds). Structural and/or water damage (Primary structures e.g. dwelling). Net loss of lot area due to erosion. Devaluation of properties at risk.	4	4	16	4	3	12	2	2	4	2	1	2

Aspect	Source of Risk (hazards)	Environmental Impacts	Inherent Risk 2030			Inherent Risk 2050			Inherent Risk 2070			Inherent Risk 2100		
			L	C	R	L	C	R	L	C	R	L	C	R
	Long term erosion and sea level rise inundation	Structural and/or water damage (Ancillary structures e.g. fences, sheds). Structural and/or water damage (Primary structures e.g. dwelling). Net loss of lot area due to erosion. Devaluation of properties at risk.	4	4	16	4	3	12	2	2	4	2	1	2
Businesses/Commercial Area	Storm Event	Structural and/or water damage. Net loss of lot area due to erosion. Devaluation of properties at risk.	4	4	16	4	3	12	3	3	9	2	3	6
	Long term erosion and sea level rise inundation	Structural and/or water damage. Net loss of lot area due to erosion. Devaluation of properties at risk.	4	4	16	4	3	12	3	3	9	2	3	6
Urangan Boat Harbour	Storm Event	Structural and/or water damage. Devaluation of properties at risk. Damage to boat ramps and jetties. Damage to boats.	4	3	12	4	3	12	3	2	6	2	1	2
	Long term erosion and sea level rise inundation	Structural and/or water damage. Devaluation of properties at risk. Damage to boat ramps and jetties.	4	4	16	4	3	12	3	3	9	2	1	2
Tourist Park	Storm Event	Structural and/or water damage (Ancillary structures e.g. fences, sheds). Structural and/or water damage (Primary structures e.g. dwelling, toilet block). Net loss of lot area due to erosion. Devaluation of property at risk.	4	3	12	3	3	9	3	2	6	2	1	2
	Long term erosion and sea level rise inundation	Structural and/or water damage (Ancillary structures e.g. fences, sheds). Structural and/or water damage (Primary structures e.g. dwelling, toilet block). Net loss of lot area due to erosion. Devaluation of property at risk.	4	4	16	4	3	12	3	3	9	2	1	2

Table F.5: Management Zone 5: Urangan Boat Harbour to River Heads - Risk Assessment

Aspect	Source of Risk (hazards)	Environmental Impacts	Inherent Risk 2030			Inherent Risk 2050			Inherent Risk 2070			Inherent Risk 2100		
			L	C	R	L	C	R	L	C	R	L	C	R
Environmental Values														
Soils	Storm Event	Loss of substrate with no/low potential for recovery. Change in shoreline profile (e.g. erosion scarp). Potential for erosion scarp to collapse after the event. Reduced load bearing strength near the erosion scarp. Re-distribution of sediments. Potential mobilisation of ASS or contaminated soils. Re-distribution of sediments. Increase salinity of surficial sediments. Mobilisation of nutrients & other contaminants from surficial sediments.	4	4	16	3	3	9	2	3	6	2	2	4
	Long term erosion and sea level rise inundation	Permanent loss of substrate. Equilibrium profile may differ from present day. Potential mobilisation of ASS or contaminated soils. Increased salinisation of soils. Change in sediment transport processes. Change in sediment composition. Rise in water table. Mobilisation of nutrients & other contaminants from surficial sediments. Landward translation of the shoreline.	4	3	12	3	3	9	2	2	4	1	1	1
Intertidal & foreshore habitat (vegetated & non-vegetated)	Storm Event (erosion & storm tide inundation)	Direct loss of substrate/vegetation with potential for recovery. Damage to intertidal habitat. Smothering &/or undermining of root system. Re-suspension of sediments and organic matter. Short-term increases in turbidity and nutrient concentrations. Short term inundation & ponding of marine water after the event.	5	4	20	4	3	12	4	3	12	3	2	6
	Long Term Erosion & Sea Level Rise Inundation	Landward translation of the intertidal zone. Potential change (increase or decrease) in the extent of the intertidal zone. Permanent loss of some habitat types, particularly vegetation. More regular and deeper tidal inundation. Shift in species composition to more tolerant species, esp. in the lower intertidal zone. Colonisation of areas that were previously supra-tidal. Potential increase in prevalence of pest species.	4	3	12	3	2	6	2	2	4	1	1	1

Aspect	Source of Risk (hazards)	Environmental Impacts	Inherent Risk 2030			Inherent Risk 2050			Inherent Risk 2070			Inherent Risk 2100		
			L	C	R	L	C	R	L	C	R	L	C	R
Coastal creeks & wetlands	Storm Event (erosion & storm tide inundation)	Temporary significant elevation of water levels. Temporary intrusion of ocean water / increased salinity. Temporary increase in mixing.	4	4	16	4	4	16	4	3	12	3	3	9
	Long Term Erosion & Sea Level Rise Inundation	Permanent increase in surface & groundwater levels. Increased tidal penetration/inundation. Increased salinisation. Change in mixing processes.	3	3	9	3	3	9	2	2	4	1	1	1
Critical Infrastructure														
Roads	Storm Event	Deterioration of road pavement and surface. Groundwater level rise. Road collapse. Temporary loss of road.	5	4	20	4	3	12	3	2	6	2	1	2
	Long term erosion and sea level rise inundation	Groundwater level rise. Deterioration of road pavement and surface. Road collapse. Permanent loss of road.	5	4	20	3	3	9	3	2	6	1	1	1
Evacuation Routes	Storm Event	Temporary loss of route. Short term isolation. Short term access by Emergency Services affected.	5	3	15	3	3	9	2	2	4	1	1	1
	Long term erosion and sea level rise inundation	Permanent loss of route. Evacuation by land no longer possible.	5	3	15	3	3	9	2	2	4	1	1	1
Social Values – Cultural Heritage, Visual Amenity, Public Health and Safety														
Public Safety	Storm Event (erosion & storm tide inundation)	Fall down erosion scarp. Difficulty walking through inundated areas. Washed off feet by waves. Washed out to sea. Crush by water-borne debris during storm. Injury on debris after the storm. Possibility of death due to injury/drowning.	4	4	16	4	4	16	3	4	12	3	4	12
	Long Term Erosion & Sea Level Rise Inundation	Permanent change in beach profile (steepness) may increase risk of falling.	5	4	20	5	4	20	4	4	16	4	4	16
Social Disruption	Storm Event (erosion & storm tide inundation)	Temporary loss of access due to inundation or erosion of roads & other accessways. Temporary loss of services (utilities) to residences & businesses due to inundation or erosion. Temporary difficulties in getting to/from work/home. Complaints to service providers & authorities.	3	4	12	3	4	12	2	3	6	1	3	3

Aspect	Source of Risk (hazards)	Environmental Impacts	Inherent Risk 2030			Inherent Risk 2050			Inherent Risk 2070			Inherent Risk 2100		
			L	C	R	L	C	R	L	C	R	L	C	R
	Long Term Erosion & Sea Level Rise Inundation	Permanent loss of access due to inundation or erosion of roads & other accessways. Permanent loss of services (utilities) to residences & businesses due to inundation or erosion. Difficulties in getting to/from work/home unless alternative access routes are established. Complaints to service providers & authorities. Displacement of residents & businesses from affected locations. Inequitable distribution of impacts; decline in social cohesion.	4	4	16	3	3	9	2	2	4	1	1	1
Public Health & Lifestyle	Storm Event (erosion & storm tide inundation)	Temporary decline in local recreational resources/areas. Temporary disruption to regular activities/exercise due to erosion. Temporary decline in lifestyle values associated with coastal zone.	4	4	16	4	4	16	3	3	9	2	3	6
	Long Term Erosion & Sea Level Rise Inundation	Permanent loss of regional recreational resources/areas due to concentration of Crown land on the coast. Permanent disruption to regular activities/exercise. Likely permanent decline in lifestyle values associated with the coastal zone.	4	4	16	3	3	9	2	2	4	1	1	1
Visual Amenity	Storm Event (erosion & storm tide inundation)	Temporary alteration to landscape character with limited potential for recovery. Temporary decline in visual amenity.	4	4	16	4	4	16	2	3	6	1	3	3
	Long Term Erosion & Sea Level Rise Inundation	Permanent alternation to landscape character. Permanent decline in visual amenity due to loss of coastal open space areas.	4	4	16	3	3	9	2	3	6	1	2	2
Cultural Heritage	Storm Event (erosion & storm tide inundation)	Register of National Estate (natural) & cultural heritage sites impacted. Potential for temporary disruption to traditional resource uses. Potential for loss or damage of previously unidentified heritage sites.	3	3	9	3	3	9	2	2	4	1	2	2
	Long Term Erosion & Sea Level Rise Inundation	Register of National Estate (natural) & cultural heritage sites impacted. Potential for temporary disruption to traditional resource uses. Potential for loss or damage of previously unidentified heritage sites.	3	3	9	2	3	6	1	2	2	1	1	1
Social Values – Recreational Access and Amenity														
Parks (open space areas)	Storm Event (erosion & storm tide inundation)	Potential for loss or damage to open space areas. Net loss of area due to erosion.	4	4	16	3	4	12	2	3	6	2	1	2
	Long Term Erosion & Sea Level Rise Inundation	Potential for loss or damage to open space areas. Net loss of area due to erosion.	5	4	20	4	4	16	3	3	9	2	1	2
Public Access	Storm Event (erosion & storm tide inundation)	Temporary loss of access.	4	4	16	3	4	12	2	3	6	2	1	2

Aspect	Source of Risk (hazards)	Environmental Impacts	Inherent Risk 2030			Inherent Risk 2050			Inherent Risk 2070			Inherent Risk 2100		
			L	C	R	L	C	R	L	C	R	L	C	R
	Long Term Erosion & Sea Level Rise Inundation	Permanent loss of access.	5	4	20	4	4	16	3	3	9	2	1	2
Recreational Facilities	Storm Event (erosion & storm tide inundation)	Temporary loss of recreational facilities. Structural and/or water damage.	4	4	16	3	4	12	2	3	6	2	2	4
	Long Term Erosion & Sea Level Rise Inundation	Permanent loss of facilities. Structural and/or water damage.	5	4	20	4	4	16	3	4	12	2	1	2
Commercial Values														
Freehold Properties (cadastral lots)	Storm Event	Structural and/or water damage (Ancillary structures e.g. fences, sheds). Structural and/or water damage (Primary structures e.g. dwelling). Net loss of lot area due to erosion. Devaluation of properties at risk.	4	3	12	4	3	12	2	2	4	2	1	2
	Long term erosion and sea level rise inundation	Structural and/or water damage (Ancillary structures e.g. fences, sheds). Structural and/or water damage (Primary structures e.g. dwelling). Net loss of lot area due to erosion. Devaluation of properties at risk.	4	4	16	4	3	12	2	2	4	2	1	2
Businesses/Commercial Area	Storm Event	Structural and/or water damage. Net loss of lot area due to erosion. Devaluation of properties at risk.	5	4	20	4	3	12	3	3	9	3	2	6
	Long term erosion and sea level rise inundation	Structural and/or water damage. Net loss of lot area due to erosion. Devaluation of properties at risk.	5	4	20	4	4	16	3	3	9	3	2	6
Tourist Park	Storm Event	Structural and/or water damage (Ancillary structures e.g. fences, sheds). Structural and/or water damage (Primary structures e.g. dwelling, toilet block). Net loss of lot area due to erosion. Devaluation of property at risk.	3	3	9	3	3	9	3	2	6	2	2	4
	Long term erosion and sea level rise inundation	Structural and/or water damage (Ancillary structures e.g. fences, sheds). Structural and/or water damage (Primary structures e.g. dwelling, toilet block). Net loss of lot area due to erosion. Devaluation of property at risk.	3	4	12	3	3	9	2	3	6	1	2	2