

Ocean Beach Risk Assessment - 2011

Entry No.	Keyword	Risk / Opportunity Description
1.1.1	Tsunami Overtopping/Breach	Tsunami causing overtopping or breaching of sea defences <u>and</u> causing harm to people
1.1.2	Tsunami Overtopping/Breach	Tsunami causing overtopping or breaching of sea defences affecting private, commercial and retail property, utilities, roads <u>and</u> resulting in physical damage or loss of value
1.1.3	Tsunami Overtopping/Breach	Tsunami causing overtopping or breaching of sea defences affecting cultural assets/icons and recreational opportunities <u>and</u> resulting in physical damage or loss of value
1.1.4	Tsunami Overtopping/Breach	Tsunami causing overtopping or breaching of sea defences affecting lands and ecosystems <u>and</u> resulting in physical damage or loss of value
1.1.5	Tsunami Overtopping/Breach	Tsunami causing overtopping or breaching of sea defences <u>and</u> dispersing former landfill contaminants causing harm to people
1.1.6	Tsunami Overtopping/Breach	Tsunami causing overtopping or breaching of sea defences <u>and</u> dispersing former landfill contaminants causing harm to ecosystems

Section 1: Sea wall section			
Likelihood	Consequence	Risk / Opportunity Score	Risk / Opportunity Rating
1 Rare	5 Catastrophic	5	Medium
1 Rare	5 Catastrophic	5	Medium
1 Rare	5 Catastrophic	5	Medium
1 Rare	5 Catastrophic	5	Medium

Section 2: End of sea wall to Cultural Centre			
Likelihood	Consequence	Risk / Opportunity Score	Risk / Opportunity Rating
1 Rare	5 Catastrophic	5	Medium
1 Rare	5 Catastrophic	5	Medium
1 Rare	5 Catastrophic	5	Medium
1 Rare	5 Catastrophic	5	Medium

Section 3: Cultural Centre to St. Kilda surf club			
Likelihood	Consequence	Risk / Opportunity Score	Risk / Opportunity Rating
1 Rare	5 Catastrophic	5	Medium
1 Rare	5 Catastrophic	5	Medium
1 Rare	5 Catastrophic	5	Medium
1 Rare	5 Catastrophic	5	Medium
1 Rare	5 Catastrophic	5	Medium
1 Rare	5 Catastrophic	5	Medium
1 Rare	5 Catastrophic	5	Medium

Section 4: Surf club to Lawyers Head			
Likelihood	Consequence	Risk / Opportunity Score	Risk / Opportunity Rating
1 Rare	5 Catastrophic	5	Medium
1 Rare	5 Catastrophic	5	Medium
1 Rare	5 Catastrophic	5	Medium
1 Rare	5 Catastrophic	5	Medium

2.1.1	Storm Surge Overtopping	Storm surge causing overtopping of sea defences <u>and</u> causing harm to people
2.1.2	Storm Surge Overtopping	Storm surge causing overtopping of sea defences affecting private, commercial and retail property, utilities, roads <u>and</u> resulting in physical damage or loss of value
2.1.3	Storm Surge Overtopping	Storm surge causing overtopping of sea defences affecting cultural assets/icons and recreational opportunities <u>and</u> resulting in physical damage or loss of value
2.1.4	Storm Surge Overtopping	Storm surge causing overtopping of sea defences affecting lands and ecosystems <u>and</u> resulting in physical damage or loss of value
2.1.5	Storm Surge Overtopping	Storm surge causing overtopping or breaching of sea <u>and</u> defences dispersing former landfill contaminants causing harm to people
2.1.6	Storm Surge Overtopping	Storm surge causing overtopping or breaching of sea defences <u>and</u> dispersing former landfill contaminants causing harm to ecosystems

2 Unlikely	3 Moderate	6	Medium
2 Unlikely	3 Moderate	6	Medium
2 Unlikely	2 Minor	4	Low
2 Unlikely	1 Negligible	2	Low

2 Unlikely	3 Moderate	6	Medium
2 Unlikely	3 Moderate	6	Medium
1 Rare	1 Negligible	1	Low
1 Rare	1 Negligible	1	Low

1 Rare	3 Moderate	3	Low
1 Rare	3 Moderate	3	Low
1 Rare	3 Moderate	3	Low
1 Rare	3 Moderate	3	Low
1 Rare	5 Catastrophic	5	Medium
1 Rare	5 Catastrophic	5	Medium

1 Rare	3 Moderate	3	Low
1 Rare	4 Major	4	Low
1 Rare	3 Moderate	3	Low
1 Rare	3 Moderate	3	Low

2.2.1	Storm Surge Breach	Storm surge causing slumping/breach of sea defences <u>and</u> causing harm to people
2.2.2	Storm Surge Breach	Storm surge causing slumping/breach of sea defences affecting private, commercial and retail property, utilities, roads <u>and</u> resulting in physical damage or loss of value
2.2.3	Storm Surge Breach	Storm surge causing slumping/breach of sea defences affecting cultural assets/icons and recreational opportunities <u>and</u> resulting in physical damage or loss of value
2.2.4	Storm Surge Breach	Storm surge causing slumping/breach of sea defences affecting lands and ecosystems <u>and</u> resulting in physical damage or loss of value
2.2.5	Storm Surge Breach	Storm surge causing overtopping or breaching of sea defences <u>and</u> dispersing former landfill contaminants causing harm to people
2.2.6	Storm Surge Breach	Storm surge causing overtopping or breaching of sea defences <u>and</u> dispersing former landfill contaminants causing harm to ecosystems

1 Rare	3 Moderate	3	Low
1 Rare	3 Moderate	3	Low
1 Rare	2 Minor	2	Low
1 Rare	1 Negligible	1	Low

3 Possible	3 Moderate	9	Medium
3 Possible	3 Moderate	9	Medium
3 Possible	3 Moderate	9	Medium
3 Possible	2 Minor	6	Medium

2 Unlikely	3 Moderate	6	Medium
2 Unlikely	3 Moderate	6	Medium
2 Unlikely	3 Moderate	6	Medium
2 Unlikely	2 Minor	4	Low
2 Unlikely	5 Catastrophic	10	High
2 Unlikely	5 Catastrophic	10	High

1 Rare	3 Moderate	3	Low
1 Rare	3 Moderate	3	Low
1 Rare	3 Moderate	3	Low
1 Rare	3 Moderate	3	Low

2.3.1	Storm Surge Erosion	Storm surge causing erosional breach of sea defences <u>and</u> causing harm to people
2.3.2	Storm Surge Erosion	Storm surge causing erosional breach of sea defences affecting private, commercial and retail property, utilities, roads <u>and</u> resulting in physical damage or loss of value
2.3.3	Storm Surge Erosion	Storm surge causing erosional breach of sea defences affecting cultural assets/icons and recreational opportunities <u>and</u> resulting in physical damage or loss of value
2.3.4	Storm Surge Erosion	Storm surge causing erosional breach of sea defences affecting lands and ecosystems <u>and</u> resulting in physical damage or loss of value
2.3.5	Storm Surge Erosion	Storm surge causing erosion of sea defences <u>and</u> dispersing former landfill contaminants causing harm to people
2.3.6	Storm Surge Erosion	Storm surge causing erosion of sea defences <u>and</u> dispersing former landfill contaminants causing harm to ecosystems

1 Rare	3 Moderate	3	Low
1 Rare	3 Moderate	3	Low
1 Rare	2 Minor	2	Low
1 Rare	1 Negligible	1	Low

2 Unlikely	4 Major	8	Medium
3 Possible	3 Moderate	9	Medium
3 Possible	2 Minor	6	Medium
3 Possible	2 Minor	6	Medium

2 Unlikely	3 Moderate	6	Medium
3 Possible	2 Minor	6	Medium
3 Possible	2 Minor	6	Medium
3 Possible	1 Negligible	3	Low
3 Possible	4 Major	12	High
3 Possible	4 Major	12	High

1 Rare	3 Moderate	3	Low
1 Rare	4 Major	4	Low
1 Rare	3 Moderate	3	Low
1 Rare	3 Moderate	3	Low

3.1.1	Ground Water Rise	Ground water rise causing erosional breach of sea defences <u>and</u> causing harm to people
3.1.2	Ground Water Rise	Ground water rise causing erosional breach of sea defences affecting private, commercial and retail property, utilities, roads <u>and</u> resulting in physical damage or loss of value
3.1.3	Ground Water Rise	Ground water rise causing erosional breach of sea defences affecting cultural assets/icons and recreational opportunities <u>and</u> resulting in physical damage or loss of value
3.1.4	Ground Water Rise	Ground water rise causing erosional breach of sea defences affecting lands and ecosystems <u>and</u> resulting in physical damage or loss of value

Ocean Beach Risk Assessment - 2011

Entry No.	Keyword	Risk / Opportunity Description
3.1.5	Ground Water Rise	Ground water rise causing erosion of sea defences <u>and</u> dispersing former landfill contaminants causing harm to people
3.1.6	Ground Water Rise	Ground water rise causing erosion of sea defences <u>and</u> dispersing former landfill contaminants causing harm to ecosystems

Section 1: Sea wall section			
Likelihood	Consequence	Risk / Opportunity Score	Risk / Opportunity Rating

Section 2: End of sea wall to Cultural Centre			
Likelihood	Consequence	Risk / Opportunity Score	Risk / Opportunity Rating

Section 3: Cultural Centre to St. Kilda surf club			
Likelihood	Consequence	Risk / Opportunity Score	Risk / Opportunity Rating

Section 4: Surf club to Lawyers Head			
Likelihood	Consequence	Risk / Opportunity Score	Risk / Opportunity Rating

4.1.1	Human Damage	Human damage predisposing dunes to slumping/breach <u>and</u> causing harm to people
4.1.2	Human Damage	Human damage predisposing dunes to slumping/breach affecting private, commercial and retail property, utilities, roads <u>and</u> resulting in physical damage or loss of value
4.1.3	Human Damage	Human damage predisposing dunes to slumping/breach and cultural assets/icons and recreational opportunities <u>and</u> resulting in physical damage or loss of value
4.1.4	Human Damage	Human damage predisposing dunes to slumping/breach and lands and ecosystems <u>and</u> resulting in physical damage or loss of value
4.1.5	Human Damage	Human damage predisposing dunes to slumping/breach <u>and</u> dispersing former landfill contaminants causing harm to people
4.1.6	Human Damage	Human damage predisposing dunes to slumping/breach <u>and</u> dispersing former landfill contaminants causing harm to ecosystems

1 Rare	1 Negligible	1	Low
1 Rare	1 Negligible	1	Low
1 Rare	1 Negligible	1	Low
1 Rare	1 Negligible	1	Low

1 Rare	1 Negligible	1	Low
1 Rare	1 Negligible	1	Low
1 Rare	1 Negligible	1	Low
1 Rare	1 Negligible	1	Low

1 Rare	1 Negligible	1	Low
1 Rare	1 Negligible	1	Low
1 Rare	1 Negligible	1	Low
1 Rare	1 Negligible	1	Low
1 Rare	1 Negligible	1	Low
1 Rare	1 Negligible	1	Low

1 Rare	1 Negligible	1	Low
1 Rare	1 Negligible	1	Low
1 Rare	1 Negligible	1	Low
1 Rare	1 Negligible	1	Low

5.1.1	Seismic	Seismic failure of dunes resulting in slumping/breach of sea defences <u>and</u> causing harm to people
5.1.2	Seismic	Seismic failure of dunes resulting in slumping/breach of sea defences affecting private, commercial and retail property, utilities, roads <u>and</u> resulting in physical damage or loss of value
5.1.3	Seismic	Seismic failure of dunes resulting in slumping/breach of sea defences affecting cultural assets/icons and recreational opportunities <u>and</u> resulting in physical damage or loss of value
5.1.4	Seismic	Seismic failure of dunes resulting in slumping/breach of sea defences affecting lands and ecosystems <u>and</u> resulting in physical damage or loss of value
5.1.5	Seismic	Seismic failure of dunes resulting in slumping/breach <u>and</u> dispersing former landfill contaminants causing harm to people
5.1.6	Seismic	Seismic failure of dunes resulting in slumping/breach <u>and</u> dispersing former landfill contaminants causing harm to ecosystems

1 Rare	4 Major	4	Low
1 Rare	4 Major	4	Low
1 Rare	4 Major	4	Low
1 Rare	4 Major	4	Low

1 Rare	4 Major	4	Low
1 Rare	4 Major	4	Low
1 Rare	4 Major	4	Low
1 Rare	4 Major	4	Low

1 Rare	4 Major	4	Low
1 Rare	4 Major	4	Low
1 Rare	4 Major	4	Low
1 Rare	4 Major	4	Low
1 Rare	2 Minor	2	Low
1 Rare	2 Minor	2	Low

1 Rare	4 Major	4	Low
1 Rare	4 Major	4	Low
1 Rare	4 Major	4	Low
1 Rare	4 Major	4	Low

Ocean Beach Risk Assessment - 2090

Entry No.	Keyword	Risk / Opportunity Description	Section 1: Sea wall section				Section 2: End of sea wall to Cultural Centre				Section 3: Cultural Centre to St. Kilda surf club				Section 4: Surf club to Lawyers Head			
			Likelihood	Consequence	Risk / Opportunity Score	Risk / Opportunity Rating	Likelihood	Consequence	Risk / Opportunity Score	Risk / Opportunity Rating	Likelihood	Consequence	Risk / Opportunity Score	Risk / Opportunity Rating	Likelihood	Consequence	Risk / Opportunity Score	Risk / Opportunity Rating
1.1.1	Tsunami Overtopping/Breach	Tsunami causing overtopping or breaching of sea defences <u>and</u> causing harm to people	1 Rare	5 Catastrophic	5	Medium	1 Rare	5 Catastrophic	5	Medium	1 Rare	5 Catastrophic	5	Medium	1 Rare	5 Catastrophic	5	Medium
1.1.2	Tsunami Overtopping/Breach	Tsunami causing overtopping or breaching of sea defences affecting private, commercial and retail property, utilities, roads <u>and</u> resulting in physical damage or loss of value	1 Rare	5 Catastrophic	5	Medium	1 Rare	5 Catastrophic	5	Medium	1 Rare	5 Catastrophic	5	Medium	1 Rare	5 Catastrophic	5	Medium
1.1.3	Tsunami Overtopping/Breach	Tsunami causing overtopping or breaching of sea defences affecting cultural assets/icons and recreational opportunities <u>and</u> resulting in physical damage or loss of value	1 Rare	5 Catastrophic	5	Medium	1 Rare	5 Catastrophic	5	Medium	1 Rare	5 Catastrophic	5	Medium	1 Rare	5 Catastrophic	5	Medium
1.1.4	Tsunami Overtopping/Breach	Tsunami causing overtopping or breaching of sea defences affecting lands and ecosystems <u>and</u> resulting in physical damage or loss of value	1 Rare	5 Catastrophic	5	Medium	1 Rare	5 Catastrophic	5	Medium	1 Rare	5 Catastrophic	5	Medium	1 Rare	5 Catastrophic	5	Medium
1.1.5	Tsunami Overtopping/Breach	Tsunami causing overtopping or breaching of sea defences <u>and</u> dispersing former landfill contaminants causing harm to people																
1.1.6	Tsunami Overtopping/Breach	Tsunami causing overtopping or breaching of sea defences <u>and</u> dispersing former landfill contaminants causing harm to ecosystems																
2.1.1	Storm Surge Overtopping	Storm surge causing overtopping of sea defences <u>and</u> causing harm to people	3 Possible	3 Moderate	9	Medium	3 Possible	3 Moderate	9	Medium	2 Unlikely	3 Moderate	6	Medium	1 Rare	3 Moderate	3	Low
2.1.2	Storm Surge Overtopping	Storm surge causing overtopping of sea defences affecting private, commercial and retail property, utilities, roads <u>and</u> resulting in physical damage or loss of value	3 Possible	3 Moderate	9	Medium	3 Possible	3 Moderate	9	Medium	2 Unlikely	3 Moderate	6	Medium	1 Rare	4 Major	4	Low
2.1.3	Storm Surge Overtopping	Storm surge causing overtopping of sea defences affecting cultural assets/icons and recreational opportunities <u>and</u> resulting in physical damage or loss of value	3 Possible	2 Minor	6	Medium	2 Unlikely	2 Minor	4	Low	2 Unlikely	3 Moderate	6	Medium	1 Rare	3 Moderate	3	Low
2.1.4	Storm Surge Overtopping	Storm surge causing overtopping of sea defences affecting lands and ecosystems <u>and</u> resulting in physical damage or loss of value	3 Possible	1 Negligible	3	Low	2 Unlikely	2 Minor	4	Low	2 Unlikely	3 Moderate	6	Medium	1 Rare	3 Moderate	3	Low
2.1.5	Storm Surge Overtopping	Storm surge causing overtopping or breaching of sea <u>and</u> defences dispersing former landfill contaminants causing harm to people									2 Unlikely	5 Catastrophic	10	High				
2.1.6	Storm Surge Overtopping	Storm surge causing overtopping or breaching of sea defences <u>and</u> dispersing former landfill contaminants causing harm to ecosystems									2 Unlikely	5 Catastrophic	10	High				
2.2.1	Storm Surge Breach	Storm surge causing slumping/breach of sea defences <u>and</u> causing harm to people	1 Rare	3 Moderate	3	Low	4 Likely	3 Moderate	12	High	3 Possible	3 Moderate	9	Medium	2 Unlikely	3 Moderate	6	Medium
2.2.2	Storm Surge Breach	Storm surge causing slumping/breach of sea defences affecting private, commercial and retail property, utilities, roads <u>and</u> resulting in physical damage or loss of value	1 Rare	3 Moderate	3	Low	4 Likely	3 Moderate	12	High	3 Possible	3 Moderate	9	Medium	2 Unlikely	3 Moderate	6	Medium
2.2.3	Storm Surge Breach	Storm surge causing slumping/breach of sea defences affecting cultural assets/icons and recreational opportunities <u>and</u> resulting in physical damage or loss of value	1 Rare	2 Minor	2	Low	4 Likely	3 Moderate	12	High	3 Possible	3 Moderate	9	Medium	2 Unlikely	3 Moderate	6	Medium
2.2.4	Storm Surge Breach	Storm surge causing slumping/breach of sea defences affecting lands and ecosystems <u>and</u> resulting in physical damage or loss of value	1 Rare	1 Negligible	1	Low	4 Likely	2 Minor	8	Medium	3 Possible	2 Minor	6	Medium	2 Unlikely	3 Moderate	6	Medium
2.2.5	Storm Surge Breach	Storm surge causing overtopping or breaching of sea defences <u>and</u> dispersing former landfill contaminants causing harm to people									3 Possible	5 Catastrophic	15	Extreme				
2.2.6	Storm Surge Breach	Storm surge causing overtopping or breaching of sea defences <u>and</u> dispersing former landfill contaminants causing harm to ecosystems									3 Possible	5 Catastrophic	15	Extreme				
2.3.1	Storm Surge Erosion	Storm surge causing erosional breach of sea defences <u>and</u> causing harm to people	1 Rare	3 Moderate	3	Low	2 Unlikely	3 Moderate	6	Medium	2 Unlikely	3 Moderate	6	Medium	1 Rare	3 Moderate	3	Low
2.3.2	Storm Surge Erosion	Storm surge causing erosional breach of sea defences affecting private, commercial and retail property, utilities, roads <u>and</u> resulting in physical damage or loss of value	1 Rare	3 Moderate	3	Low	4 Likely	3 Moderate	12	High	4 Likely	2 Minor	8	Medium	2 Unlikely	4 Major	8	Medium
2.3.3	Storm Surge Erosion	Storm surge causing erosional breach of sea defences affecting cultural assets/icons and recreational opportunities <u>and</u> resulting in physical damage or loss of value	1 Rare	2 Minor	2	Low	4 Likely	2 Minor	8	Medium	4 Likely	2 Minor	8	Medium	2 Unlikely	3 Moderate	6	Medium
2.3.4	Storm Surge Erosion	Storm surge causing erosional breach of sea defences affecting lands and ecosystems <u>and</u> resulting in physical damage or loss of value	1 Rare	1 Negligible	1	Low	3 Possible	2 Minor	6	Medium	3 Possible	2 Minor	6	Medium	2 Unlikely	3 Moderate	6	Medium
2.3.5	Storm Surge Erosion	Storm surge causing erosion of sea defences <u>and</u> dispersing former landfill contaminants causing harm to people									4 Likely	4 Major	16	Extreme				
2.3.6	Storm Surge Erosion	Storm surge causing erosion of sea defences <u>and</u> dispersing former landfill contaminants causing harm to ecosystems									4 Likely	4 Major	16	Extreme				

3.1.1	Ground Water Rise	Ground water rise causing erosional breach of sea defences <u>and</u> causing harm to people																
3.1.2	Ground Water Rise	Ground water rise causing erosional breach of sea defences affecting private, commercial and retail property, utilities, roads <u>and</u> resulting in physical damage or loss of value																
3.1.3	Ground Water Rise	Ground water rise causing erosional breach of sea defences affecting cultural assets/icons and recreational opportunities <u>and</u> resulting in physical damage or loss of value																
3.1.4	Ground Water Rise	Ground water rise causing erosional breach of sea defences affecting lands and ecosystems <u>and</u> resulting in physical damage or loss of value																
3.1.5	Ground Water Rise	Ground water rise causing erosion of sea defences <u>and</u> dispersing former landfill contaminants causing harm to people																
3.1.6	Ground Water Rise	Ground water rise causing erosion of sea defences <u>and</u> dispersing former landfill contaminants causing harm to ecosystems																

4.1.1	Human Damage	Human damage predisposing dunes to slumping/breach <u>and</u> causing harm to people	1 Rare	1 Negligible	1	Low	1 Rare	1 Negligible	1	Low	1 Rare	1 Negligible	1	Low	1 Rare	1 Negligible	1	Low
4.1.2	Human Damage	Human damage predisposing dunes to slumping/breach affecting private, commercial and retail property, utilities, roads <u>and</u> resulting in physical damage or loss of value	1 Rare	1 Negligible	1	Low	1 Rare	1 Negligible	1	Low	1 Rare	1 Negligible	1	Low	1 Rare	1 Negligible	1	Low
4.1.3	Human Damage	Human damage predisposing dunes to slumping/breach and cultural assets/icons and recreational opportunities <u>and</u> resulting in physical damage or loss of value	1 Rare	1 Negligible	1	Low	1 Rare	1 Negligible	1	Low	1 Rare	1 Negligible	1	Low	1 Rare	1 Negligible	1	Low
4.1.4	Human Damage	Human damage predisposing dunes to slumping/breach and lands and ecosystems <u>and</u> resulting in physical damage or loss of value	1 Rare	1 Negligible	1	Low	1 Rare	1 Negligible	1	Low	1 Rare	1 Negligible	1	Low	1 Rare	1 Negligible	1	Low
4.1.5	Human Damage	Human damage predisposing dunes to slumping/breach <u>and</u> dispersing former landfill contaminants causing harm to people									1 Rare	1 Negligible	1	Low				
4.1.6	Human Damage	Human damage predisposing dunes to slumping/breach <u>and</u> dispersing former landfill contaminants causing harm to ecosystems									1 Rare	1 Negligible	1	Low				

5.1.1	Seismic	Seismic failure of dunes resulting in slumping/breach of sea defences <u>and</u> causing harm to people	1 Rare	4 Major	4	Low	1 Rare	4 Major	4	Low	1 Rare	4 Major	4	Low	1 Rare	4 Major	4	Low
5.1.2	Seismic	Seismic failure of dunes resulting in slumping/breach of sea defences affecting private, commercial and retail property, utilities, roads <u>and</u> resulting in physical damage or loss of value	1 Rare	4 Major	4	Low	1 Rare	4 Major	4	Low	1 Rare	4 Major	4	Low	1 Rare	4 Major	4	Low
5.1.3	Seismic	Seismic failure of dunes resulting in slumping/breach of sea defences affecting cultural assets/icons and recreational opportunities <u>and</u> resulting in physical damage or loss of value	1 Rare	4 Major	4	Low	1 Rare	4 Major	4	Low	1 Rare	4 Major	4	Low	1 Rare	4 Major	4	Low
5.1.4	Seismic	Seismic failure of dunes resulting in slumping/breach of sea defences affecting lands and ecosystems <u>and</u> resulting in physical damage or loss of value	1 Rare	4 Major	4	Low	1 Rare	4 Major	4	Low	1 Rare	4 Major	4	Low	1 Rare	4 Major	4	Low
5.1.5	Seismic	Seismic failure of dunes resulting in slumping/breach <u>and</u> dispersing former landfill contaminants causing harm to people									1 Rare	2 Minor	2	Low				
5.1.6	Seismic	Seismic failure of dunes resulting in slumping/breach <u>and</u> dispersing former landfill contaminants causing harm to ecosystems									1 Rare	2 Minor	2	Low				