

Chapter Report 3: Vulnerability Assessment and Risk Evaluation

City of Stirling Coastal Hazard Risk
Management and Adaptation Plan

CW1195500



Prepared for
City of Stirling

23 June 2023



now



Contact Information

Cardno (WA) Pty Ltd

ABN 77 009 119 000

11 Harvest Terrace
West Perth WA 6005
PO Box 447

www.cardno.com

Phone +61 8 9273 3888

Fax +61 8 9486 8664

Document Information

Prepared for	City of Stirling
Project Name	City of Stirling Coastal Hazard Risk Management and Adaptation Plan
File Reference	R003
Job Reference	CW1195500
Date	23 June 2023
Version Number	Rev 1

Author(s):

Leo Reith



Coastal Engineer

Effective Date 23/06/2023

Approved By:



Daniel Strickland

Date Approved 23/06/2023

Principal Coastal Engineer

Document History

Version	Effective Date	Description of Revision	Prepared by	Reviewed by
Rev A	28/07/2022	Draft	LR / UWA	DRS
Rev 0	9/11/2022	Final	LR / UWA	DRS / CoS / DoPLH / DoT
Rev 1	23/06/2023	Final	LR / UWA	DRS / CoS / DoPLH / DoT / Community

© Cardno. Copyright in the whole and every part of this document belongs to Cardno and may not be used, sold, transferred, copied or reproduced in whole or in part in any manner or form or in or on any media to any person other than by agreement with Cardno.

This document is produced by Cardno solely for the benefit and use by the client in accordance with the terms of the engagement. Cardno does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by any third party on the content of this document.

Our report is based on information made available by the client. The validity and comprehensiveness of supplied information has not been independently verified and, for the purposes of this report, it is assumed that the information provided to Cardno is both complete and accurate. Whilst, to the best of our knowledge, the information contained in this report is accurate at the date of issue, changes may occur to the site conditions, the site context or the applicable planning framework. This report should not be used after any such changes without consulting the provider of the report or a suitably qualified person.

Table of Contents

1	Introduction	5
1.1	Overview	5
1.2	Background	5
1.3	Overview of the CHRMAP Process	6
1.4	Success Criteria	6
1.5	Purpose of this Report	7
2	Vulnerability Assessment Methodology	10
2.1	Vulnerability Assessment Framework	10
2.2	Likelihood (asset exposure)	10
2.3	Consequence (asset sensitivity)	13
2.4	Risk Assessment	15
2.5	Adaptative Capacity	15
2.6	Vulnerability	16
3	Vulnerability Assessment Outcomes	17
3.1	Timeframes	17
3.2	Erosion	17
3.3	Inundation	18
4	Risk Evaluation	19
4.1	Overview	19
4.2	Management Units	19
4.3	Coastal Controls	28
4.4	Priorities for Treatment	29
5	Conclusions and Next Steps	30
6	References	31

Appendices

Appendix A	Management Units and Key Assets
Appendix B	Assigned Erosion Likelihood Ratings
Appendix C	Assigned Inundation Likelihood Ratings
Appendix D	Asset Valuations
Appendix E	Assigned Erosion Consequence Ratings
Appendix F	Assigned Inundation Consequence Ratings
Appendix G	Assigned Adaptive Capacity Ratings
Appendix H	Erosion Risk Assessment Outcomes
Appendix I	Erosion Vulnerability Assessment Outcomes
Appendix J	Inundation Risk Assessment Outcomes
Appendix K	Inundation Vulnerability Assessment Outcomes

Tables

Table 2-1	Likelihood ratings for coastal hazards	11
Table 2-2	Consequences ratings table (CoS, 2020)	14
Table 2-3	Risk matrix (based on AS5334-2013)	15
Table 2-4	CHRMAP adaptive capacity ratings	15
Table 2-5	Vulnerability analysis matrix	16
Table 2-6	Vulnerability levels and tolerances	16
Table 4-1	Key asset erosion risk ratings for MU1	20
Table 4-2	Key asset erosion vulnerability ratings for MU1	20
Table 4-3	Key asset erosion risk ratings for MU2	21
Table 4-4	Key asset erosion vulnerability ratings for MU2	22
Table 4-5	Key asset erosion risk ratings for MU3	23
Table 4-6	Key asset erosion vulnerability ratings for MU3	23
Table 4-7	Key asset erosion risk ratings for MU4	24
Table 4-8	Key asset erosion vulnerability ratings for MU4	24
Table 4-9	Key asset erosion risk ratings for MU5	25
Table 4-10	Key asset erosion vulnerability ratings for MU5	26
Table 4-11	Key asset erosion risk ratings for MU6	27
Table 4-12	Key asset erosion vulnerability ratings for MU6	28
Table 4-13	Comparison of risk ratings for assets - controlled vs uncontrolled	28
Table 4-14	Comparison of vulnerability ratings for assets - controlled vs uncontrolled	29

Figures

Figure 1-1	Projected sea level rise in Western Australia (DoT, 2010 & IPCC, 2021).	5
Figure 1-2	Study Area	8
Figure 1-3	Risk management steps forming the CHRMAP process (WAPC, 2019)	9
Figure 2-1	Conceptual relationship between risk assessment elements	10
Figure 2-2	Assigned asset likelihood corresponding to planning timeframes and erosion hazard extents for built assets	12

1 Introduction

1.1 Overview

The City of Stirling (herein referred to as ‘the City’) is located approximately 6 km north-west of Perth’s Central Business District (**Figure 1-2**). The City contains approximately 7km of Indian Ocean coastline, including iconic beaches, such as Scarborough, Trigg and Mettams Pool. The adjacent foreshore reserves support a variety of recreation, conservation and commercial land uses, including substantial built infrastructure situated in close proximity to the shoreline.

The City is undertaking a Coastal Hazard Risk Management and Adaptation Plan (CHRMAP) to provide strategic guidance for coordinated, integrated and sustainable land use planning and management along its coastline. The CHRMAP will inform the City’s future decision-making with respect to areas and assets identified as being at risk from coastal hazards.

1.2 Background

Globally, mean sea level (MSL) has risen since the nineteenth century and is predicted to continue to rise, at an increasing rate, through the twenty first century (Intergovernmental Panel on Climate Change [IPCC], 2021), bringing changes to the Western Australian (WA) coastline over the coming decades. To prepare for sea level rise (SLR) induced coastal hazards, such as coastal erosion and inundation, all levels of government are putting processes in place to ensure that communities understand the risks to values and assets on the coast, and to plan to adapt over time.

Changes to MSL over the past century have been observed for the coastline adjacent to the Perth Metropolitan Area. *Sea Level Change in Western Australia – Application to Coastal Planning* (Department of Transport [DoT], 2010) reviewed information relating to SLR at a local scale and recommended an allowance for SLR be adopted for planning purposes. Recommendations were based on the upper bound of the global average SLR projections from *IPCC’s Fourth Assessment Report [AR4]* (IPCC, 2007). In the intervening years, following release of the DoT document, advances in climate change science have been reflected in revisions to SLR projections, such as those documented in *IPCC’s Sixth Assessment Report [AR6]* (IPCC, 2021). Current guidance on global SLR projections are derived from Shared Socioeconomic Pathways (SSP), characterising the trajectory of global society, demographics and economics over the coming century. Analogous to that used in DoT’s recommendation is SSP5, which forecasts a SLR of 0.94m between 2020 and 2120 (**Figure 1-1**).

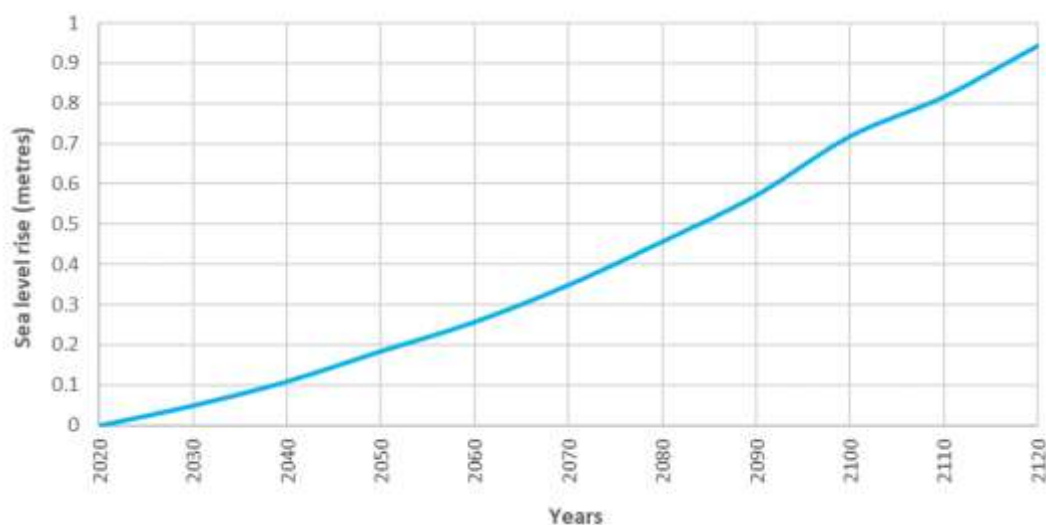


Figure 1-1 Projected sea level rise in Western Australia (DoT, 2010 & IPCC, 2021).

The City's coastline to the south of Trigg Island is sandy, featuring coastal dunes, nearshore reefs and seagrass meadows. For sandy coastlines, increases in local MSL generally result in shoreline recession, with a "rule of thumb" often applied, that a 1 cm rise in MSL will result in 1 m of landward recession of the shoreline. It should be noted that this is based on the "Bruun Rule" which is generally considered a conservative (and simplified) approach (Rosati et al, 2013; Cooper & Pilkey, 2004).

North of Trigg Island, the coastline features pocket perched beaches, with nearshore reef platforms, visible rocky cliffs and subsurface rock formations. In these areas' special consideration of the height and integrity of the rock formations is required to ascertain the level of erosion protection that the rocky features will afford adjacent areas.

1.3 Overview of the CHRMAP Process

The key policy governing coastal planning in WA is the *State Planning Policy No. 2.6: State Coastal Planning Policy* (Western Australian Planning Commission [WAPC], 2013a) (SPP2.6). SPP2.6 recommends that management authorities develop a CHRMAP, using a risk mitigation approach to planning, that identifies the hazards associated with existing and future development in the coastal zone. SPP2.6 and the *State Coastal Planning Policy Guidelines* (WAPC, 2013b) contain prescriptive details, for example in relation to scales of assessment, storm event types and SLR allowances.

The WAPC (2019) has also developed the *Coastal hazard risk management and adaptation planning guidelines* (CHRMAP Guidelines) which are less prescriptive in terms of technical assessment of coastal processes, but are aimed to ensure that planning is carried out using a risk-based approach. This includes paying due regard to stakeholder engagement, community consultation and education, and requires that a full range of applicable adaptation options are considered. An overview of the typical CHRMAP process is shown in **Figure 1-3**.

Coastal planning in accordance with SPP2.6 also needs to take into consideration the requirements of other planning policies, including *Statement of Planning Policy No. 2: Environment and Natural Resources Policy* (WAPC, 2003) (SPP2), *State Planning Policy No. 2.8: Bushland policy for the Perth Metropolitan Region* (WAPC, 2010) (SPP2.8), *Statement of Planning Policy No. 3: Urban Growth and Settlement* (WAPC, 2006a) (SPP3.0) and *State Planning Policy No. 3.4: Natural Hazards and Disasters* (WAPC, 2006b) (SPP3.4).

1.4 Success Criteria

Success criteria have been defined for the project, based on the outcomes of the Coastal Values Survey and are used to guide consequence ratings in the vulnerability analysis. These are:

- > SC1: Preserve the function and opportunity for recreation activities along the coastline (such as walking/running, swimming and surfing).
- > SC2: Preserve the existing hospitality venues along the coastline and access to them.
- > SC3: Ensure the natural environment is protected and sustained in its current condition or an improved condition (concerning the dunes and flora and fauna).
- > SC4: Develop solutions to coastal processes that are sustainable (financially, socially and built form) and locally responsive.
- > SC5: Revisit regularly with community and key stakeholders their values in relation to development adjacent the coastline.
- > SC6: Maintain services that maximise community benefit for all.
- > SC7: Ensure the coastline is safe and accessible to all.
- > SC8: Achieve a balance between access needs and environmental sensitivities.

1.5 Purpose of this Report

The City's CHRMAP has been developed by a staged approach, with the various stages documented in dedicated chapter reports. The chapter reports have been summarised and used to underpin the overall CHRMAP document. The purpose of the chapter reporting is to capture key technical detail, while the overall CHRMAP presents a more accessible and community-friendly document. The chapter reports prepared as part of the City's CHRMAP include:

- > Chapter 1 – Establish the Context (Stage 1) (Cardno, 2023a);
- > Chapter 2 – Risk Identification (Stage 2) (Cardno, 2023b);
- > **Chapter 3 – Vulnerability Assessment and Risk Evaluation (Stages 3 and 4);**
- > Chapter 4 – Risk Treatment (Stage 5) (Cardno, 2023c); and
- > Chapter 5 – Implementation (Stage 6) (Cardno, 2023d).

This document outlines the interpretation of coastal hazard risk identification (Stage 2), to assess the risk and vulnerability of assets along the City's coastline. The Chapter Report aims to identify priority areas of risk and vulnerability for the City, allowing adaptation options to be assessed for these areas. This document has been designed to inform the community and provide direction to the City in planning for risks facing its coastal areas. The vulnerability assessment process has been guided by the Project's success criteria, defined through the City's community engagement process. Success criteria have been used to determine community values and refine consequence ratings for the potential impacts of coastal hazards. This document also outlines the impact of existing controls on risk as well as the prioritisation of vulnerable assets and areas for risk treatment (Risk Evaluation).



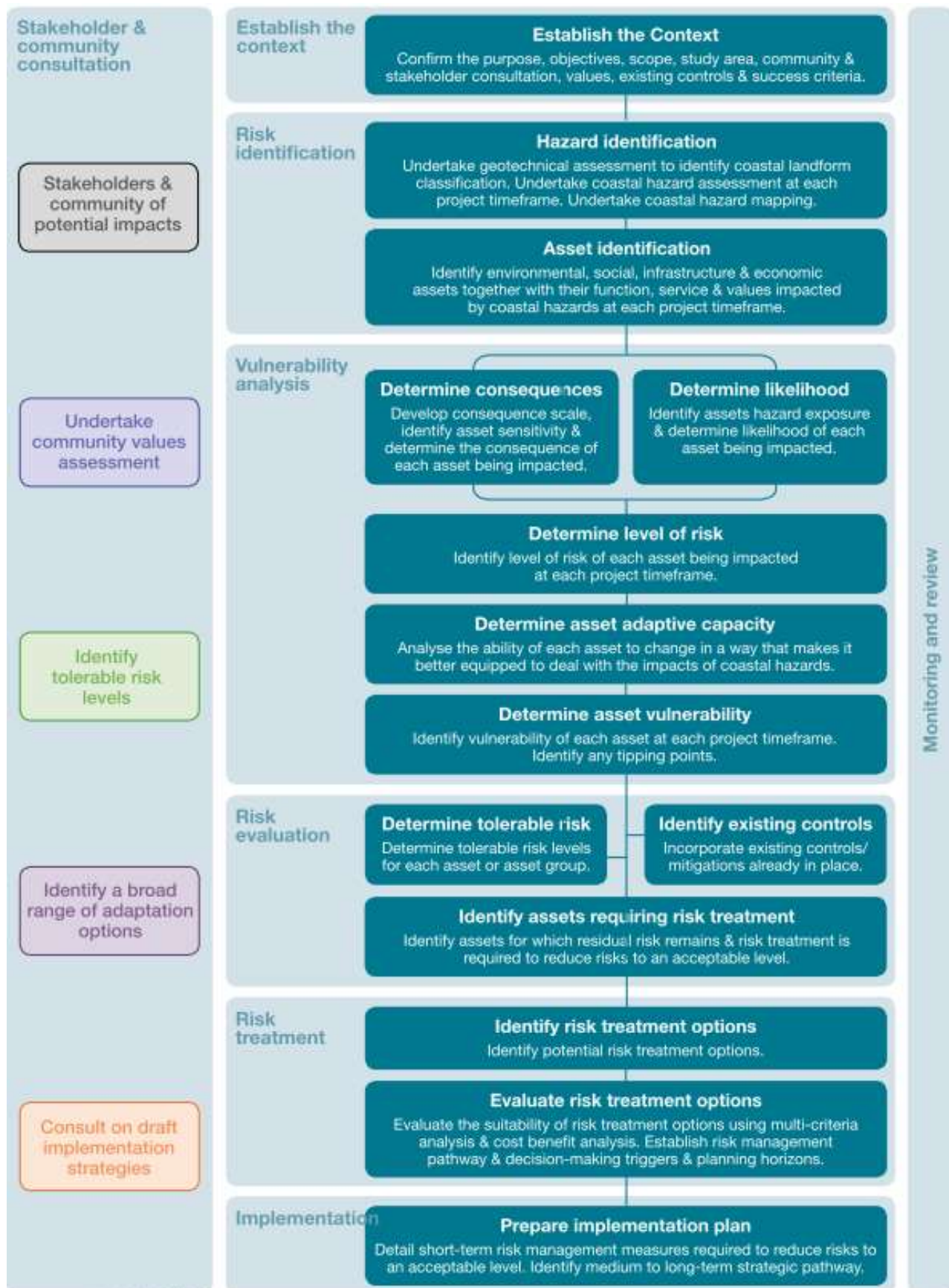


Figure 1-3 Risk management steps forming the CHRMAP process (WAPC, 2019)

2 Vulnerability Assessment Methodology

2.1 Vulnerability Assessment Framework

To provide a transparent and logical basis for determining adaptation planning priorities, a risk assessment was undertaken based on the Australian Standard Guideline *Climate change adaptation for settlements and infrastructure – A risk based approach* (AS5334-2013), and the *CHRMAP guidelines* (WAPC, 2019). As illustrated in **Figure 2-1**, risk was assessed in relation to likelihood and consequence. Likelihood was assigned using the results of the coastal hazard identification (Cardno, 2023b). Consequence ratings were informed by a combination of environmental, social and economic values and additional values determined through community consultation, economic assessment and experience with similar assets along the WA coastline. Combining an assets' level of risk with its adaptive capacity determines an asset's (or group of assets') overall vulnerability to coastal hazards.

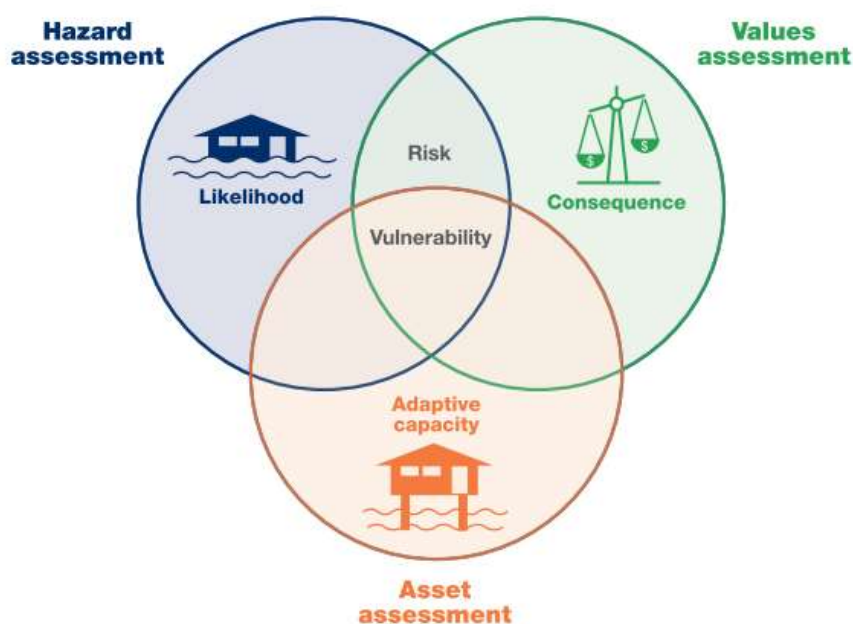


Figure 2-1 Conceptual relationship between risk assessment elements

All steps in the risk assessment process call for interpretation, and allocation of consequence in particular may be based on subjective judgement. However, the adopted framework means that specific outcomes can be clearly traced to inputs. The inputs can be updated in the future in response to new information or stakeholder input, and the risk assessment outcomes can be revised accordingly. Additional details on how the input parameters were derived, and the ratings were developed, is provided below.

2.2 Likelihood (asset exposure)

2.2.1 Overview

According to WAPC (2019) and for the purposes of this study, likelihood (or asset exposure) is the chance of coastal erosion or storm surge inundation impacting on existing assets and their values. A description of likelihood of occurrence scales (with respect to a nominal planning timeframe) is presented in **Table 2-1**. 'Timeframe' and 'Probability' scales are assigned using the hazard extents produced in Stage 2 of the CHRMAP - *Risk Identification* (Cardno, 2023b). The 'Experience' likelihood rating is derived from the number of past occurrences of similar interactions between coastal hazards and assets along both the City's and Western Australia's coastline. It helps to 'ground-truth' modelled results against past, real-life observations. Because of this, the category has reducing applicability as you move to future timeframes, where unprecedented impacts are expected to be experienced because of climate change.

Table 2-1 Likelihood ratings for coastal hazards

Scale	Probability (of occurring within the planning timeframe)	Timeframe (for occurrence of individual erosion event)	Experience (for individual erosion event)
Almost Certain	80% - 99%	Once or more during the next year	Has occurred frequently at the location and in the City
Likely	60% - 80%	1-2 year timeframe	Has occurred frequently in the City
Possible	40% - 60%	5 year timeframe i.e. strategic planning timeframe	Has occurred once or twice in the City in recorded history
Unlikely	20% - 40%	10-20 year timeframe	Has occurred along WA's coastline but not in the City
Rare	1% - 20%	100 year time frame	Almost unheard of along WA's coastline
Near Impossible	< 1 %	500 year timeframe	Not recorded along WA's coastline

Erosion and inundation hazard extents are made up of several inputs and/or components. Each of these is based on a suite of assumptions and each has a degree of uncertainty which may influence the likelihood of a certain extent of erosion or inundation occurring, within each planning timeframe. For example, the extent of the coastal erosion hazard lines assumes a 100-year ARI storm event occurs exactly at the end of the planning timeframe, or that it occurs during the timeframe with no subsequent recovery of the shoreline. In reality this is unlikely to occur. To assign clear, consistent likelihood ratings dependant on asset location, the schematic shown in **Figure 2-2** has been developed and applied for built infrastructure assets. The assignments have been arrived at in consultation with the project's Steering Committee and considering the following:

- > The planning timeframes are not of equivalent length. I.e., the likelihood of the modelled 100-year ARI erosion event occurring increase with the length of the planning timeframe (e.g., less likely for 2022-2030 vs 2070-2122);
- > Erosion has been considered as the predominant coastal hazard to assess and manage, given its much higher (i.e. more permanent) consequences compared to coastal inundation for the City. Coastal inundation has also been assessed, however, for completeness and to identify areas where management of this hazard may be required;
- > The uncertainty of hazard extents as you move into the future has been considered by taking a more conservative approach to likelihood assignments for later planning timeframes; and
- > Assets are assigned the rating as soon as they intersect the relevant hazard line for erosion. I.e., once any portion of the asset lies seaward of the hazard line.

There is considerable scope for confusion in defining and allocating likelihood in terms of recurrence frequency/probability (as per AS 5334) for the purposes of vulnerability assessment, particularly given that this terminology has specific meaning in the coastal context. The approach that the CHRMAP has adopted, in terms of translating hazard extents to likelihood ratings for built assets, are clearly presented in **Figure 2-2**. These are generally consistent with guidance in WAPC (2019) and are considered to represent the quantification of the likelihood of occurrence as best possible, based on the outputs derived from *Risk Identification*.

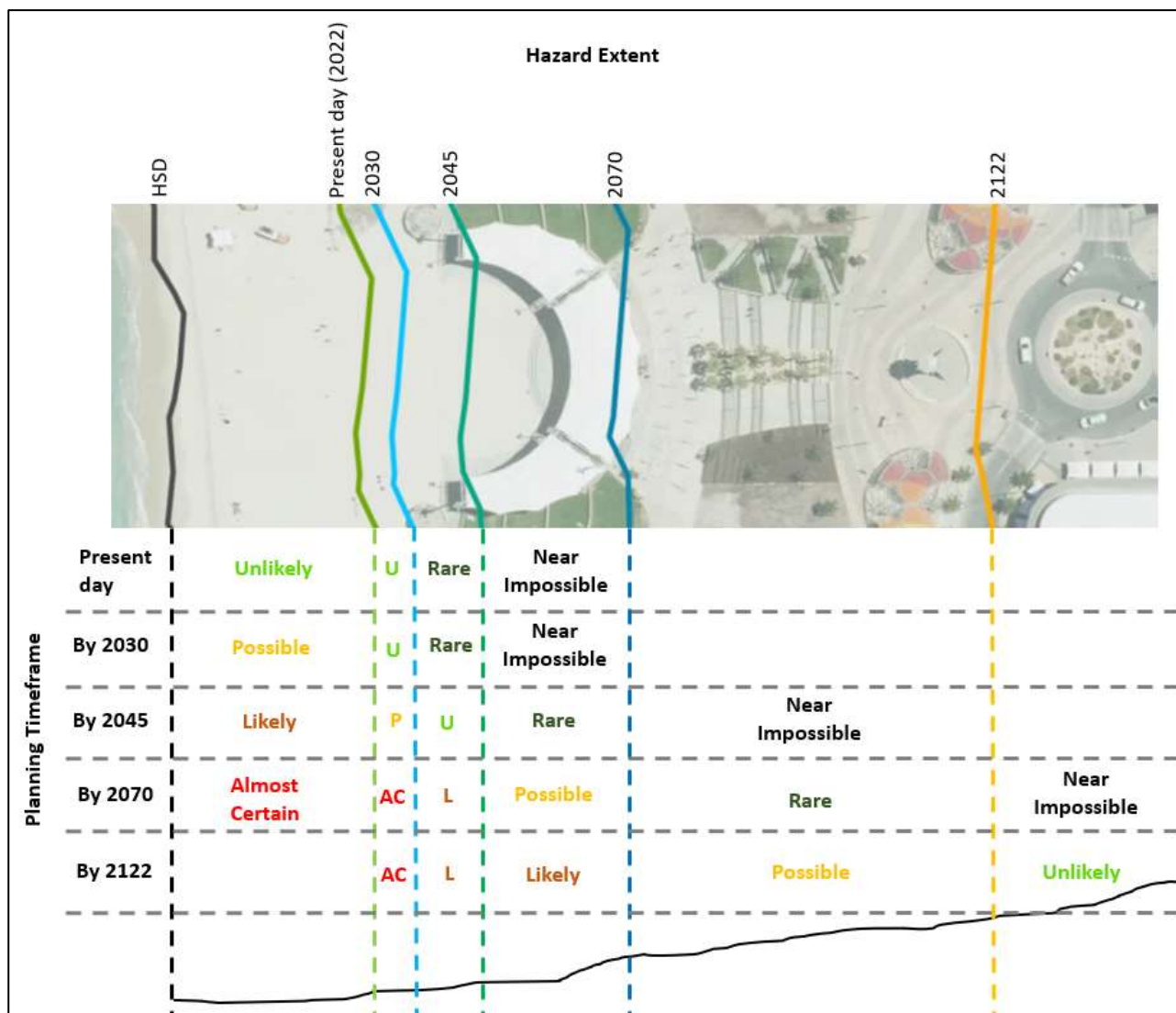


Figure 2-2 Assigned asset likelihood corresponding to planning timeframes and erosion hazard extents for built assets

2.2.2 Maritime and Coastal Infrastructure

Maritime/coastal structures such as jetties and seawalls are designed to interact with and withstand coastal hazards. Therefore, ratings for likelihood have not been assigned using their location relative to hazard lines (as this would compromise the assessment outcome, even with low consequence ratings). Likelihood is instead linked to the probability of failure of the structure, or their ability to withstand design storm events that become more frequent over time. Probability of failure has generally been assumed to be unlikely for such structures during the asset's remaining design life, with an increasing likelihood thereafter.

2.2.3 Natural Assets

Natural assets, such as beaches and dunes, are highly exposed to coastal hazards because of their proximity to the ocean. Therefore, ratings for likelihood have not been assigned using their location relative to hazard lines (as this would compromise the assessment outcome, even with low consequence ratings). The hazard lines have generally been interpreted to assess the likelihood of significant, permanent change to these natural assets from coastal hazards, which increases in likelihood over time. Such change would require a rare coastal hazard storm event (such as the 100-year ARI event considered) and/or substantial ongoing erosion such as that expected due to SLR.

2.2.4 Coastal Controls

Coastal controls, such as seawalls, affect the hazard line extents and, therefore, they affect the likelihood ratings when being incorporated in the risk assessment process. Likelihood ratings have been derived assuming the coastal controls are in place for their remaining lifespan (i.e., the controlled erosion hazard extents - see Cardno, 2023b) as they are expected to remain in place for this period. The controls can also influence adaptive capacity (see **Section 2.5**), for example, by restricting a beaches ability to migrate. The specific effect of these controls on risk and vulnerability to assets is discussed further in **Section 3.4** and captured in risk and vulnerability assessment inputs.

Assigned likelihood ratings for identified 'major' assets and grouped 'minor' assets are provided in **Appendix B** (erosion) and **Appendix C** (inundation). These assets are mapped in conjunction with coastal erosion hazard extents in **Appendix A**.

2.3 Consequence (asset sensitivity)

Consequence is the result of a hazard impacting an area, asset or group of assets. For this analysis, consequence has been divided into five ratings ranging from catastrophic to insignificant (**Table 2-2**), derived from the City's Risk Assessment Framework.

Consequence ratings are constant across planning horizons, as they are generally tied to asset values, function or importance. The City's Risk Assessment Framework includes consequence ratings for eight categories. Some of these are not considered applicable to the CHRMAP as they relate to specific project outcomes. Those that are considered applicable, and that have been assigned ratings, are:

- > Environmental;
- > Financial;
- > Occupational Safety and Health;
- > Reputation; and
- > Service Delivery.

The financial value of an asset is generally a good indicator of the consequence of it being impacted (i.e., the cost to replace or loss of value). Assessment of the financial consequence of impact for built assets has been based on estimating the total cost for replacement of impacted assets, with costs taken from the Australian Construction Handbook (Rawlinsons, 2021). This is based on erosion impacts being the predominant coastal hazard and the expectation that assets will need to be removed/replaced once impacted (or prior to impact). Valuation of natural assets has incorporated the results of the coastal values survey, as well as formal valuations of similar natural coastal assets such as beaches and dunes. Environmental Economists from the University of Western Australia (UWA) have provided expert input to these valuations. Inputs to inform asset values are provided in **Appendix D**.

The other consequence categories require subjective judgement and ratings have been assigned in consultation with the CHRMAP's Steering Committee, including officers from various services within the City. To assign an overall consequence rating, the highest rating has been selected from across the categories, for each asset, at each timeframe. Assigned consequence ratings for identified 'major' assets and grouped 'minor' assets are provided in **Appendix E** (erosion) and **Appendix F** (inundation).

Table 2-2 Consequences ratings table (CoS, 2020)

	Environmental	Financial	Legislative / Regulatory	Occupational Safety and Health	Performance (objectives)	Project	Reputation	Service Delivery / Business Disruption
Catastrophic	Extensive and irreversible environmental damage to flora/fauna/soil/water/air.	Loss of assets > 15% of asset value. Adverse impact on annual revenues. Over \$5 million loss.	Sustained non-compliance to legislation that could have funding impacts on the City or dismissal of Council.	Injury resulting in fatality or near miss with potential of fatality, member of the public injured	Non-achievement of major key objectives.	Project objectives not achieved, requiring the project to be fully re-scoped or discontinued.	Significant long-term damage to public confidence in the City, compromising the achievement of strategic objectives, extensive media coverage (local and national).	Major loss of service, including several important areas of service and/or an extended period. Ongoing loss of business systems.
High	Significant long-term environmental harm. Limited damage to flora/fauna/soil/water/air.	Loss of assets, 5% - 15% of asset value. Adverse impact on revenue and costs 5% - 15% deviation from budget. Between \$1 million and \$5 million loss.	Major regulatory breaches/non-compliance resulting in material fines, penalties and restrictions on Council operations.	Serious injury or potential resulting in lost time injury, notifiable incident or a member of the public put at risk of injury	Non-achievement of major deliverables	Significant variation to scope causing significant delays in project delivery.	Adverse local publicity affecting the perception/standing of the City within the community, local media coverage.	Complete loss of an important service area for a short period. Major disruption in business processes
Moderate	Short term environmental harm/effects on flora/fauna/soil/water/air.	Loss of assets 2%-5% of asset value. Adverse impact on revenue and costs 2% -5% deviation from budget. Between \$250 000 and \$1million loss.	Moderate regulatory breaches/non-compliance resulting inspections/reports	Incident resulting in medical treatment injury or complaint from member of the public regarding safety	Significant delays to major deliverables.	Moderate variation to scope, slight delay in project delivery.	Negative publicity or damage to reputation to a specific audience, local media coverage.	Major effect to an important service area for a short period. Moderate disruption in business processes.
Low	Minor environmental harm, contained and reversible.	Loss of assets <2% of asset value. Adverse impact on revenues and costs <2% deviation from budget. Between \$5000 and \$250 000.	Minor regulatory breaches/non-compliance	Incident resulting in first aid injury	Minimal delays to major deliverables.	Minor disruption in the delivery of the project.	Minor negative publicity or damage to reputation to an insignificant audience, complaint from a large group of people, minimal media coverage.	Brief disruption of important service area. Minor disruption in business processes.
Insignificant	Little impact, non-contaminating.	Insignificant loss of assets or insignificant adverse impact on annual revenue or costs. Less than \$5 000 loss.	No regulatory impact	Incident without the requirement for first aid treatment	Little impact on major deliverables.	Limited impact on project delivery	Minor unsubstantiated negative publicity. No media coverage.	Brief disruption of non-crucial service area.

2.4 Risk Assessment

The CHRMAP applies the City's (2020) risk assessment matrix (**Table 2-3**), which is based on that provided in AS5334-2013. Risk ratings represent the acceptability/tolerance of coastal hazard impact and the urgency of required action. This will help to prioritise multiple identified risks within the study area. It can also provide a mechanism to compare the level of risk after a preferred adaptation option is implemented (residual risk). For example, at present, a risk may be "Extreme" in the short term, after the implementation of adaption option 'X' the risk level is re-evaluated and reduces to "Medium". The risk evaluation process (**Section 4**) utilises the outcomes of the risk analysis to prioritise treatment. Likelihood and consequence allocated for assets, under each scenario, are combined to derive a risk rating for each asset or group of assets within each of the vulnerable areas.

Table 2-3 Risk matrix (based on AS5334-2013)

Likelihood	Consequence				
	Insignificant	Low	Moderate	High	Catastrophic
Almost Certain	Medium	High	High	Extreme	Extreme
Likely	Medium	Medium	High	High	Extreme
Possible	Low	Medium	Medium	High	High
Unlikely	Low	Low	Medium	Medium	High
Rare	Very Low	Low	Low	Medium	Medium
Near Impossible	Very Low	Very Low	Very Low	Very Low	Very Low

2.5 Adaptative Capacity

Adaptive capacity (**Table 2-4**) is based upon the potential for an asset to be modified or acclimatise to cope with the impacts of coastal hazards. The system of existing controls, such as a coastal protection structures, dune systems or reefs, all have an influence on the ability of hazards to affect a study site. The aim of the CHRMAP is to develop options that realise the potential adaptive capacity through techniques such as managed retreat, accommodation, and protection. An asset or group of assets with a high adaptive capacity is one that can easily (i.e., at low cost) be adapted or one that has some capacity to self-adapt with changing conditions (e.g., unimpeded beaches and dune systems can migrate across shore as the mean sea level (MSL) changes). Assets with a high risk level and low adaptive capacity are deemed highly vulnerable and management options should be investigated.

Assigned adaptive capacity ratings for all identified assets are provided in **Appendix G**.

Table 2-4 CHRMAP adaptive capacity ratings

Rating	Adaptive Capacity
Low	Little or no adaptive capacity. Potential impact would destroy all functionality.
Moderate	Small amount of adaptive capacity. Difficult but possible to restore functionality through repair and redesign.
High	Decent adaptive capacity. Functionality can be restored, although additional adaptive measures should still be considered. Natural adaptive capacity restored slowly over time under average conditions.
Very High	Good adaptive capacity. Functionality restored easily. Adaptive systems restored at a relatively low cost or naturally over time.

2.6 Vulnerability

Vulnerability is the potential for a system to suffer damage or ill effects as a result of coastal hazards or climate change. Vulnerability is a function of the likelihood of an event occurring, the consequences of the event and the capacity to adapt and change. In a similar fashion to the risk methodology, potential impact and adaptive capacity can be combined using a customised matrix (**Table 2-5**) with the significance of the vulnerability rating listed in relation to acceptability and tolerances provided in **Table 2-6**.

Table 2-5 Vulnerability analysis matrix

<u>Adaptive Capacity</u>				
<u>Risk Rating</u>	Very High	High	Moderate	Low
Extreme	High	High	Very high	Very high
High	Medium	High	High	Very high
Medium	Low	Medium	Medium	High
Low	Very low	Low	Low	Medium
Very Low	Very low	Very low	Very low	Low

Table 2-6 Vulnerability levels and tolerances

<u>Vulnerability Level</u>	<u>Action Required</u>	<u>Acceptance/Tolerance</u>
Very High	Significant further adaption required to ensure asset is not lost. Reconsideration of design if vulnerability cannot be reduced.	Unacceptable
High	Further adaption required. All stakeholders should be fully aware of risks if vulnerability cannot be reduced.	Tolerable / Unacceptable
Medium	Further adaption should be investigated, acceptable in certain circumstances. Monitoring programs recommended.	Tolerable
Low	Acceptable; adaption and monitoring may be required over the asset's lifetime.	Tolerable / Acceptable
Very Low	Acceptable; adaption and monitoring is unlikely to be required over the asset's lifetime.	Acceptable

3 Vulnerability Assessment Outcomes

3.1 Timeframes

It is important to use consistent terminology when discussing planning timeframes for the CHRMAP. The timeframes applied in this CHRMAP and risk/vulnerability assessment are reiterated, as follows:

- > 2022 – Present day;
- > 2030 timeframe – Immediate term (up to 2030);
- > 2045 timeframe – Short term (up to 2045);
- > 2070 timeframe – Medium term (up to 2070); and
- > 2122 timeframe – Long term (up to 2122).

3.2 Erosion

3.2.1 Erosion Risk

Outcomes of the erosion risk assessment for each asset are provided in **Appendix H**. The outcomes of the risk assessment for coastal erosion demonstrates that:

- > The most immediate risk relates to the City's beaches and vegetated dunes, which are highly valued and are naturally susceptible to coastal erosion due to their proximity to the ocean. The beaches to the north of Trigg Island, such as Watermans Bay and Mettams Pool, are at highest risk in the immediate term.
- > All beaches are at high risk by 2030;
- > Vegetated dunes are relatively extensive along the City's coastline, giving them a high overall value. These dunes systems are at high risk in most areas within the short term;
- > Various amenity and access infrastructure is at medium to high risk in the short term, given its close proximity to coastal erosion hazards and relatively high combined economic value, as well as high consequences tied to the loss of beach access;
- > Sections of West Coast Highway and significant built infrastructure at Scarborough and Trigg have high consequence ratings, due to their high economic value and service importance, but are not at high risk until later timeframes when coastal erosion hazard extents intersect them; and
- > All assets are at high to extreme risk by the end of the 100-year planning timeframe, demonstrating the high value of the City's coastal assets and high exposure of its coastline to climate change related coastal hazards.

Further assessment of combined coastal erosion risk for specific areas of coastline (management units) is undertaken as part of the risk evaluation (**Section 4**).

3.2.2 Erosion Vulnerability

Outcomes of the erosion vulnerability assessment for each asset are provided in **Appendix I**. Vulnerability ratings are comparable to risk ratings for the majority of assets at equivalent timeframes. Higher vulnerability is demonstrated for natural assets that have lesser adaptive capacity, such as the beaches and vegetated dunes to the north of Trigg Point. The ability of these assets to adapt naturally is impeded by natural geology and built infrastructure. The low adaptive capacity of major built infrastructure, such as sections of West Coast Highway and infrastructure at Trigg and Scarborough, leads to elevated vulnerability levels. But, again, these do not occur until later timeframes when these assets might potentially be impacted.

Further assessment of combined coastal erosion vulnerability for specific areas of coastline (management units) is undertaken as part of the risk evaluation (**Section 4**).

3.3 Inundation

3.3.1 Inundation Risk

Outcomes of the inundation risk assessment are provided in **Appendix J**. The risk to assets from inundation is very low to low for all assets in the immediate term. Medium risk levels are derived for infrastructure in close proximity to coastal hazards, such as North Beach Jetty, Watermans GSC Revetment and the carpark and lookout opposite Margaret Street, though impacts to these would be temporary. Beaches also reach medium risk by 2045, primarily associated with the short-term safety risk associated with inundation. The risk assessment demonstrates that, for all assets, erosion is the predominant coastal hazard risk.

3.3.2 Inundation Vulnerability

Outcomes of the inundation vulnerability assessment are provided in **Appendix K**. Vulnerability levels are comparable to risk levels for inundation for most assets. Lower vulnerability levels are demonstrated for some built assets, once their relatively good adaptive capacity is incorporated. Such adaptation to coastal inundation could take the form of improved drainage or inundation barriers (e.g., for carparks).

4 Risk Evaluation

4.1 Overview

Generally coastal inundation and coastal erosion will occur at the same time during a storm event. In the majority of circumstances and locations for the City's coastline, the impacts of coastal erosion on infrastructure will be more severe and long-lasting than the impacts of coastal inundation. For coastal infrastructure located in close proximity to coastal hazards, such as jetties, coastal protection infrastructure and access stairs, the nature of these assets was considered in defining the consequence (and likelihood) of impact. Such infrastructure is generally designed to withstand the ongoing impacts of the coastal environment (though not necessarily changes associated with SLR) and cannot be treated in the same way as other built assets. The risk to these assets is, therefore, relatively low, despite their close proximity to the ocean.

It is important to evaluate and compare risk levels, to prioritise the treatment of risk for assets and coastal areas. For the City, it is more important to understand aggregated risk in certain areas, as adaptation options are likely to be wholistic to counter erosion over a broad coastal zone. There is also the potential for a risk treatment to lower risk for one area or asset, while increasing risk for other areas or assets (common examples being downdrift erosion of groynes). Most assets are grouped at several distinct locations/beaches along the City's coastline. Given the density and high value of assets in some of these areas, both natural and built, they will be prioritised over the undeveloped and/or lower risk sections of the coastline for management. Areas with assets moving to elevated risk ratings in earlier timeframes will also be prioritised for planning and management.

To assist with risk evaluation and subsequent adaptation risk treatment, the coastline has been organised into several management units. As erosion is the predominant risk for the City, this coastal hazard will be the focus of prioritisation and treatment. Potential risk from inundation, however, is also considered and discussed where risk from this hazard is present.

4.2 Management Units

Six management Units (MU) have been established, based on the focused concentration of coastal assets and associated risk, as well as similar coastal features and shared sediment compartments. The MUs have been summarised below and are mapped in **Figure 1-2** and **Appendix A** in conjunction with individual assets and coastal erosion hazard lines. Individual risk and vulnerability tables (including aggregated risk and vulnerability) have been extracted and presented in the sub-sections below.

4.2.1 MU1 - Watermans Bay

MU1 extends from the City's northern boundary (aligned with Beach Road) to the southern end of Watermans Dog Beach (aligned with Hale Street). Within the 2122 erosion hazard extent, MU1 contains the following important natural assets:

- > Watermans Bay Beach;
- > Watermans Bay Dog Beach; and
- > Vegetated dunes.

And the important built assets:

- > Watermans GSC Revetment;
- > West Coast Drive, associated services and adjacent footpath (between Beach Road and Mary Street); and
- > Various parking, amenity and access infrastructure.

Risk ratings across timeframes for major assets and grouped minor assets, as well as the aggregated risk rating for MU1, are presented in **Table 4-1**. Aggregate risk for the MU is rated as high in the immediate to short term, associated with risk to beaches, in particular Watermans Bay Beach. The beaches are highly valued natural assets and naturally susceptible to coastal erosion. Risk to Watermans Bay beach is extreme by 2045,

when the risk to the nearby dog beach and vegetated dunes along the MU is high. Risk to the GSC revetment, which has the function of protecting valuable built assets, is high by 2045. Predictions of the longevity and performance of this structure are, however, uncertain.

Table 4-1 Key asset erosion risk ratings for MU1

Erosion Risk					
Timeframes	2022	2030	2045	2070	2122
Asset	Risk Ratings				
Watermans Bay Beach	High	High	Extreme	Extreme	Extreme
Watermans Bay Dog Beach	Medium	High	High	Extreme	Extreme
Watermans vegetated dunes	Medium	Medium	High	Extreme	Extreme
Watermans GSC revetment	Medium	Medium	High	High	High
West Coast Drive, footpath and services (Beach Rd to Mary St)	Very Low	Very Low	Medium	High	Extreme
Lookout and amenities, Watermans Bay	Low	Low	Medium	High	High
Car park and lookout, Margaret St	Medium	Medium	Medium	High	High
Watermans access, amenity and minor infrastructure	Medium	Medium	Medium	High	High
MU1 Aggregate Erosion Risk	High	High	Extreme	Extreme	Extreme

Vulnerability ratings across timeframes for major assets and grouped minor assets in MU1 are presented in **Table 4-2**. Most assets in the MU have comparable vulnerability ratings to their risk ratings, given that most built and natural assets are considered to have moderate adaptive capacity up to 2045. West Coast Drive is considered to have low adaptive capacity, which elevates its vulnerability ratings compared to risk ratings across timeframes, though its vulnerability is low until 2045.

Table 4-2 Key asset erosion vulnerability ratings for MU1

Erosion Vulnerability					
Timeframes	2022	2030	2045	2070	2122
Asset	Vulnerability Ratings				
Watermans Bay Beach	High	High	Very High	Very High	Very High
Watermans Bay Dog Beach	Medium	High	High	Very High	Very High
Watermans vegetated dunes	Medium	Medium	High	Very High	Very High
Watermans GSC revetment	Medium	Medium	High	Very High	Very High
West Coast Drive, footpath and services (Beach Rd to Mary St)	Low	Low	High	Very High	Very High
Lookout and amenities, Watermans Bay	Low	Low	Medium	High	High
Car park and lookout, Margaret St	Medium	Medium	Medium	High	High
Watermans access, amenity and minor infrastructure	Medium	Medium	Medium	High	High

4.2.2 MU2 - North Beach

MU2 extends from the northern end of North Beach Dog Beach (aligned with Hale Street) to the southern end of Hamersley Pool (aligned with Hamersley Street). Within the 2122 erosion hazard extent, MU2 contains the following important natural assets:

- > North Beach Dog Beach
- > North Beach (North)
- > North Beach (South); and
- > Vegetated dunes.

And the important built assets:

- > West Coast Drive, associated services and adjacent footpath (between Malcolm Street and James Street, and between Sorrento Street and Hamersley Street);
- > North Beach Jetty and Revetment; and
- > Various parking, access and amenity infrastructure.

Risk ratings across timeframes for major assets and grouped minor assets, as well as the aggregated risk rating for MU2, are presented in **Table 4-3**. Aggregate risk for the MU is rated as medium in the immediate term and high by 2030, associated with risk to highly valued beaches in the MU. Risk to vegetated dunes in the MU and sections of West Coast Highway become high by 2045, though further investigation (i.e., geotechnical) may lower these risk levels once the underlying geology is understood.

Table 4-3 Key asset erosion risk ratings for MU2

<u>Erosion Risk</u>					
Timeframes	2022	2030	2045	2070	2122
<u>Asset</u>	<u>Risk Ratings</u>				
North Beach Dog Beach	Medium	High	High	Extrem e	Extrem e
North Beach (North)	Medium	High	High	Extrem e	Extrem e
North Beach (South)	Medium	High	High	Extrem e	Extrem e
North Beach access, amenity and minor infrastructure	Medium	Medium	Mediu m	High	High
North Beach Vegetated Dunes	Medium	Medium	High	Extrem e	Extrem e
West Coast Drive, footpath and services (Malcolm St to James St)	Medium	Medium	High	Extrem e	Extrem e
North Beach Revetment and Jetty	Medium	Medium	High	High	High
West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Very Low	Very Low	Mediu m	High	Extrem e
MU2 Aggregate Erosion Risk	Medium	High	High	Extrem e	Extrem e

Vulnerability ratings across timeframes for major assets and grouped minor assets in MU2 are presented in **Table 4-4**. Most assets in the MU have comparable vulnerability ratings to their risk ratings, given that most built and natural assets are considered to have moderate adaptive capacity up to 2045. West Coast Drive is considered to have low adaptive capacity, which elevates its vulnerability ratings compared to risk ratings

across timeframes. This leads to a high vulnerability rating in the immediate to short term for the section of West Coast Drive between Malcolm Street and James Street.

Table 4-4 Key asset erosion vulnerability ratings for MU2

Erosion Vulnerability					
Timeframes	2022	2030	2045	2070	2122
Asset	Vulnerability Ratings				
North Beach Dog Beach	Medium	High	High	Very High	Very High
North Beach (North)	Medium	High	High	Very High	Very High
North Beach (South)	Medium	High	High	Very High	Very High
North Beach access, amenity and minor infrastructure	Medium	Medium	Medium	High	High
North Beach Vegetated Dunes	Medium	Medium	High	Very High	Very High
West Coast Drive, footpath and services (Malcolm St to James St)	High	High	Very High	Very High	Very High
North Beach Revetment and Jetty	Medium	Medium	High	High	High
West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Low	Low	High	Very High	Very High

4.2.3 MU3 - Mettams Pool

MU3 extends from the northern (aligned with Hamersley Street) to the southern (aligned with Bailey Street) end of Mettams Pool. Within the 2122 erosion hazard extent, MU3 contains the following important natural assets:

- > Mettams Pool Beach; and
- > Vegetated dunes.

And the important built assets:

- > West Coast Drive, associated services and adjacent footpath (between Sholl Avenue and Bailey Street); and
- > Various parking, access and amenity infrastructure.

Risk ratings across timeframes for major assets and grouped minor assets, as well as the aggregated risk rating for MU3, are presented in **Table 4-5**. Aggregate risk for the MU is rated as high in the immediate to short term, associated with risk to Mettams Pool beach. The beach is a highly valued natural asset and naturally susceptible to coastal erosion. Risk to the beach is extreme by 2045, when the risk to vegetated dunes along the MU also becomes high. Risk to the parking area adjacent Saunders Street and the Mettams Pool public toilets become high by 2030 and 2045, respectively, though further investigation (i.e., geotechnical) may lower these risk levels once the underlying geology is understood.

Table 4-5 Key asset erosion risk ratings for MU3

Erosion Risk					
Timeframes	2022	2030	2045	2070	2122
Asset	Risk Ratings				
Mettams Pool Beach	High	High	Extreme	Extreme	Extreme
Parking Area, Saunders St	Medium	High	High	Extreme	Extreme
Mettams Pool public toilets	Medium	Medium	High	Extreme	Extreme
West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Very Low	Very Low	Medium	High	Extreme
Mettams vegetated dunes	Medium	Medium	High	Extreme	Extreme
Mettams access, amenity and minor infrastructure	Medium	Medium	Medium	High	High
MU3 Aggregate Erosion Risk	High	High	Extreme	Extreme	Extreme

Vulnerability ratings across timeframes for major assets and grouped minor assets in MU3 are presented in **Table 4-6**. Most assets in the MU have comparable vulnerability ratings to their risk ratings, given that most built and natural assets are considered to have moderate adaptive capacity up to 2045. Built assets such as West Coast Drive and the Mettams Pool public toilets are considered to have low adaptive capacity, which elevates their vulnerability ratings compared to their risk ratings across timeframes. This leads to a high vulnerability rating in the immediate to short term for the Mettams Pool public toilets.

Table 4-6 Key asset erosion vulnerability ratings for MU3

<u>Erosion Vulnerability</u>						
	Timeframes	2022	2030	2045	2070	2122
<u>Asset</u>	<u>Vulnerability Ratings</u>					
Mettams Pool Beach	High	High	Very High	Very High	Very High	
Parking Area, Saunders St	Medium	High	Very High	Very High	Very High	
Mettams Pool public toilets	High	High	Very High	Very High	Very High	
West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Low	Low	High	Very High	Very High	
Mettams vegetated dunes	Medium	Medium	High	Very High	Very High	
Mettams access, amenity and minor infrastructure	Medium	Medium	Medium	High	High	

4.2.4 MU4 - Trigg Beach North

MU4 extends from the northern end of Bennion Beach (aligned with Bailey Street) to Trigg Point/Island. Within the 2122 erosion hazard extent, MU4 contains the following important natural assets:

- > Bennion Beach;
- > Trigg Beach Dog Beach;
- > Trigg Beach North; and
- > Vegetated dunes.

And the important built assets:

- > West Coast Drive, associated services and adjacent footpath (near Kathleen Street); and
- > Various parking, access and amenity infrastructure.

Risk ratings across timeframes for major assets and grouped minor assets, as well as the aggregated risk rating for MU4, are presented in **Table 4-7**. Aggregate risk for the MU is rated as medium in the immediate term and high by 2030, associated with risk to highly valued beaches in the MU. Risk to vegetated dunes in the MU also becomes high by 2045. Ongoing monitoring and observations of the beaches susceptibility to coastal hazards and SLR over the next decade are likely to improve the understanding of risk to this MU.

Table 4-7 Key asset erosion risk ratings for MU4

Erosion Risk					
Timeframes	2022	2030	2045	2070	2122
Asset	Risk Ratings				
Bennion Beach	Medium	High	High	Extreme	Extreme
Trigg Beach Dog Beach	Medium	High	High	Extreme	Extreme
Trigg Beach North	Medium	High	High	Extreme	Extreme
Trigg North Vegetated Dunes	Medium	Medium	High	Extreme	Extreme
West Coast Drive, footpath and services (near Kathleen St)	Very Low	Very Low	Medium	High	Extreme
Car park between Bennion and Bailey Streets	Very Low	Very Low	Medium	High	High
Parking area, Trigg Place	Very Low	Very Low	Medium	High	High
Trigg North access, amenity and minor infrastructure	Medium	Medium	Medium	High	High
MU4 Aggregate Erosion Risk	Medium	High	High	Extreme	Extreme

Vulnerability ratings across timeframes for major assets and grouped minor assets in MU4 are presented in **Table 4-8**. Most assets in the MU have comparable vulnerability ratings to their risk ratings, given that most built and natural assets are considered to have moderate adaptive capacity up to 2045. West Coast Drive is considered to have low adaptive capacity, which elevates its vulnerability ratings compared to risk ratings across timeframes, though its vulnerability is low until 2045.

Table 4-8 Key asset erosion vulnerability ratings for MU4

Erosion Vulnerability					
Timeframes	2022	2030	2045	2070	2122
Asset	Vulnerability Ratings				
Bennion Beach	Medium	High	High	Very High	Very High
Trigg Beach Dog Beach	Medium	High	High	Very High	Very High
Trigg Beach North	Medium	High	High	Very High	Very High
Trigg North Vegetated Dunes	Medium	Medium	High	Very High	Very High
West Coast Drive, footpath and services (near Kathleen St)	Low	Low	High	Very High	Very High
Car park between Bennion and Bailey Streets	Very Low	Very Low	High	Very High	Very High
Parking area, Trigg Place	Very Low	Very Low	Medium	High	High
Trigg North access, amenity and minor infrastructure	Medium	Medium	Medium	High	High

4.2.5 MU5 - Trigg Beach South

MU5 extends from Trigg Point/Island to the southern end of Trigg Beach. Within the 2122 erosion hazard extent, MU5 contains the following important natural assets:

- > Trigg Beach;
- > Trigg Beach South; and
- > Vegetated dunes (Bush Forever Site 308).

And the important built assets:

- > Extensive parking areas;
- > Trigg Beach Café;
- > Trigg Beach Surf Lifesaving Club buildings and facilities;
- > Surfing WA Headquarters building; and
- > Various access, amenity and recreational infrastructure.

Risk ratings across timeframes for major assets and grouped minor assets, as well as the aggregated risk rating for MU5, are presented in **Table 4-9**. Aggregate risk for the MU is rated as medium in the immediate term and high by 2030, associated with risk to highly valued beaches in the MU. Risk to vegetated dunes in the MU also becomes high by 2045. Ongoing monitoring and observations of the beaches susceptibility to coastal hazards and SLR over the next decade are likely to improve the understanding of risk to this MU, which recent experience suggests may not be as high as the outputs derived from this risk assessment. Major built assets in the MU are located away from the shoreline and are not considered to be at high risk until 2070.

Table 4-9 Key asset erosion risk ratings for MU5

Erosion Risk					
Timeframes	2022	2030	2045	2070	2122
Asset	Risk Ratings				
Trigg Beach	Medium	High	High	Extreme	Extreme
Trigg Beach South	Medium	High	High	Extreme	Extreme
Trigg South Vegetated Dunes (Bush Forever Site 308)	Medium	Medium	High	Extreme	Extreme
Trigg Surf Lookout	Low	Low	Medium	High	High
Parking area, Trigg Beach north	Very Low	Very Low	Medium	High	High
Trigg Beach SLSC building 1	Very Low	Very Low	Very Low	Medium	High
Trigg Beach SLSC building 2	Very Low	Very Low	Very Low	Medium	High
Trigg Beach Café	Very Low	Very Low	Medium	High	Extreme
Parking area, Trigg Beach central	Very Low	Very Low	Very Low	Medium	High
Trigg South access, amenity and minor infrastructure	Very Low	Medium	High	High	Extreme
Surfing WA Headquarters	Very Low	Very Low	Very Low	Medium	High
Trigg Beach Carpark	Very Low	Very Low	Very Low	Medium	High
MU5 Aggregate Erosion Risk	Medium	High	High	Extreme	Extreme

Vulnerability ratings across timeframes for major assets and grouped minor assets in MU5 are presented in **Table 4-10**. Most assets in the MU have comparable vulnerability ratings to their risk ratings, particularly

beaches that are considered to have high adaptive capacity up to 2045. Vegetated dunes have a very high vulnerability by 2045, as they are confined by landward infrastructure for much of the coastline and their adaptive capacity reduces to low at this timeframe. The significant built infrastructure in this MU is considered to have low adaptive capacity, elevating vulnerability levels. However, this built infrastructure is considered to have low vulnerability until 2045 or 2070.

Table 4-10 Key asset erosion vulnerability ratings for MU5

Erosion Vulnerability					
Timeframes	2022	2030	2045	2070	2122
Asset	Vulnerability Ratings				
Trigg Beach	Medium	High	High	Very High	Very High
Trigg Beach South	Medium	High	High	Very High	Very High
Trigg South Vegetated Dunes (Bush Forever Site 308)	Medium	Medium	Very High	Very High	Very High
Trigg Surf Lookout	Low	Low	Medium	High	High
Parking area, Trigg Beach north	Very Low	Very Low	Medium	High	High
Trigg Beach SLSC building 1	Low	Low	Low	High	Very High
Trigg Beach SLSC building 2	Low	Low	Low	High	Very High
Trigg Beach Café	Low	Low	High	Very High	Very High
Parking area, Trigg Beach central	Very Low	Very Low	Very Low	High	Very High
Trigg South access, amenity and minor infrastructure	Very Low	Medium	High	High	Very High
Surfing WA Headquarters	Low	Low	Low	High	Very High
Trigg Beach Carpark	Very Low	Very Low	Very Low	Medium	High

4.2.6 MU6 - Scarborough Beach

MU6 extends from the northern end of Scarborough Beach to the southern extent of the City's boundary at Peasholm Dog Beach. Within the 2122 erosion hazard extent, MU6 contains the following important natural assets:

- > Scarborough Beach North;
- > Scarborough Beach;
- > Brighton Beach;
- > Peasholm Dog Beach; and
- > Vegetated dunes (Bush Forever Sites 308 and 310).

And the important built assets:

- > Extensive parking areas;
- > Scarborough Amphitheatre;
- > Scarborough Surf Lifesaving Club buildings and facilities;
- > Scarborough Beach Pool and Restaurant; and
- > Various access, amenity and recreational infrastructure/areas.

Risk ratings across timeframes for major assets and grouped minor assets, as well as the aggregated risk rating for MU6, are presented in **Table 4-11**. Aggregate risk for the MU is rated as medium in the immediate term and high by 2030, associated with risk to highly valued beaches in the MU. Risk to vegetated dunes in the MU also becomes high by 2030. Ongoing monitoring and observations of the beaches susceptibility to coastal hazards and SLR over the next decade are likely to improve the understanding of risk to this MU. Major built assets in the MU are located away from the shoreline and are not considered to be at high risk until 2070.

Table 4-11 Key asset erosion risk ratings for MU6

Erosion Risk					
Timeframes	2022	2030	2045	2070	2122
Asset	Risk Ratings				
Scarborough Beach North	Medium	High	High	Extreme	Extreme
Scarborough Beach	Medium	High	High	Extreme	Extreme
Brighton Beach	Medium	High	High	Extreme	Extreme
Peasholm Beach	Medium	High	High	Extreme	Extreme
Scarborough Vegetated Dunes (Bush Forever Sites 308/310)	Medium	High	High	Extreme	Extreme
Scarborough Beach Carpark	Very Low	Very Low	Very Low	Medium	High
Scarborough Amphitheatre	Medium	Medium	Medium	High	High
Scarboro SLSC	Medium	Medium	Medium	High	High
Scarborough Beach Pool	Very Low	Very Low	Medium	High	Extreme
Scarborough Beach Restaurant	Very Low	Very Low	Medium	High	Extreme
Scarborough Playground and Skate Park	Very Low	Very Low	Medium	High	High
Scarborough Beach carpark south	Very Low	Very Low	Very Low	Medium	High
Brighton Beach carpark	Very Low	Very Low	Very Low	Medium	High
Scarborough access, amenity and minor infrastructure	Very Low	Medium	High	High	Extreme
MU6 Aggregate Erosion Risk	Medium	High	High	Extreme	Extreme

Vulnerability ratings across timeframes for major assets and grouped minor assets in MU6 are presented in **Table 4-12**. Most assets in the MU have comparable vulnerability ratings to their risk ratings, particularly beaches that are considered to have moderate to high adaptive capacity up to 2045. Vegetated dunes have a very high vulnerability by 2045, as they are confined by landward infrastructure for much of the coastline and their adaptive capacity reduces to low at this timeframe. The significant built infrastructure in this MU is considered to have low adaptive capacity, elevating vulnerability levels. However, most of this built infrastructure is considered to have low vulnerability until 2045 or 2070.

Table 4-12 Key asset erosion vulnerability ratings for MU6

Erosion Vulnerability					
Timeframes	2022	2030	2045	2070	2122
Asset	Vulnerability Ratings				
Scarborough Beach North	Medium	High	High	Very High	Very High
Scarborough Beach	Medium	High	High	Very High	Very High
Brighton Beach	Medium	High	High	Very High	Very High
Peasholm Beach	Medium	High	High	Very High	Very High
Scarborough Vegetated Dunes (Bush Forever Sites 308/310)	Medium	High	Very High	Very High	Very High
Scarborough Beach Carpark	Very Low	Very Low	Very Low	Medium	High
Scarborough Amphitheatre	Medium	Medium	Medium	Very High	Very High
Scarboro SLSC	Medium	Medium	High	Very High	Very High
Scarborough Beach Pool	Low	Low	High	Very High	Very High
Scarborough Beach Restaurant	Low	Low	High	Very High	Very High
Scarborough Playground and Skate Park	Low	Low	High	Very High	Very High
Scarborough Beach carpark south	Very Low	Very Low	Very Low	Medium	High
Brighton Beach carpark	Very Low	Very Low	Very Low	Medium	High
Scarborough access, amenity and minor infrastructure	Very Low	Medium	High	High	Very High

4.3 Coastal Controls

Coastal controls that influence risk levels are the various revetments located in the north of the study area. The only one of these that is extensive enough to influence the risk assessment is the Watermans GSC revetment. This structure has the effect of reducing the likelihood of impact to assets on its landward side, including vegetated dunes, a portion of West Coast Highway and the Watermans Bay lookout. It also reduces the adaptive capacity of the beach in front of it, which increases its vulnerability (but does not affect risk).

Nourishment that has occurred to date has not been incorporated to reduce risk, as the longevity (timeframe) of such coastal management cannot be confirmed. The option of ongoing protective nourishment will be considered, however, during the *Risk Treatment* stage of the CHRMAP.

Comparison of risk for affected assets with and without the Watermans GSC Revetment is presented in **Table 3-1**. It demonstrates how risk is generally lowered across timeframes by the revetment, for assets located landward.

Table 4-13 Comparison of risk ratings for assets - controlled vs uncontrolled

Erosion Risk					
Timeframes	2022	2030	2045	2070	2122
Asset	Risk Ratings				
Watermans Bay Beach	High	High	Extreme	Extreme	Extreme
Uncontrolled - Watermans Bay Beach	High	High	Extreme	Extreme	Extreme

Watermans vegetated dunes	Medium	Medium	High	Extreme	Extreme
<u>Uncontrolled</u> - Watermans vegetated dunes	Medium	High	High	Extreme	Extreme
West Coast Drive, footpath and services (Beach Rd to Mary St)	Very Low	Very Low	Medium	High	Extreme
<u>Uncontrolled</u> - West Coast Drive, footpath and services (Beach Rd to Mary St)	Medium	Medium	High	Extreme	Extreme
Lookout and amenities, Watermans Bay	Low	Low	Medium	High	High
<u>Uncontrolled</u> - Lookout and amenities, Watermans Bay	Medium	Medium	Medium	High	High

Comparison of vulnerability for affected assets with and without the Watermans GSC Revetment is presented in **Table 3-2**. The reduced adaptive capacity of the beach does not lead to changed vulnerability ratings for this natural asset, though its vulnerability remains high in the immediate to short term.

Table 4-14 Comparison of vulnerability ratings for assets - controlled vs uncontrolled

<u>Erosion Risk</u>						
	Timeframes	2022	2030	2045	2070	2122
<u>Asset</u>		<u>Risk Ratings</u>				
Watermans Bay Beach		High	High	Very High	Very High	Very High
<u>Uncontrolled</u> - Watermans Bay Beach		High	High	Very High	Very High	Very High
Watermans vegetated dunes		Medium	Medium	High	Very High	Very High
<u>Uncontrolled</u> - Watermans vegetated dunes		Medium	High	High	Very High	Very High
West Coast Drive, footpath and services (Beach Rd to Mary St)		Low	Low	High	Very High	Very High
<u>Uncontrolled</u> - West Coast Drive, footpath and services (Beach Rd to Mary St)		High	High	Very High	Very High	Very High
Lookout and amenities, Watermans Bay		Low	Low	Medium	High	High
<u>Uncontrolled</u> - Lookout and amenities, Watermans Bay		Medium	Medium	Medium	High	High

4.4 Priorities for Treatment

Based on the outcomes of the risk and vulnerability assessment, MUs have been classified as high, medium or low priority for treatment, as follows:

- > High priority (high aggregate risk level at present), requiring further investigation in the immediate term and, depending on the outcomes, active management in the short term:
 - MU1 – Watermans Bay; and
 - MU3 – Mettams Pool.
- > Medium priority (medium aggregate risk level at present), requiring further investigation in the immediate to short term and, depending on the outcomes, active management in the short to medium term:
 - MU2 – North Beach.
 - MU4 – Trigg Beach North;
 - MU5 – Trigg Beach South; and
 - MU6 – Scarborough Beach.

5 Conclusions and Next Steps

The risk and vulnerability assessments have identified assets and coastal areas (divided into MUs) that are vulnerable to coastal erosion and inundation hazards at present day (2022) and at various timeframes up to the 2122 planning horizon. In general, coastal erosion leads to higher vulnerability than inundation for assets due to the nature of the City's coastline (sandy and/or elevated throughout) and more permanent (higher consequence) nature of coastal erosion impacts. Management of coastal erosion hazards will be the focus of risk treatment.

High priority MUs are those in north of the study area, where highly valued beaches are vulnerable due to their inability to naturally adapt. Erosion in this area also creates risk for access infrastructure, with significant implications for reputation and service delivery.

The next step for the City's CHRMAP is the *Risk Treatment* stage (Stage 5), which has been documented in the fourth chapter report (Cardno, 2023c). The key activities and outcomes of this stage include:

- > Developing risk treatment options for vulnerable areas of the City's coastline following the risk management and adaption hierarchy, focusing on mitigation of the threat of coastal erosion;
- > Multi-criteria analysis and cost benefit analysis to assess the identified risk treatment options; and
- > Developing adaption pathways which contain one or more risk treatment option and triggers for their implementation.

6 References

- Cardno (2023a) *City of Stirling Coastal Hazard Risk Management and Adaptation Plan – Chapter 1: Establish the Context*. Prepared for City of Stirling on 23/06/2023.
- Cardno (2023b) *City of Stirling Coastal Hazard Risk Management and Adaptation Plan – Chapter 2: Risk Identification*. Prepared for City of Stirling on 23/06/2023.
- Cardno (2023c) *City of Stirling Coastal Hazard Risk Management and Adaptation Plan – Chapter 4: Risk Treatment*. Prepared for City of Stirling on 23/06/2023.
- Cardno (2023d) *City of Stirling Coastal Hazard Risk Management and Adaptation Plan – Chapter 5: Implementation*. Prepared for City of Stirling on 23/06/2023.
- City of Stirling (2020) *City of Stirling Risk Management Framework*. Published November 2020.
- Cooper, J. A. G & Pilkey, O. H (2004) *Sea-level rise and shoreline retreat: time to abandon the Bruun Rule*. *Global and Planetary Change* 43 (2004) 157 – 171
- DoT (2010) *Sea Level Change in Western Australia Application to Coastal Planning*. Department of Transport, Perth, Western Australia.
- IPCC (2007) *Climate Change 2007: The Physical Science Basis*. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M.Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
- IPCC (2021) *Climate Change 2021: The Physical Science Basis*. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press. In Press.
- Rawlinsons (2021) *Rawlinsons Australian Construction Handbook 2021*. Published by Rawlinsons (W.A.), Quantity Surveyors and Construction Cost Consultants.
- Rosati, J. D., Dean, R. G. & Walton, T. L. (2013) *The modified Bruun Rule extended for landward transport*. *Marine Geology* 340 (2013) 71-81.
- Standards Australia (2013) *Climate change adaption for settlements and infrastructure – A risk based approach* (AS 5334-2013)
- Stul T, Gozzard JR, Eliot IG and Eliot MJ (2015) *Coastal Sediment Cells for the Vlamingh Region between Cape Naturaliste and Moore River, Western Australia*. Report prepared by Seashore Engineering Pty Ltd and Geological Survey of Western Australia for the Western Australian Department of Transport, Fremantle.
- WAPC (2003) *Statement of Planning Policy No. 2: Environment and Natural Resources Policy*. Published by the Western Australian Planning Commission, Perth, Western Australia.
- WAPC (2006a) *Statement of Planning Policy No. 3: Urban Growth and Settlement*. Published by the Western Australian Planning Commission, Perth, Western Australia.
- WAPC (2006b) *State Planning Policy No. 3.4 – Natural Hazards and Disasters*. Published by the Western Australian Planning Commission, Perth, Western Australia.
- WAPC (2010) *State Planning Policy No. 2.8 – Bushland policy for the Perth Metropolitan Region*. Published by the Western Australian Planning Commission, Perth, Western Australia.
- WAPC (2013) *State Planning Policy No. 2.6: State Coastal Planning Policy*. Published by the Western Australian Planning Commission, Perth, Western Australia.

WAPC (2019) *Coastal Hazard Risk Management and Adaptation Planning Guidelines*. Published by the Western Australian Planning Commission, Perth, WA.

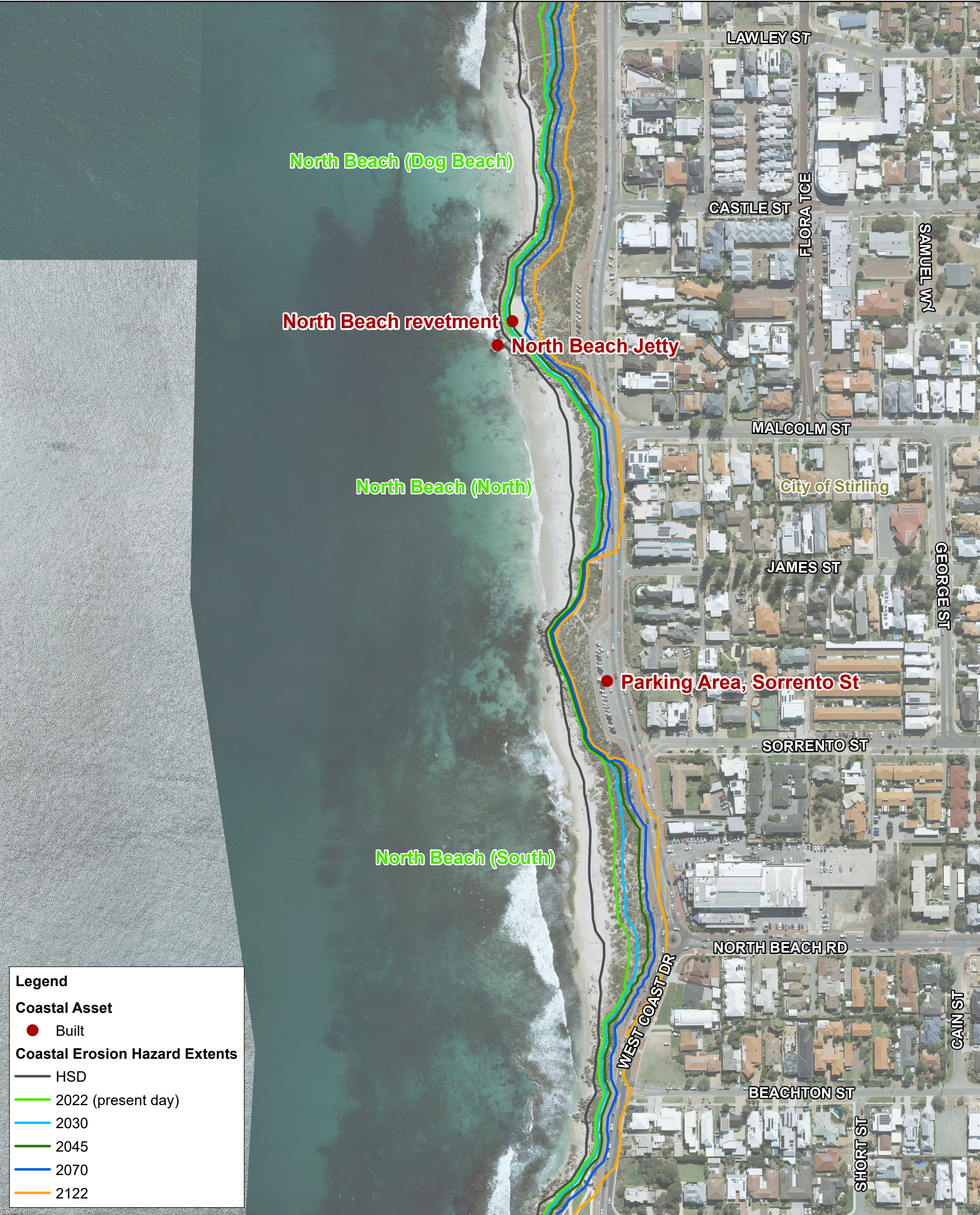
WAPC (2020) *State Coastal Planning Policy Guidelines*. November 2020. Prepared by the Department of Planning, Lands and Heritage on behalf of the Western Australian Planning Commission. Published version February 2021.

APPENDIX

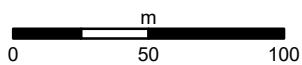
A

MANAGEMENT UNITS AND KEY ASSETS





1:2,790 Scale at A3



Coastal Erosion Hazard Extents & Major Assets MU2 - North Beach

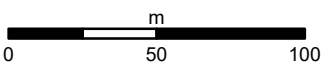
CITY OF STIRLING CHRMAP
FIGURE A-2



Map Produced by Cardno (WA) Pty Ltd
Date: 2022-07-27
Coordinate System: GDA 1994 MGA Zone 50
Project: CW1195500
Map: CW1195500_GS_010_MU_ZONES_ManagedRetreat.mxd 01
Aerial imagery supplied by Metromap (2022)



1:2,550 Scale at A3

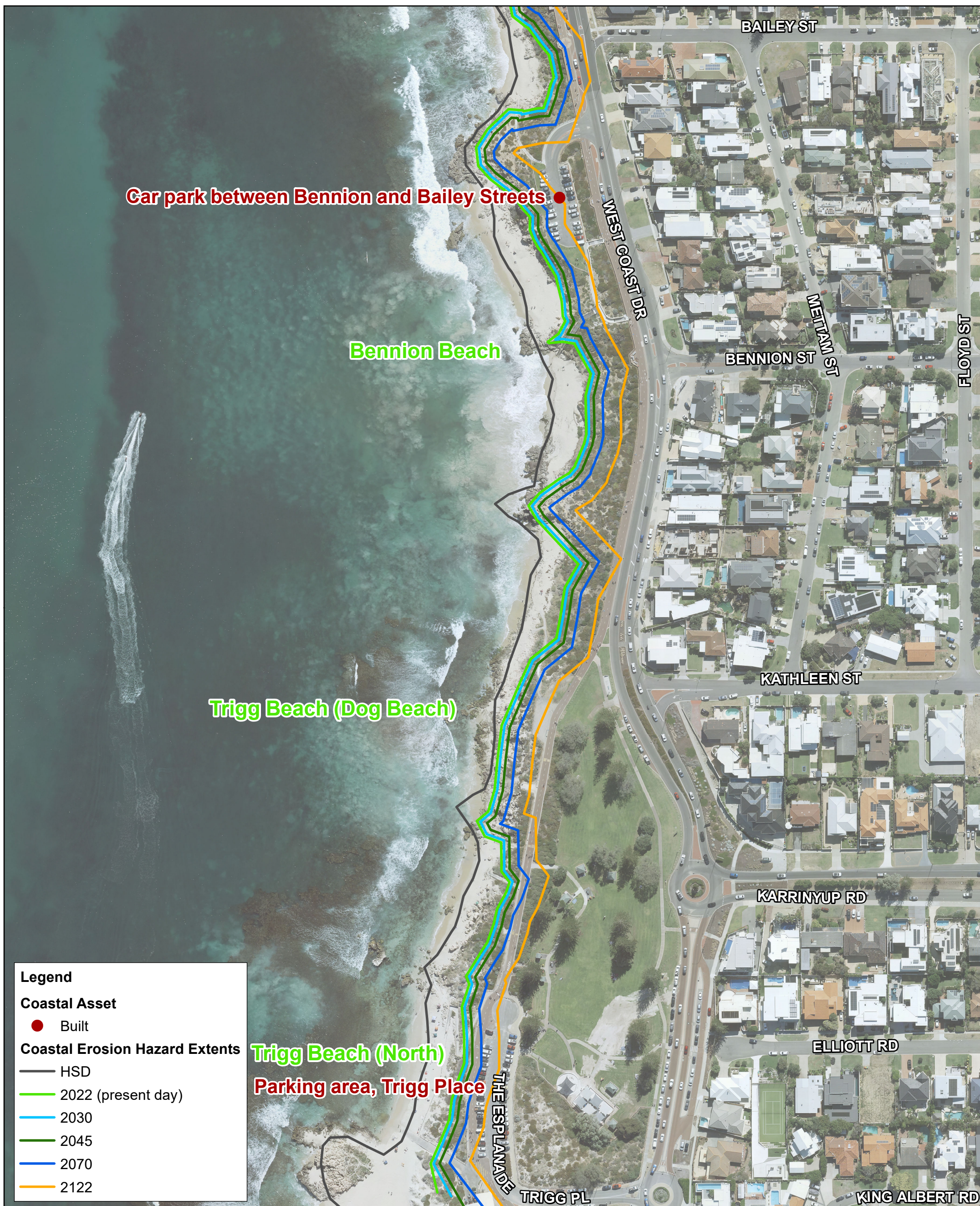


Coastal Erosion Hazard Extents & Major Assets MU3 - Mettams Pool

CITY OF STIRLING CHRMAP
FIGURE A-3

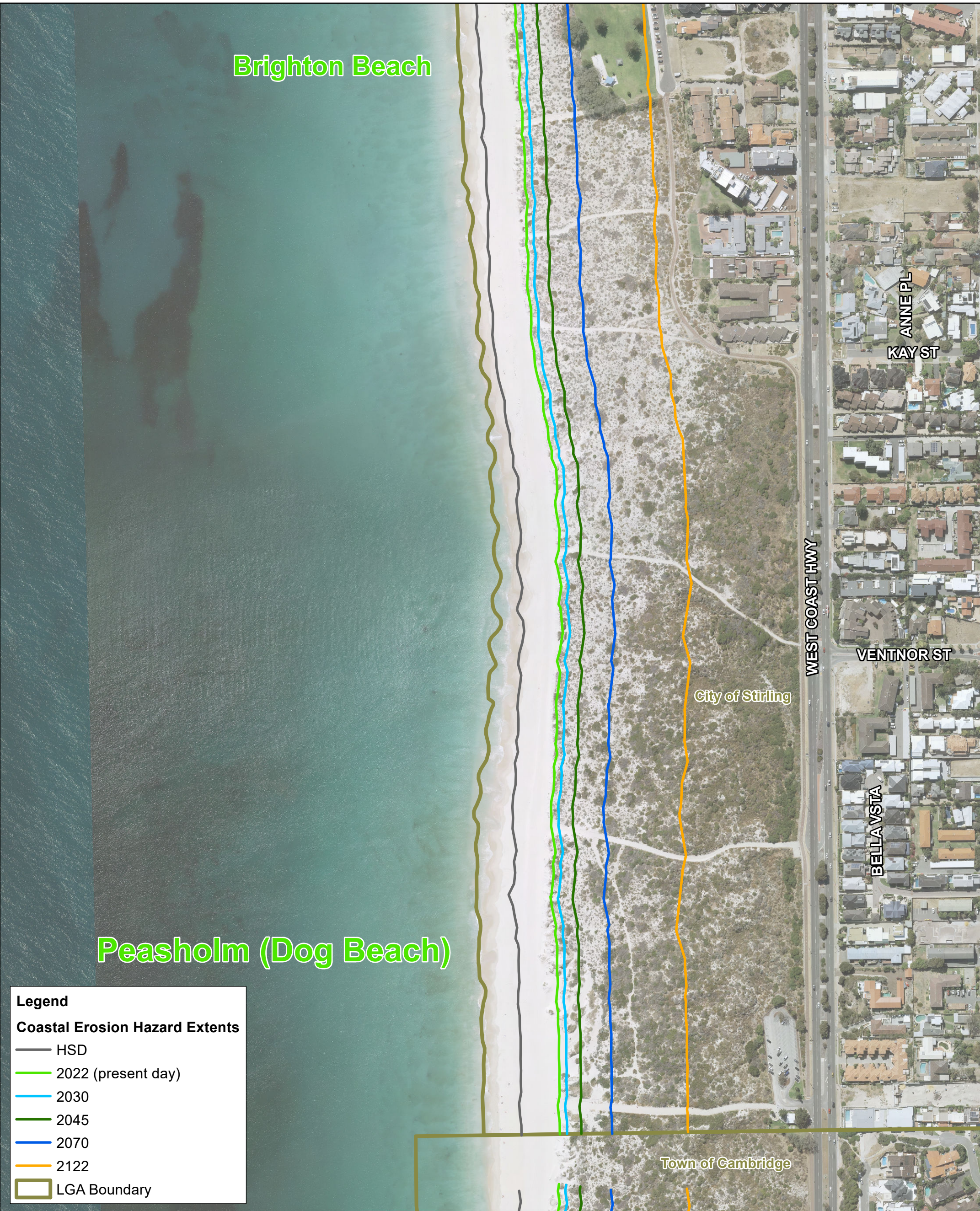


Map Produced by Cardno (WA) Pty Ltd
Date: 2022-07-27
Coordinate System: GDA 1994 MGA Zone 50
Project: CW1195500
Map: CW1195500_GS_010_MU_ZONES_ManagedRetreat.mxd 01
Aerial imagery supplied by Metromap (2022)









APPENDIX

B

ASSIGNED EROSION LIKELIHOOD RATINGS

CHRMAP Asset ID	Asset	Erosion Likelihood Inputs				
		Present Day (2022)	2030	2045	2070	2122
		Likelihood (Prevailing)				
MU1-01	Watermans Bay Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU1-01	Uncontrolled - Watermans Bay Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU1-02	Watermans Bay Dog Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU1-03	Watermans vegetated dunes	Rare	Rare	Possible	Almost Certain	Almost Certain
MU1-03	Uncontrolled - Watermans vegetated dunes	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU1-04	Watermans GSC revetment	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Near Impossible	Near Impossible	Rare	Unlikely	Likely
MU1-06	Lookout and amenities, Watermans Bay	Rare	Rare	Unlikely	Likely	Likely
MU1-05	Uncontrolled - West Coast Drive, footpath and services (Beach Rd to Mary St)	Rare	Rare	Unlikely	Likely	Likely
MU1-06	Uncontrolled - Lookout and amenities, Watermans Bay	Unlikely	Unlikely	Possible	Almost Certain	Almost Certain
MU1-07	Car park and lookout, Margaret St	Rare	Rare	Unlikely	Likely	Likely
MU1-08	Watermans access, amenity and minor infrastructure	Rare	Rare	Unlikely	Likely	Likely
MU2-01	North Beach Dog Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU2-02	North Beach (North)	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU2-03	North Beach (South)	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU2-04	North Beach access, amenity and minor infrastructure	Rare	Rare	Unlikely	Likely	Likely
MU2-05	North Beach Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Rare	Rare	Unlikely	Likely	Likely
MU2-07	North Beach Revetment and Jetty	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Near Impossible	Near Impossible	Rare	Possible	Likely
MU3-01	Mettams Pool Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU3-02	Parking Area, Saunders St	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU3-03	Mettams Pool public toilets	Unlikely	Possible	Possible	Almost Certain	Almost Certain
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Near Impossible	Near Impossible	Rare	Possible	Likely
MU3-05	Mettams vegetated dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU3-06	Mettams access, amenity and minor infrastructure	Rare	Rare	Unlikely	Likely	Likely
MU4-01	Bennion Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU4-02	Trigg Beach Dog Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU4-03	Trigg Beach North	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU4-04	Trigg North Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Near Impossible	Near Impossible	Rare	Possible	Likely
MU4-06	Car park between Bennion and Bailey Streets	Near Impossible	Near Impossible	Rare	Possible	Likely
MU4-07	Parking area, Trigg Place	Near Impossible	Near Impossible	Rare	Possible	Likely
MU4-08	Trigg North access, amenity and minor infrastructure	Rare	Rare	Unlikely	Likely	Likely
MU5-01	Trigg Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU5-02	Trigg Beach South	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU5-03	Trigg South Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU5-04	Trigg Surf Lookout	Rare	Rare	Unlikely	Likely	Likely
MU5-05	Parking area, Trigg Beach north	Near Impossible	Near Impossible	Rare	Possible	Likely
MU5-06	Trigg Beach SLSC building 1	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU5-07	Trigg Beach SLSC building 2	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU5-08	Trigg Beach Café	Near Impossible	Near Impossible	Rare	Possible	Likely
MU5-09	Parking area, Trigg Beach central	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU5-10	Trigg South access, amenity and minor infrastructure	Near Impossible	Rare	Possible	Likely	Almost Certain
MU5-11	Surfing WA Headquarters	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU5-12	Trigg Beach Carpark	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU6-01	Scarborough Beach North	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU6-02	Scarborough Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU6-03	Brighton Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU6-04	Peasholm Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU6-05	Scarborough Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU6-06	Scarborough Beach Carpark	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU6-07	Scarborough Amphitheatre	Rare	Rare	Unlikely	Likely	Likely
MU6-08	Scarboro SLSC	Rare	Rare	Unlikely	Likely	Likely
MU6-09	Scarborough Beach Pool	Near Impossible	Near Impossible	Rare	Possible	Likely
MU6-10	Scarborough Beach Restaurant	Near Impossible	Near Impossible	Rare	Possible	Likely
MU6-11	Scarborough Playground and Skate Park	Near Impossible	Near Impossible	Rare	Possible	Likely
MU6-12	Scarborough Beach carpark south	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU6-13	Brighton Beach carpark	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU6-14	Scarborough access, amenity and minor infrastructure	Near Impossible	Rare	Possible	Likely	Almost Certain

CHRMAP Asset ID	Asset	Erosion Likelihood Inputs				
		Present Day (2022)	2030	2045	2070	2122
		Likelihood (Probability)				
MU1-01	Watermans Bay Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU1-01	Uncontrolled - Watermans Bay Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU1-02	Watermans Bay Dog Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU1-03	Watermans vegetated dunes	Rare	Rare	Possible	Almost Certain	Almost Certain
MU1-03	Uncontrolled - Watermans vegetated dunes	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU1-04	Watermans GSC revetment	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Near Impossible	Near Impossible	Rare	Unlikely	Likely
MU1-06	Lookout and amenities, Watermans Bay	Rare	Rare	Unlikely	Likely	Likely
MU1-05	Uncontrolled - West Coast Drive, footpath and services (Beach Rd to Mary St)	Rare	Rare	Unlikely	Likely	Likely
MU1-06	Uncontrolled - Lookout and amenities, Watermans Bay	Unlikely	Unlikely	Possible	Almost Certain	Almost Certain
MU1-07	Car park and lookout, Margaret St	Rare	Rare	Unlikely	Likely	Likely
MU1-08	Watermans access, amenity and minor infrastructure	Rare	Rare	Unlikely	Likely	Likely
MU2-01	North Beach Dog Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU2-02	North Beach (North)	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU2-03	North Beach (South)	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU2-04	North Beach access, amenity and minor infrastructure	Rare	Rare	Unlikely	Likely	Likely
MU2-05	North Beach Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Rare	Rare	Unlikely	Likely	Likely
MU2-07	North Beach Revetment and Jetty	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Near Impossible	Near Impossible	Rare	Possible	Likely
MU3-01	Mettams Pool Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU3-02	Parking Area, Saunders St	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU3-03	Mettams Pool public toilets	Unlikely	Unlikely	Possible	Almost Certain	Almost Certain
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Near Impossible	Near Impossible	Rare	Possible	Likely
MU3-05	Mettams vegetated dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU3-06	Mettams access, amenity and minor infrastructure	Rare	Rare	Unlikely	Likely	Likely
MU4-01	Bennion Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU4-02	Trigg Beach Dog Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU4-03	Trigg Beach North	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU4-04	Trigg North Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Near Impossible	Near Impossible	Rare	Possible	Likely
MU4-06	Car park between Bennion and Bailey Streets	Near Impossible	Near Impossible	Rare	Possible	Likely
MU4-07	Parking area, Trigg Place	Near Impossible	Near Impossible	Rare	Possible	Likely
MU4-08	Trigg North access, amenity and minor infrastructure	Rare	Rare	Unlikely	Likely	Likely
MU5-01	Trigg Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU5-02	Trigg Beach South	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU5-03	Trigg South Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU5-04	Trigg Surf Lookout	Rare	Rare	Unlikely	Likely	Likely
MU5-05	Parking area, Trigg Beach north	Near Impossible	Near Impossible	Rare	Possible	Likely
MU5-06	Trigg Beach SLSC building 1	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU5-07	Trigg Beach SLSC building 2	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU5-08	Trigg Beach Café	Near Impossible	Near Impossible	Rare	Possible	Likely
MU5-09	Parking area, Trigg Beach central	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU5-10	Trigg South access, amenity and minor infrastructure	Near Impossible	Rare	Possible	Likely	Almost Certain
MU5-11	Surfing WA Headquarters	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU5-12	Trigg Beach Carpark	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU6-01	Scarborough Beach North	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU6-02	Scarborough Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU6-03	Brighton Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU6-04	Peasholm Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU6-05	Scarborough Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU6-06	Scarborough Beach Carpark	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU6-07	Scarborough Amphitheatre	Rare	Rare	Unlikely	Likely	Likely
MU6-08	Scarboro SLSC	Rare	Rare	Unlikely	Likely	Likely
MU6-09	Scarborough Beach Pool	Near Impossible	Near Impossible	Rare	Possible	Likely
MU6-10	Scarborough Beach Restaurant	Near Impossible	Near Impossible	Rare	Possible	Likely
MU6-11	Scarborough Playground and Skate Park	Near Impossible	Near Impossible	Rare	Possible	Likely
MU6-12	Scarborough Beach carpark south	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU6-13	Brighton Beach carpark	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU6-14	Scarborough access, amenity and minor infrastructure	Near Impossible	Rare	Possible	Likely	Almost Certain

CHRMAP Asset ID	Asset	Erosion Likelihood Inputs				
		Present Day (2022)	2030	2045	2070	2122
		Likelihood (Timeframe)				
MU1-01	Watermans Bay Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU1-01	Uncontrolled - Watermans Bay Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU1-02	Watermans Bay Dog Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU1-03	Watermans vegetated dunes	Rare	Rare	Possible	Almost Certain	Almost Certain
MU1-03	Uncontrolled - Watermans vegetated dunes	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU1-04	Watermans GSC revetment	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Near Impossible	Near Impossible	Rare	Unlikely	Likely
MU1-06	Lookout and amenities, Watermans Bay	Rare	Rare	Unlikely	Likely	Likely
MU1-05	Uncontrolled - West Coast Drive, footpath and services (Beach Rd to Mary St)	Rare	Rare	Unlikely	Likely	Likely
MU1-06	Uncontrolled - Lookout and amenities, Watermans Bay	Unlikely	Unlikely	Possible	Almost Certain	Almost Certain
MU1-07	Car park and lookout, Margaret St	Rare	Rare	Unlikely	Likely	Likely
MU1-08	Watermans access, amenity and minor infrastructure	Rare	Rare	Unlikely	Likely	Likely
MU2-01	North Beach Dog Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU2-02	North Beach (North)	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU2-03	North Beach (South)	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU2-04	North Beach access, amenity and minor infrastructure	Rare	Rare	Unlikely	Likely	Likely
MU2-05	North Beach Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Rare	Rare	Unlikely	Likely	Likely
MU2-07	North Beach Revetment and Jetty	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Near Impossible	Near Impossible	Rare	Possible	Likely
MU3-01	Mettams Pool Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU3-02	Parking Area, Saunders St	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU3-03	Mettams Pool public toilets	Unlikely	Unlikely	Possible	Almost Certain	Almost Certain
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Near Impossible	Near Impossible	Rare	Possible	Likely
MU3-05	Mettams vegetated dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU3-06	Mettams access, amenity and minor infrastructure	Rare	Rare	Unlikely	Likely	Likely
MU4-01	Bennion Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU4-02	Trigg Beach Dog Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU4-03	Trigg Beach North	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU4-04	Trigg North Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Near Impossible	Near Impossible	Rare	Possible	Likely
MU4-06	Car park between Bennion and Bailey Streets	Near Impossible	Near Impossible	Rare	Possible	Likely
MU4-07	Parking area, Trigg Place	Near Impossible	Near Impossible	Rare	Possible	Likely
MU4-08	Trigg North access, amenity and minor infrastructure	Rare	Rare	Unlikely	Likely	Likely
MU5-01	Trigg Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU5-02	Trigg Beach South	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU5-03	Trigg South Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU5-04	Trigg Surf Lookout	Rare	Rare	Unlikely	Likely	Likely
MU5-05	Parking area, Trigg Beach north	Near Impossible	Near Impossible	Rare	Possible	Likely
MU5-06	Trigg Beach SLSC building 1	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU5-07	Trigg Beach SLSC building 2	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU5-08	Trigg Beach Café	Near Impossible	Near Impossible	Rare	Possible	Likely
MU5-09	Parking area, Trigg Beach central	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU5-10	Trigg South access, amenity and minor infrastructure	Near Impossible	Rare	Possible	Likely	Almost Certain
MU5-11	Surfing WA Headquarters	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU5-12	Trigg Beach Carpark	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU6-01	Scarborough Beach North	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU6-02	Scarborough Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU6-03	Brighton Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU6-04	Peasholm Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU6-05	Scarborough Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU6-06	Scarborough Beach Carpark	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU6-07	Scarborough Amphitheatre	Rare	Rare	Unlikely	Likely	Likely
MU6-08	Scarboro SLSC	Rare	Rare	Unlikely	Likely	Likely
MU6-09	Scarborough Beach Pool	Near Impossible	Near Impossible	Rare	Possible	Likely
MU6-10	Scarborough Beach Restaurant	Near Impossible	Near Impossible	Rare	Possible	Likely
MU6-11	Scarborough Playground and Skate Park	Near Impossible	Near Impossible	Rare	Possible	Likely
MU6-12	Scarborough Beach carpark south	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU6-13	Brighton Beach carpark	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU6-14	Scarborough access, amenity and minor infrastructure	Near Impossible	Rare	Possible	Likely	Almost Certain

CHRMAP Asset ID	Asset	Erosion Likelihood Inputs				
		Present Day (2022)	2030	2045	2070	2122
		Likelihood (Experience)				
MU1-01	Watermans Bay Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU1-01	Uncontrolled - Watermans Bay Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU1-02	Watermans Bay Dog Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU1-03	Watermans vegetated dunes	Rare	Rare	Possible	Almost Certain	Almost Certain
MU1-03	Uncontrolled - Watermans vegetated dunes	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU1-04	Watermans GSC revetment	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Near Impossible	Near Impossible	Rare	Unlikely	Likely
MU1-06	Lookout and amenities, Watermans Bay	Rare	Rare	Unlikely	Likely	Likely
MU1-05	Uncontrolled - West Coast Drive, footpath and services (Beach Rd to Mary St)	Rare	Rare	Unlikely	Likely	Likely
MU1-06	Uncontrolled - Lookout and amenities, Watermans Bay	Unlikely	Unlikely	Possible	Almost Certain	Almost Certain
MU1-07	Car park and lookout, Margaret St	Rare	Rare	Unlikely	Likely	Likely
MU1-08	Watermans access, amenity and minor infrastructure	Rare	Rare	Unlikely	Likely	Likely
MU2-01	North Beach Dog Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU2-02	North Beach (North)	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU2-03	North Beach (South)	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU2-04	North Beach access, amenity and minor infrastructure	Rare	Rare	Unlikely	Likely	Likely
MU2-05	North Beach Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Rare	Rare	Unlikely	Likely	Likely
MU2-07	North Beach Revetment and Jetty	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hammersley St)	Near Impossible	Near Impossible	Rare	Possible	Likely
MU3-01	Mettams Pool Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU3-02	Parking Area, Saunders St	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU3-03	Mettams Pool public toilets	Unlikely	Possible	Possible	Almost Certain	Almost Certain
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Near Impossible	Near Impossible	Rare	Possible	Likely
MU3-05	Mettams vegetated dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU3-06	Mettams access, amenity and minor infrastructure	Rare	Rare	Unlikely	Likely	Likely
MU4-01	Bennion Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU4-02	Trigg Beach Dog Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU4-03	Trigg Beach North	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU4-04	Trigg North Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Near Impossible	Near Impossible	Rare	Possible	Likely
MU4-06	Car park between Bennion and Bailey Streets	Near Impossible	Near Impossible	Rare	Possible	Likely
MU4-07	Parking area, Trigg Place	Near Impossible	Near Impossible	Rare	Possible	Likely
MU4-08	Trigg North access, amenity and minor infrastructure	Rare	Rare	Unlikely	Likely	Likely
MU5-01	Trigg Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU5-02	Trigg Beach South	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU5-03	Trigg South Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU5-04	Trigg Surf Lookout	Rare	Rare	Unlikely	Likely	Likely
MU5-05	Parking area, Trigg Beach north	Near Impossible	Near Impossible	Rare	Possible	Likely
MU5-06	Trigg Beach SLSC building 1	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU5-07	Trigg Beach SLSC building 2	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU5-08	Trigg Beach Café	Near Impossible	Near Impossible	Rare	Possible	Likely
MU5-09	Parking area, Trigg Beach central	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU5-10	Trigg South access, amenity and minor infrastructure	Near Impossible	Rare	Possible	Likely	Almost Certain
MU5-11	Surfing WA Headquarters	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU5-12	Trigg Beach Carpark	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU6-01	Scarborough Beach North	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU6-02	Scarborough Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU6-03	Brighton Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU6-04	Peasholm Beach	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU6-05	Scarborough Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU6-06	Scarborough Beach Carpark	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU6-07	Scarborough Amphitheatre	Rare	Rare	Unlikely	Likely	Likely
MU6-08	Scarboro SLSC	Rare	Rare	Unlikely	Likely	Likely
MU6-09	Scarborough Beach Pool	Near Impossible	Near Impossible	Rare	Possible	Likely
MU6-10	Scarborough Beach Restaurant	Near Impossible	Near Impossible	Rare	Possible	Likely
MU6-11	Scarborough Playground and Skate Park	Near Impossible	Near Impossible	Rare	Possible	Likely
MU6-12	Scarborough Beach carpark south	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU6-13	Brighton Beach carpark	Near Impossible	Near Impossible	Near Impossible	Rare	Possible
MU6-14	Scarborough access, amenity and minor infrastructure	Near Impossible	Rare	Possible	Likely	Almost Certain

APPENDIX

C

ASSIGNED INUNDATION LIKELIHOOD RATINGS

CHRMAP Asset ID	Asset	Inundation Likelihood Inputs				
		Present Day (2022)	2030	2045	2070	2122
		Likelihood (Prevailing)				
MU1-01	Watermans Bay Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU1-02	Watermans Bay Dog Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU1-03	Watermans vegetated dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU1-04	Watermans GSC revetment	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU1-06	Lookout and amenities, Watermans Bay	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU1-07	Car park and lookout, Margaret St	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU1-08	Watermans access, amenity and minor infrastructure	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU2-01	North Beach Dog Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU2-02	North Beach (North)	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU2-03	North Beach (South)	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU2-04	North Beach access, amenity and minor infrastructure	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU2-05	North Beach Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU2-07	North Beach Revetment and Jetty	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU3-01	Mettams Pool Beach	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU3-02	Parking Area, Saunders St	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU3-03	Mettams Pool public toilets	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU3-05	Mettams vegetated dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU3-06	Mettams access, amenity and minor infrastructure	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU4-01	Bennion Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU4-02	Trigg Beach Dog Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU4-03	Trigg Beach North	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU4-04	Trigg North Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU4-06	Car park between Bennion and Bailey Streets	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU4-07	Parking area, Trigg Place	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU4-08	Trigg North access, amenity and minor infrastructure	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU5-01	Trigg Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU5-02	Trigg Beach South	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU5-03	Trigg South Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU5-04	Trigg Surf Lookout	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU5-05	Parking area, Trigg Beach north	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU5-06	Trigg Beach SLSC building 1	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU5-07	Trigg Beach SLSC building 2	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU5-08	Trigg Beach Café	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU5-09	Parking area, Trigg Beach central	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU5-10	Trigg South access, amenity and minor infrastructure	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU5-11	Surfing WA Headquarters	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU5-12	Trigg Beach Carpark	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-01	Scarborough Beach North	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU6-02	Scarborough Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU6-03	Brighton Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU6-04	Peasholm Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU6-05	Scarborough Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU6-06	Scarborough Beach Carpark	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-07	Scarborough Amphitheatre	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-08	Scarboro SLSC	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-09	Scarborough Beach Pool	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-10	Scarborough Beach Restaurant	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-11	Scarborough Playground and Skate Park	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-12	Scarborough Beach carpark south	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-13	Brighton Beach carpark	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-14	Scarborough access, amenity and minor infrastructure	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely

CHRMAP Asset ID	Asset	Inundation Likelihood Inputs				
		Present Day (2022)	2030	2045	2070	2122
		Likelihood (Probability)				
MU1-01	Watermans Bay Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU1-02	Watermans Bay Dog Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU1-03	Watermans vegetated dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU1-04	Watermans GSC revetment	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU1-06	Lookout and amenities, Watermans Bay	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU1-07	Car park and lookout, Margaret St	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU1-08	Watermans access, amenity and minor infrastructure	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU2-01	North Beach Dog Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU2-02	North Beach (North)	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU2-03	North Beach (South)	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU2-04	North Beach access, amenity and minor infrastructure	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU2-05	North Beach Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU2-07	North Beach Revetment and Jetty	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU3-01	Mettams Pool Beach	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU3-02	Parking Area, Saunders St	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU3-03	Mettams Pool public toilets	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU3-05	Mettams vegetated dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU3-06	Mettams access, amenity and minor infrastructure	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU4-01	Bennion Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU4-02	Trigg Beach Dog Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU4-03	Trigg Beach North	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU4-04	Trigg North Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU4-06	Car park between Bennion and Bailey Streets	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU4-07	Parking area, Trigg Place	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU4-08	Trigg North access, amenity and minor infrastructure	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MUS-01	Trigg Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MUS-02	Trigg Beach South	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MUS-03	Trigg South Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MUS-04	Trigg Surf Lookout	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MUS-05	Parking area, Trigg Beach north	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MUS-06	Trigg Beach SLSC building 1	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MUS-07	Trigg Beach SLSC building 2	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MUS-08	Trigg Beach Café	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MUS-09	Parking area, Trigg Beach central	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MUS-10	Trigg South access, amenity and minor infrastructure	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MUS-11	Surfing WA Headquarters	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MUS-12	Trigg Beach Carpark	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-01	Scarborough Beach North	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU6-02	Scarborough Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU6-03	Brighton Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU6-04	Peasholm Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU6-05	Scarborough Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU6-06	Scarborough Beach Carpark	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-07	Scarborough Amphitheatre	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-08	Scarboro SLSC	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-09	Scarborough Beach Pool	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-10	Scarborough Beach Restaurant	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-11	Scarborough Playground and Skate Park	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-12	Scarborough Beach carpark south	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-13	Brighton Beach carpark	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-14	Scarborough access, amenity and minor infrastructure	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely

CHRMAP Asset ID	Asset	Inundation Likelihood Inputs				
		Present Day (2022)		2030	2045	2070
					Likelihood (Timeframe)	
MU1-01	Watermans Bay Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU1-02	Watermans Bay Dog Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU1-03	Watermans vegetated dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU1-04	Watermans GSC revetment	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU1-06	Lookout and amenities, Watermans Bay	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU1-07	Car park and lookout, Margaret St	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU1-08	Watermans access, amenity and minor infrastructure	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU2-01	North Beach Dog Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU2-02	North Beach (North)	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU2-03	North Beach (South)	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU2-04	North Beach access, amenity and minor infrastructure	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU2-05	North Beach Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU2-07	North Beach Revetment and Jetty	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU3-01	Mettams Pool Beach	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU3-02	Parking Area, Saunders St	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU3-03	Mettams Pool public toilets	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU3-05	Mettams vegetated dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU3-06	Mettams access, amenity and minor infrastructure	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU4-01	Bennion Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU4-02	Trigg Beach Dog Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU4-03	Trigg Beach North	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU4-04	Trigg North Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU4-06	Car park between Bennion and Bailey Streets	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU4-07	Parking area, Trigg Place	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU4-08	Trigg North access, amenity and minor infrastructure	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MUS-01	Trigg Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MUS-02	Trigg Beach South	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MUS-03	Trigg South Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MUS-04	Trigg Surf Lookout	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MUS-05	Parking area, Trigg Beach north	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MUS-06	Trigg Beach SLSC building 1	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MUS-07	Trigg Beach SLSC building 2	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MUS-08	Trigg Beach Café	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MUS-09	Parking area, Trigg Beach central	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MUS-10	Trigg South access, amenity and minor infrastructure	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MUS-11	Surfing WA Headquarters	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MUS-12	Trigg Beach Carpark	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-01	Scarborough Beach North	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU6-02	Scarborough Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU6-03	Brighton Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU6-04	Peasholm Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU6-05	Scarborough Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU6-06	Scarborough Beach Carpark	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-07	Scarborough Amphitheatre	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-08	Scarboro SLSC	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-09	Scarborough Beach Pool	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-10	Scarborough Beach Restaurant	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-11	Scarborough Playground and Skate Park	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-12	Scarborough Beach carpark south	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-13	Brighton Beach carpark	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-14	Scarborough access, amenity and minor infrastructure	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely

CHRMAP Asset ID	Asset	Inundation Likelihood Inputs				
		Present Day (2022)	2030	2045	2070	2122
		Likelihood (Experience)				
MU1-01	Watermans Bay Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU1-02	Watermans Bay Dog Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU1-03	Watermans vegetated dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU1-04	Watermans GSC revetment	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU1-06	Lookout and amenities, Watermans Bay	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU1-07	Car park and lookout, Margaret St	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU1-08	Watermans access, amenity and minor infrastructure	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU2-01	North Beach Dog Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU2-02	North Beach (North)	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU2-03	North Beach (South)	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU2-04	North Beach access, amenity and minor infrastructure	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU2-05	North Beach Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU2-07	North Beach Revetment and Jetty	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU3-01	Mettams Pool Beach	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU3-02	Parking Area, Saunders St	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU3-03	Mettams Pool public toilets	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU3-05	Mettams vegetated dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU3-06	Mettams access, amenity and minor infrastructure	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU4-01	Bennion Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU4-02	Trigg Beach Dog Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU4-03	Trigg Beach North	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU4-04	Trigg North Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU4-06	Car park between Bennion and Bailey Streets	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU4-07	Parking area, Trigg Place	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU4-08	Trigg North access, amenity and minor infrastructure	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU5-01	Trigg Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU5-02	Trigg Beach South	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU5-03	Trigg South Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU5-04	Trigg Surf Lookout	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU5-05	Parking area, Trigg Beach north	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU5-06	Trigg Beach SLSC building 1	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU5-07	Trigg Beach SLSC building 2	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU5-08	Trigg Beach Café	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU5-09	Parking area, Trigg Beach central	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU5-10	Trigg South access, amenity and minor infrastructure	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU5-11	Surfing WA Headquarters	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU5-12	Trigg Beach Carpark	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-01	Scarborough Beach North	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU6-02	Scarborough Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU6-03	Brighton Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU6-04	Peasholm Beach	Unlikely	Possible	Likely	Almost Certain	Almost Certain
MU6-05	Scarborough Vegetated Dunes	Rare	Unlikely	Possible	Almost Certain	Almost Certain
MU6-06	Scarborough Beach Carpark	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-07	Scarborough Amphitheatre	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-08	Scarboro SLSC	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-09	Scarborough Beach Pool	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-10	Scarborough Beach Restaurant	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-11	Scarborough Playground and Skate Park	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-12	Scarborough Beach carpark south	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-13	Brighton Beach carpark	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely
MU6-14	Scarborough access, amenity and minor infrastructure	Near Impossible	Near Impossible	Near Impossible	Near Impossible	Unlikely

APPENDIX

D

ASSET VALUATIONS

Classification	CHRMAP Asset ID	Assets	Quantity	Units	Cost / unit	Reference	Total Value	Inundation Damage	% Value	Finacial Consequence (Erosion)	Finacial Consequence (Inundation)
Natural	MU1-01	Watermans Bay Beach	5607	sqm	\$3,116	UWA	\$17,471,000		2.00%	Catastrophic	
Natural	MU1-02	Watermans Bay Dog Beach	2592	sqm	\$3,116	UWA	\$8,077,000		0.93%	Catastrophic	
Natural	MU1-03	Watermans vegetated dunes	6593	sqm	\$132.00	UWA	\$870,000		0.10%	Moderate	
Built	MU1-04	Watermans GSC revetment	160	m	\$5,250.00	Internal database	\$840,000		0.10%	Moderate	
Built	MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	821	sqm	\$186.00	Rawlinsons	\$153,000	\$15,300	0.02%	Low	Low
Built	MU1-06	Lookout and amenities, Watermans Bay	130	sqm	\$2,780.00	Rawlinsons	\$361,000	\$36,100	0.04%	Low	Insignificant
Built	MU1-07	Car park and lookout, Margaret St	815	sqm	\$126.00	Rawlinsons	\$103,000	\$10,300	0.01%	Low	Low
Built	MU1-08	Watermans access, amenity and minor infrastructure		%	1%	Internal database	\$279,000	\$27,900	0.03%	Moderate	Low
Natural	MU2-01	North Beach Dog Beach	1761	sqm	\$3,116	UWA	\$5,487,000		0.63%	Catastrophic	
Natural	MU2-02	North Beach (North)	5260	sqm	\$3,116	UWA	\$16,390,000		1.88%	Catastrophic	
Natural	MU2-03	North Beach (South)	5770	sqm	\$3,116	UWA	\$17,979,000		2.06%	Catastrophic	
Built	MU2-04	North Beach access, amenity and minor infrastructure		%	1%	Internal database	\$424,000	\$42,400	0.05%	Moderate	Low
Natural	MU2-05	North Beach Vegetated Dunes	7042	sqm	\$132.00	UWA	\$930,000		0.11%	Moderate	
Built	MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	1472	sqm	\$186.00	Rawlinsons	\$274,000	\$27,400	0.03%	Moderate	Low
Built	MU2-07	North Beach Revetment and Jetty	22	m	\$22,000.00	Internal database	\$484,000		0.06%	Moderate	
Built	MU2-08	West Coast Drive, footpath and services (Sorrento St to Hammersley	4414	sqm	\$186.00	Rawlinsons	\$821,000	\$82,100	0.09%	Moderate	Low
Natural	MU3-01	Mettams Pool Beach	15077	sqm	\$3,116	UWA	\$46,980,000		5.38%	Catastrophic	
Built	MU3-02	Parking Area, Saunders St	2149	sqm	\$126.00	Rawlinsons	\$271,000	\$27,100	0.03%	Moderate	Low
Built	MU3-03	Mettams Pool public toilets	152	sqm	\$3,150.00	Rawlinsons	\$479,000	\$47,900	0.05%	Moderate	Low
Built	MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	5726	sqm	\$186.00	Rawlinsons	\$1,065,000	\$106,500	0.12%	High	Low
Natural	MU3-05	Mettams vegetated dunes	88	sqm	\$58.00	Rawlinsons	\$5,000		0.00%	Low	
Built	MU3-06	Mettams access, amenity and minor infrastructure		%	1%	Internal database	\$488,000	\$48,800	0.06%	Moderate	Low
Natural	MU4-01	Bennion Beach	4150	sqm	\$3,116	UWA	\$12,931,000		1.48%	Catastrophic	
Natural	MU4-02	Trigg Beach Dog Beach	2255	sqm	\$3,116	UWA	\$7,027,000		0.80%	Catastrophic	
Natural	MU4-03	Trigg Beach North	2847	sqm	\$3,116	UWA	\$8,871,000		1.02%	Catastrophic	
Natural	MU4-04	Trigg North Vegetated Dunes	3794	sqm	\$132.00	UWA	\$501,000		0.06%	Moderate	
Built	MU4-05	West Coast Drive, footpath and services (near Kathleen St)	464	sqm	\$186.00	Rawlinsons	\$86,000	\$8,600	0.01%	Low	Low
Built	MU4-06	Car park between Bennion and Bailey Streets	1200	sqm	\$126.00	Rawlinsons	\$151,000	\$15,100	0.02%	Low	Low
Built	MU4-07	Parking area, Trigg Place	1054	sqm	\$126.00	Rawlinsons	\$133,000	\$13,300	0.02%	Low	Low
Built	MU4-08	Trigg North access, amenity and minor infrastructure		%	1%	Internal database	\$297,000	\$29,700	0.03%	Moderate	Low
Natural	MU5-01	Trigg Beach	37260	sqm	\$3,116	UWA	\$116,102,000		13.30%	Catastrophic	
Natural	MU5-02	Trigg Beach South	38684	sqm	\$3,116	UWA	\$120,539,000		13.81%	Catastrophic	
Natural	MU5-03	Trigg South Vegetated Dunes	16671	sqm	\$132.00	UWA	\$2,201,000		0.25%	High	
Built	MU5-04	Trigg Surf Lookout	357	sqm	\$2,780.00	Rawlinsons	\$992,000	\$99,200	0.11%	Moderate	Low
Built	MU5-05	Parking area, Trigg Beach north	2379	sqm	\$126.00	Rawlinsons	\$300,000	\$30,000	0.03%	Moderate	Low
Built	MU5-06	Trigg Beach SLSC building 1	1153	sqm	\$2,780.00	Rawlinsons	\$3,205,000	\$320,500	0.37%	High	Moderate
Built	MU5-07	Trigg Beach SLSC building 2	296	sqm	\$2,780.00	Rawlinsons	\$823,000	\$82,300	0.09%	Moderate	Low
Built	MU5-08	Trigg Beach Café	2607	sqm	\$2,780.00	Rawlinsons	\$7,247,000	\$724,700	0.83%	Catastrophic	Moderate
Built	MU5-09	Parking area, Trigg Beach central	10397	sqm	\$126.00	Rawlinsons	\$1,310,000	\$131,000	0.15%	High	Low
Built	MU5-10	Trigg South access, amenity and minor infrastructure		%	1%	Internal database	\$2,575,000	\$257,500	0.29%	High	Moderate
Built	MU5-11	Surfing WA Headquarters	1360	sqm	\$2,780.00	Rawlinsons	\$3,781,000	\$378,100	0.43%	High	Moderate
Built	MU5-12	Trigg Beach Carpark	8000	sqm	\$126.00	Rawlinsons	\$1,008,000	\$100,800	0.12%	High	Low
Natural	MU6-01	Scarborough Beach North	27345	sqm	\$3,116	UWA	\$85,207,000		9.76%	Catastrophic	
Natural	MU6-02	Scarborough Beach	41089	sqm	\$3,116	UWA	\$128,033,000		14.66%	Catastrophic	
Natural	MU6-03	Brighton Beach	26878	sqm	\$3,116	UWA	\$83,752,000		9.59%	Catastrophic	
Natural	MU6-04	Peasholm Beach	34055	sqm	\$3,116	UWA	\$106,115,000		12.15%	Catastrophic	
Natural	MU6-05	Scarborough Vegetated Dunes	57810	sqm	\$132.00	UWA	\$7,631,000		0.87%	Catastrophic	
Built	MU6-06	Scarborough Beach Carpark	11300	sqm	\$126.00	Rawlinsons	\$1,424,000	\$142,400	0.16%	High	Low
Built	MU6-07	Scarborough Amphitheatre	1359	sqm	\$2,780.00	Rawlinsons	\$3,778,000	\$377,800	0.43%	High	Moderate
Built	MU6-08	Scarboro SLSC	1069	sqm	\$2,780.00	Rawlinsons	\$2,972,000	\$297,200	0.34%	High	Moderate
Built	MU6-09	Scarborough Beach Pool	1	unit	\$28,600,000.00	CoS	\$28,600,000	\$2,860,000	3.28%	Catastrophic	High
Built	MU6-10	Scarborough Beach Restaurant	3087	sqm	\$2,780.00	Rawlinsons	\$8,582,000	\$858,200	0.98%	Catastrophic	Moderate
Built	MU6-11	Scarborough Playground and Skate Park	2052	sqm	\$228.00	Rawlinsons	\$468,000	\$46,800	0.05%	Moderate	Low
Built	MU6-12	Scarborough Beach carpark south	7900	sqm	\$126.00	Rawlinsons	\$995,000	\$99,500	0.11%	Moderate	Low
Built	MU6-13	Brighton Beach carpark	4850	sqm	\$126.00	Rawlinsons	\$611,000	\$61,100	0.07%	Moderate	Low

APPENDIX

E

ASSIGNED EROSION CONSEQUENCE RATINGS



now



CHRMAP Asset ID	Asset	Erosion Consequence Inputs				
		Present Day (2022)	2030	2045	2070	2122
		Consequence (Prevailing)				
MU1-01	Watermans Bay Beach	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU1-01	Uncontrolled - Watermans Bay Beach	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU1-02	Watermans Bay Dog Beach	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU1-03	Watermans vegetated dunes	High	High	High	High	High
MU1-03	Uncontrolled - Watermans vegetated dunes	High	High	High	High	High
MU1-04	Watermans GSC revetment	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU1-06	Lookout and amenities, Watermans Bay	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-05	Uncontrolled - West Coast Drive, footpath and services (Beach Rd to Mary St)	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU1-06	Uncontrolled - Lookout and amenities, Watermans Bay	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-07	Car park and lookout, Margaret St	High	High	High	High	High
MU1-08	Watermans access, amenity and minor infrastructure	High	High	High	High	High
MU2-01	North Beach Dog Beach	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU2-02	North Beach (North)	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU2-03	North Beach (South)	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU2-04	North Beach access, amenity and minor infrastructure	High	High	High	High	High
MU2-05	North Beach Vegetated Dunes	High	High	High	High	High
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU2-07	North Beach Revetment and Jetty	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU3-01	Mettams Pool Beach	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU3-02	Parking Area, Saunders St	High	High	High	High	High
MU3-03	Mettams Pool public toilets	High	High	High	High	High
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU3-05	Mettams vegetated dunes	High	High	High	High	High
MU3-06	Mettams access, amenity and minor infrastructure	High	High	High	High	High
MU4-01	Bennion Beach	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU4-02	Trigg Beach Dog Beach	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU4-03	Trigg Beach North	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU4-04	Trigg North Vegetated Dunes	High	High	High	High	High
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU4-06	Car park between Bennion and Bailey Streets	High	High	High	High	High
MU4-07	Parking area, Trigg Place	High	High	High	High	High
MU4-08	Trigg North access, amenity and minor infrastructure	High	High	High	High	High
MU5-01	Trigg Beach	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU5-02	Trigg Beach South	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU5-03	Trigg South Vegetated Dunes	High	High	High	High	High
MU5-04	Trigg Surf Lookout	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-05	Parking area, Trigg Beach north	High	High	High	High	High
MU5-06	Trigg Beach SLSC building 1	High	High	High	High	High
MU5-07	Trigg Beach SLSC building 2	High	High	High	High	High
MU5-08	Trigg Beach Café	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU5-09	Parking area, Trigg Beach central	High	High	High	High	High
MU5-10	Trigg South access, amenity and minor infrastructure	High	High	High	High	High
MU5-11	Surfing WA Headquarters	High	High	High	High	High
MU5-12	Trigg Beach Carpark	High	High	High	High	High
MU6-01	Scarborough Beach North	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU6-02	Scarborough Beach	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU6-03	Brighton Beach	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU6-04	Peasholm Beach	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU6-05	Scarborough Vegetated Dunes	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU6-06	Scarborough Beach Carpark	High	High	High	High	High
MU6-07	Scarborough Amphitheatre	High	High	High	High	High
MU6-08	Scarboro SLSC	High	High	High	High	High
MU6-09	Scarborough Beach Pool	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU6-10	Scarborough Beach Restaurant	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU6-11	Scarborough Playground and Skate Park	High	High	High	High	High
MU6-12	Scarborough Beach carpark south	High	High	High	High	High
MU6-13	Brighton Beach carpark	High	High	High	High	High
MU6-14	Scarborough access, amenity and minor infrastructure	High	High	High	High	High

CHRMAP Asset ID	Asset	Erosion Consequence Inputs				
		Present Day (2022)	2030	2045	2070	2122
		Consequence (Environmental)				
MU1-01	Watermans Bay Beach	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-01	Uncontrolled - Watermans Bay Beach	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-02	Watermans Bay Dog Beach	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-03	Watermans vegetated dunes	High	High	High	High	High
MU1-03	Uncontrolled - Watermans vegetated dunes	High	High	High	High	High
MU1-04	Watermans GSC revetment	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-06	Lookout and amenities, Watermans Bay	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-05	Uncontrolled - West Coast Drive, footpath and services (Beach Rd to Mary St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-06	Uncontrolled - Lookout and amenities, Watermans Bay	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-07	Car park and lookout, Margaret St	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-08	Watermans access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-01	North Beach Dog Beach	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-02	North Beach (North)	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-03	North Beach (South)	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-04	North Beach access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-05	North Beach Vegetated Dunes	High	High	High	High	High
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-07	North Beach Revetment and Jetty	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-01	Mettams Pool Beach	Moderate	Moderate	Moderate	Moderate	Moderate
MU3-02	Parking Area, Saunders St	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-03	Mettams Pool public toilets	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-05	Mettams vegetated dunes	High	High	High	High	High
MU3-06	Mettams access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-01	Bennion Beach	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-02	Trigg Beach Dog Beach	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-03	Trigg Beach North	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-04	Trigg North Vegetated Dunes	High	High	High	High	High
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-06	Car park between Bennion and Bailey Streets	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-07	Parking area, Trigg Place	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-08	Trigg North access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-01	Trigg Beach	High	High	High	High	High
MU5-02	Trigg Beach South	High	High	High	High	High
MU5-03	Trigg South Vegetated Dunes	High	High	High	High	High
MU5-04	Trigg Surf Lookout	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-05	Parking area, Trigg Beach north	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-06	Trigg Beach SLSC building 1	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-07	Trigg Beach SLSC building 2	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-08	Trigg Beach Café	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-09	Parking area, Trigg Beach central	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-10	Trigg South access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-11	Surfing WA Headquarters	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-12	Trigg Beach Carpark	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-01	Scarborough Beach North	High	High	High	High	High
MU6-02	Scarborough Beach	High	High	High	High	High
MU6-03	Brighton Beach	High	High	High	High	High
MU6-04	Peasholm Beach	High	High	High	High	High
MU6-05	Scarborough Vegetated Dunes	High	High	High	High	High
MU6-06	Scarborough Beach Carpark	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-07	Scarborough Amphitheatre	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-08	Scarboro SLSC	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-09	Scarborough Beach Pool	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-10	Scarborough Beach Restaurant	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-11	Scarborough Playground and Skate Park	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-12	Scarborough Beach carpark south	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-13	Brighton Beach carpark	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-14	Scarborough access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant

CHRMAP Asset ID	Asset	Erosion Consequence Inputs				
		Present Day (2022)	2030	2045	2070	2122
		Consequence (Financial)				
MU1-01	Watermans Bay Beach	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU1-01	Uncontrolled - Watermans Bay Beach	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU1-02	Watermans Bay Dog Beach	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU1-03	Watermans vegetated dunes	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-03	Uncontrolled - Watermans vegetated dunes	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-04	Watermans GSC revetment	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Low	Low	Low	Low	Low
MU1-06	Lookout and amenities, Watermans Bay	Low	Low	Low	Low	Low
MU1-05	Uncontrolled - West Coast Drive, footpath and services (Beach Rd to Mary St)	Low	Low	Low	Low	Low
MU1-06	Uncontrolled - Lookout and amenities, Watermans Bay	Low	Low	Low	Low	Low
MU1-07	Car park and lookout, Margaret St	Low	Low	Low	Low	Low
MU1-08	Watermans access, amenity and minor infrastructure	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-01	North Beach Dog Beach	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU2-02	North Beach (North)	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU2-03	North Beach (South)	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU2-04	North Beach access, amenity and minor infrastructure	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-05	North Beach Vegetated Dunes	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-07	North Beach Revetment and Jetty	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Moderate	Moderate	Moderate	Moderate	Moderate
MU3-01	Mettams Pool Beach	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU3-02	Parking Area, Saunders St	Moderate	Moderate	Moderate	Moderate	Moderate
MU3-03	Mettams Pool public toilets	Moderate	Moderate	Moderate	Moderate	Moderate
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	High	High	High	High	High
MU3-05	Mettams vegetated dunes	Low	Low	Low	Low	Low
MU3-06	Mettams access, amenity and minor infrastructure	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-01	Bennion Beach	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU4-02	Trigg Beach Dog Beach	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU4-03	Trigg Beach North	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU4-04	Trigg North Vegetated Dunes	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Low	Low	Low	Low	Low
MU4-06	Car park between Bennion and Bailey Streets	Low	Low	Low	Low	Low
MU4-07	Parking area, Trigg Place	Low	Low	Low	Low	Low
MU4-08	Trigg North access, amenity and minor infrastructure	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-01	Trigg Beach	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU5-02	Trigg Beach South	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU5-03	Trigg South Vegetated Dunes	High	High	High	High	High
MU5-04	Trigg Surf Lookout	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-05	Parking area, Trigg Beach north	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-06	Trigg Beach SLSC building 1	High	High	High	High	High
MU5-07	Trigg Beach SLSC building 2	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-08	Trigg Beach Café	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU5-09	Parking area, Trigg Beach central	High	High	High	High	High
MU5-10	Trigg South access, amenity and minor infrastructure	High	High	High	High	High
MU5-11	Surfing WA Headquarters	High	High	High	High	High
MU5-12	Trigg Beach Carpark	High	High	High	High	High
MU6-01	Scarborough Beach North	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU6-02	Scarborough Beach	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU6-03	Brighton Beach	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU6-04	Peasholm Beach	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU6-05	Scarborough Vegetated Dunes	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU6-06	Scarborough Beach Carpark	High	High	High	High	High
MU6-07	Scarborough Amphitheatre	High	High	High	High	High
MU6-08	Scarboro SLSC	High	High	High	High	High
MU6-09	Scarborough Beach Pool	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU6-10	Scarborough Beach Restaurant	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU6-11	Scarborough Playground and Skate Park	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-12	Scarborough Beach carpark south	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-13	Brighton Beach carpark	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-14	Scarborough access, amenity and minor infrastructure	High	High	High	High	High

CHRMAP Asset ID	Asset	Erosion Consequence Inputs				
		Present Day (2022)				
		Consequence (Legislative / Regulatory) - NA				
		2030	2045	2070	2122	
MU1-01	Watermans Bay Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-01	Uncontrolled - Watermans Bay Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-02	Watermans Bay Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-03	Watermans vegetated dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-03	Uncontrolled - Watermans vegetated dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-04	Watermans GSC revetment	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-06	Lookout and amenities, Watermans Bay	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-05	Uncontrolled - West Coast Drive, footpath and services (Beach Rd to Mary St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-06	Uncontrolled - Lookout and amenities, Watermans Bay	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-07	Car park and lookout, Margaret St	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-08	Watermans access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-01	North Beach Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-02	North Beach (North)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-03	North Beach (South)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-04	North Beach access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-05	North Beach Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-07	North Beach Revetment and Jetty	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-01	Mettams Pool Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-02	Parking Area, Saunders St	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-03	Mettams Pool public toilets	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-05	Mettams vegetated dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-06	Mettams access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-01	Bennion Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-02	Trigg Beach Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-03	Trigg Beach North	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-04	Trigg North Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-06	Car park between Bennion and Bailey Streets	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-07	Parking area, Trigg Place	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-08	Trigg North access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-01	Trigg Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-02	Trigg Beach South	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-03	Trigg South Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-04	Trigg Surf Lookout	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-05	Parking area, Trigg Beach north	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-06	Trigg Beach SLSC building 1	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-07	Trigg Beach SLSC building 2	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-08	Trigg Beach Café	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-09	Parking area, Trigg Beach central	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-10	Trigg South access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-11	Surfing WA Headquarters	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-12	Trigg Beach Carpark	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-01	Scarborough Beach North	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-02	Scarborough Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-03	Brighton Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-04	Peasholm Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-05	Scarborough Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-06	Scarborough Beach Carpark	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-07	Scarborough Amphitheatre	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-08	Scarboro SLSC	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-09	Scarborough Beach Pool	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-10	Scarborough Beach Restaurant	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-11	Scarborough Playground and Skate Park	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-12	Scarborough Beach carpark south	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-13	Brighton Beach carpark	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-14	Scarborough access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant

CHRMAP Asset ID	Asset	Erosion Consequence Inputs				
		Present Day (2022)	2030	2045	2070	2122
		Consequence Health and Safety				
MU1-01	Watermans Bay Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-01	Uncontrolled - Watermans Bay Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-02	Watermans Bay Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-03	Watermans vegetated dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-03	Uncontrolled - Watermans vegetated dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-04	Watermans GSC revetment	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-06	Lookout and amenities, Watermans Bay	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-05	Uncontrolled - West Coast Drive, footpath and services (Beach Rd to Mary St)	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-06	Uncontrolled - Lookout and amenities, Watermans Bay	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-07	Car park and lookout, Margaret St	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-08	Watermans access, amenity and minor infrastructure	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-01	North Beach Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-02	North Beach (North)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-03	North Beach (South)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-04	North Beach access, amenity and minor infrastructure	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-05	North Beach Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-07	North Beach Revetment and Jetty	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Moderate	Moderate	Moderate	Moderate	Moderate
MU3-01	Mettams Pool Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-02	Parking Area, Saunders St	Moderate	Moderate	Moderate	Moderate	Moderate
MU3-03	Mettams Pool public toilets	Moderate	Moderate	Moderate	Moderate	Moderate
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Moderate	Moderate	Moderate	Moderate	Moderate
MU3-05	Mettams vegetated dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-06	Mettams access, amenity and minor infrastructure	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-01	Bennion Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-02	Trigg Beach Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-03	Trigg Beach North	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-04	Trigg North Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-06	Car park between Bennion and Bailey Streets	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-07	Parking area, Trigg Place	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-08	Trigg North access, amenity and minor infrastructure	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-01	Trigg Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-02	Trigg Beach South	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-03	Trigg South Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-04	Trigg Surf Lookout	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-05	Parking area, Trigg Beach north	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-06	Trigg Beach SLSC building 1	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-07	Trigg Beach SLSC building 2	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-08	Trigg Beach Café	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-09	Parking area, Trigg Beach central	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-10	Trigg South access, amenity and minor infrastructure	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-11	Surfing WA Headquarters	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-12	Trigg Beach Carpark	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-01	Scarborough Beach North	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-02	Scarborough Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-03	Brighton Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-04	Peasholm Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-05	Scarborough Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-06	Scarborough Beach Carpark	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-07	Scarborough Amphitheatre	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-08	Scarboro SLSC	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-09	Scarborough Beach Pool	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-10	Scarborough Beach Restaurant	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-11	Scarborough Playground and Skate Park	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-12	Scarborough Beach carpark south	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-13	Brighton Beach carpark	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-14	Scarborough access, amenity and minor infrastructure	Moderate	Moderate	Moderate	Moderate	Moderate

CHRMAP Asset ID	Asset	Erosion Consequence Inputs				
		Present Day (2022)				
		Consequence (Performance) - NA				
		2030	2045	2070	2122	
MU1-01	Watermans Bay Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-01	Uncontrolled - Watermans Bay Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-02	Watermans Bay Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-03	Watermans vegetated dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-03	Uncontrolled - Watermans vegetated dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-04	Watermans GSC revetment	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-06	Lookout and amenities, Watermans Bay	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-05	Uncontrolled - West Coast Drive, footpath and services (Beach Rd to Mary St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-06	Uncontrolled - Lookout and amenities, Watermans Bay	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-07	Car park and lookout, Margaret St	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-08	Watermans access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-01	North Beach Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-02	North Beach (North)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-03	North Beach (South)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-04	North Beach access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-05	North Beach Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-07	North Beach Revetment and Jetty	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-01	Mettams Pool Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-02	Parking Area, Saunders St	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-03	Mettams Pool public toilets	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-05	Mettams vegetated dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-06	Mettams access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-01	Bennion Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-02	Trigg Beach Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-03	Trigg Beach North	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-04	Trigg North Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-06	Car park between Bennion and Bailey Streets	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-07	Parking area, Trigg Place	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-08	Trigg North access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-01	Trigg Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-02	Trigg Beach South	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-03	Trigg South Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-04	Trigg Surf Lookout	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-05	Parking area, Trigg Beach north	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-06	Trigg Beach SLSC building 1	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-07	Trigg Beach SLSC building 2	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-08	Trigg Beach Café	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-09	Parking area, Trigg Beach central	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-10	Trigg South access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-11	Surfing WA Headquarters	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-12	Trigg Beach Carpark	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-01	Scarborough Beach North	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-02	Scarborough Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-03	Brighton Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-04	Peasholm Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-05	Scarborough Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-06	Scarborough Beach Carpark	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-07	Scarborough Amphitheatre	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-08	Scarboro SLSC	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-09	Scarborough Beach Pool	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-10	Scarborough Beach Restaurant	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-11	Scarborough Playground and Skate Park	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-12	Scarborough Beach carpark south	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-13	Brighton Beach carpark	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-14	Scarborough access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant

CHRMAP Asset ID	Asset	Erosion Consequence Inputs				
		Present Day (2022)	2030	2045	2070	2122
		Consequence (Project) - NA				
MU1-01	Watermans Bay Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-01	Uncontrolled - Watermans Bay Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-02	Watermans Bay Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-03	Watermans vegetated dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-03	Uncontrolled - Watermans vegetated dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-04	Watermans GSC revetment	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-06	Lookout and amenities, Watermans Bay	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-05	Uncontrolled - West Coast Drive, footpath and services (Beach Rd to Mary St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-06	Uncontrolled - Lookout and amenities, Watermans Bay	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-07	Car park and lookout, Margaret St	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-08	Watermans access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-01	North Beach Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-02	North Beach (North)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-03	North Beach (South)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-04	North Beach access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-05	North Beach Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-07	North Beach Revetment and Jetty	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-01	Mettams Pool Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-02	Parking Area, Saunders St	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-03	Mettams Pool public toilets	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-05	Mettams vegetated dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-06	Mettams access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-01	Bennion Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-02	Trigg Beach Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-03	Trigg Beach North	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-04	Trigg North Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-06	Car park between Bennion and Bailey Streets	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-07	Parking area, Trigg Place	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-08	Trigg North access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-01	Trigg Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-02	Trigg Beach South	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-03	Trigg South Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-04	Trigg Surf Lookout	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-05	Parking area, Trigg Beach north	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-06	Trigg Beach SLSC building 1	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-07	Trigg Beach SLSC building 2	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-08	Trigg Beach Café	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-09	Parking area, Trigg Beach central	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-10	Trigg South access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-11	Surfing WA Headquarters	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-12	Trigg Beach Carpark	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-01	Scarborough Beach North	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-02	Scarborough Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-03	Brighton Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-04	Peasholm Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-05	Scarborough Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-06	Scarborough Beach Carpark	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-07	Scarborough Amphitheatre	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-08	Scarboro SLSC	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-09	Scarborough Beach Pool	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-10	Scarborough Beach Restaurant	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-11	Scarborough Playground and Skate Park	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-12	Scarborough Beach carpark south	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-13	Brighton Beach carpark	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-14	Scarborough access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant

CHRMAP Asset ID	Asset	Erosion Consequence Inputs				
		Present Day (2022)	2030	2045	2070	2122
		Consequence (Reputation)				
MU1-01	Watermans Bay Beach	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-01	Uncontrolled - Watermans Bay Beach	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-02	Watermans Bay Dog Beach	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-03	Watermans vegetated dunes	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-03	Uncontrolled - Watermans vegetated dunes	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-04	Watermans GSC revetment	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU1-06	Lookout and amenities, Watermans Bay	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-05	Uncontrolled - West Coast Drive, footpath and services (Beach Rd to Mary St)	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU1-06	Uncontrolled - Lookout and amenities, Watermans Bay	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-07	Car park and lookout, Margaret St	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-08	Watermans access, amenity and minor infrastructure	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-01	North Beach Dog Beach	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-02	North Beach (North)	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-03	North Beach (South)	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-04	North Beach access, amenity and minor infrastructure	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-05	North Beach Vegetated Dunes	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU2-07	North Beach Revetment and Jetty	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU3-01	Mettams Pool Beach	High	High	High	High	High
MU3-02	Parking Area, Saunders St	Moderate	Moderate	Moderate	Moderate	Moderate
MU3-03	Mettams Pool public toilets	Moderate	Moderate	Moderate	Moderate	Moderate
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU3-05	Mettams vegetated dunes	Moderate	Moderate	Moderate	Moderate	Moderate
MU3-06	Mettams access, amenity and minor infrastructure	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-01	Bennion Beach	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-02	Trigg Beach Dog Beach	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-03	Trigg Beach North	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-04	Trigg North Vegetated Dunes	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU4-06	Car park between Bennion and Bailey Streets	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-07	Parking area, Trigg Place	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-08	Trigg North access, amenity and minor infrastructure	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-01	Trigg Beach	High	High	High	High	High
MU5-02	Trigg Beach South	High	High	High	High	High
MU5-03	Trigg South Vegetated Dunes	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-04	Trigg Surf Lookout	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-05	Parking area, Trigg Beach north	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-06	Trigg Beach SLSC building 1	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-07	Trigg Beach SLSC building 2	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-08	Trigg Beach Café	High	High	High	High	High
MU5-09	Parking area, Trigg Beach central	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-10	Trigg South access, amenity and minor infrastructure	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-11	Surfing WA Headquarters	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-12	Trigg Beach Carpark	High	High	High	High	High
MU6-01	Scarborough Beach North	High	High	High	High	High
MU6-02	Scarborough Beach	High	High	High	High	High
MU6-03	Brighton Beach	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-04	Peasholm Beach	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-05	Scarborough Vegetated Dunes	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-06	Scarborough Beach Carpark	High	High	High	High	High
MU6-07	Scarborough Amphitheatre	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-08	Scarboro SLSC	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-09	Scarborough Beach Pool	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU6-10	Scarborough Beach Restaurant	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU6-11	Scarborough Playground and Skate Park	High	High	High	High	High
MU6-12	Scarborough Beach carpark south	High	High	High	High	High
MU6-13	Brighton Beach carpark	High	High	High	High	High
MU6-14	Scarborough access, amenity and minor infrastructure	Moderate	Moderate	Moderate	Moderate	Moderate

CHRMAP Asset ID	Asset	Erosion Consequence Inputs				
		Present Day (2022)	2030	2045	2070	2122
		Consequence (Service Delivery / Business Disruption)				
MU1-01	Watermans Bay Beach	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-01	Uncontrolled - Watermans Bay Beach	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-02	Watermans Bay Dog Beach	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-03	Watermans vegetated dunes	Low	Low	Low	Low	Low
MU1-03	Uncontrolled - Watermans vegetated dunes	Low	Low	Low	Low	Low
MU1-04	Watermans GSC revetment	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU1-06	Lookout and amenities, Watermans Bay	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-05	Uncontrolled - West Coast Drive, footpath and services (Beach Rd to Mary St)	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU1-06	Uncontrolled - Lookout and amenities, Watermans Bay	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-07	Car park and lookout, Margaret St	High	High	High	High	High
MU1-08	Watermans access, amenity and minor infrastructure	High	High	High	High	High
MU2-01	North Beach Dog Beach	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-02	North Beach (North)	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-03	North Beach (South)	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-04	North Beach access, amenity and minor infrastructure	High	High	High	High	High
MU2-05	North Beach Vegetated Dunes	Low	Low	Low	Low	Low
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU2-07	North Beach Revetment and Jetty	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU3-01	Mettams Pool Beach	Moderate	Moderate	Moderate	Moderate	Moderate
MU3-02	Parking Area, Saunders St	High	High	High	High	High
MU3-03	Mettams Pool public toilets	High	High	High	High	High
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU3-05	Mettams vegetated dunes	Low	Low	Low	Low	Low
MU3-06	Mettams access, amenity and minor infrastructure	High	High	High	High	High
MU4-01	Bennion Beach	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-02	Trigg Beach Dog Beach	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-03	Trigg Beach North	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-04	Trigg North Vegetated Dunes	Low	Low	Low	Low	Low
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Catastrophic	Catastrophic	Catastrophic	Catastrophic	Catastrophic
MU4-06	Car park between Bennion and Bailey Streets	High	High	High	High	High
MU4-07	Parking area, Trigg Place	High	High	High	High	High
MU4-08	Trigg North access, amenity and minor infrastructure	High	High	High	High	High
MU5-01	Trigg Beach	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-02	Trigg Beach South	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-03	Trigg South Vegetated Dunes	Low	Low	Low	Low	Low
MU5-04	Trigg Surf Lookout	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-05	Parking area, Trigg Beach north	High	High	High	High	High
MU5-06	Trigg Beach SLSC building 1	High	High	High	High	High
MU5-07	Trigg Beach SLSC building 2	High	High	High	High	High
MU5-08	Trigg Beach Café	High	High	High	High	High
MU5-09	Parking area, Trigg Beach central	High	High	High	High	High
MU5-10	Trigg South access, amenity and minor infrastructure	High	High	High	High	High
MU5-11	Surfing WA Headquarters	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-12	Trigg Beach Carpark	High	High	High	High	High
MU6-01	Scarborough Beach North	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-02	Scarborough Beach	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-03	Brighton Beach	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-04	Peasholm Beach	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-05	Scarborough Vegetated Dunes	Low	Low	Low	Low	Low
MU6-06	Scarborough Beach Carpark	High	High	High	High	High
MU6-07	Scarborough Amphitheatre	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-08	Scarboro SLSC	High	High	High	High	High
MU6-09	Scarborough Beach Pool	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-10	Scarborough Beach Restaurant	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-11	Scarborough Playground and Skate Park	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-12	Scarborough Beach carpark south	High	High	High	High	High
MU6-13	Brighton Beach carpark	High	High	High	High	High
MU6-14	Scarborough access, amenity and minor infrastructure	High	High	High	High	High

APPENDIX

F

ASSIGNED INUNDATION CONSEQUENCE RATINGS



now



CHRMAP Asset ID	Asset	Inundation Consequence Inputs				
		Present Day (2022)	2030	2045	2070	2122
		Consequence (Prevailing)				
MU1-01	Watermans Bay Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-02	Watermans Bay Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-03	Watermans vegetated dunes	Low	Low	Low	Low	Low
MU1-04	Watermans GSC revetment	Low	Low	Low	Low	Low
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-06	Lookout and amenities, Watermans Bay	Low	Low	Low	Low	Low
MU1-07	Car park and lookout, Margaret St	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-08	Watermans access, amenity and minor infrastructure	Low	Low	Low	Low	Low
MU2-01	North Beach Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-02	North Beach (North)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-03	North Beach (South)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-04	North Beach access, amenity and minor infrastructure	Low	Low	Low	Low	Low
MU2-05	North Beach Vegetated Dunes	Low	Low	Low	Low	Low
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-07	North Beach Revetment and Jetty	Low	Low	Low	Low	Low
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Moderate	Moderate	Moderate	Moderate	Moderate
MU3-01	Mettams Pool Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-02	Parking Area, Saunders St	Moderate	Moderate	Moderate	Moderate	Moderate
MU3-03	Mettams Pool public toilets	Moderate	Moderate	Moderate	Moderate	Moderate
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Moderate	Moderate	Moderate	Moderate	Moderate
MU3-05	Mettams vegetated dunes	Low	Low	Low	Low	Low
MU3-06	Mettams access, amenity and minor infrastructure	Low	Low	Low	Low	Low
MU4-01	Bennion Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-02	Trigg Beach Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-03	Trigg Beach North	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-04	Trigg North Vegetated Dunes	Low	Low	Low	Low	Low
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-06	Car park between Bennion and Bailey Streets	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-07	Parking area, Trigg Place	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-08	Trigg North access, amenity and minor infrastructure	Low	Low	Low	Low	Low
MU5-01	Trigg Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-02	Trigg Beach South	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-03	Trigg South Vegetated Dunes	Low	Low	Low	Low	Low
MU5-04	Trigg Surf Lookout	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-05	Parking area, Trigg Beach north	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-06	Trigg Beach SLSC building 1	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-07	Trigg Beach SLSC building 2	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-08	Trigg Beach Café	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-09	Parking area, Trigg Beach central	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-10	Trigg South access, amenity and minor infrastructure	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-11	Surfing WA Headquarters	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-12	Trigg Beach Carpark	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-01	Scarborough Beach North	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-02	Scarborough Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-03	Brighton Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-04	Peasholm Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-05	Scarborough Vegetated Dunes	Low	Low	Low	Low	Low
MU6-06	Scarborough Beach Carpark	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-07	Scarborough Amphitheatre	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-08	Scarboro SLSC	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-09	Scarborough Beach Pool	High	High	High	High	High
MU6-10	Scarborough Beach Restaurant	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-11	Scarborough Playground and Skate Park	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-12	Scarborough Beach carpark south	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-13	Brighton Beach carpark	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-14	Scarborough access, amenity and minor infrastructure	Moderate	Moderate	Moderate	Moderate	Moderate

CHRMAP Asset ID	Asset	Inundation Consequence Inputs				
		Present Day (2022)	2030	2045	2070	2122
		Consequence (Environmental)				
MU1-01	Watermans Bay Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-02	Watermans Bay Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-03	Watermans vegetated dunes	Low	Low	Low	Low	Low
MU1-04	Watermans GSC revetment	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-06	Lookout and amenities, Watermans Bay	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-07	Car park and lookout, Margaret St	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-08	Watermans access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-01	North Beach Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-02	North Beach (North)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-03	North Beach (South)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-04	North Beach access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-05	North Beach Vegetated Dunes	Low	Low	Low	Low	Low
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-07	North Beach Revetment and Jetty	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-01	Mettams Pool Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-02	Parking Area, Saunders St	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-03	Mettams Pool public toilets	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-05	Mettams vegetated dunes	Low	Low	Low	Low	Low
MU3-06	Mettams access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-01	Bennion Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-02	Trigg Beach Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-03	Trigg Beach North	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-04	Trigg North Vegetated Dunes	Low	Low	Low	Low	Low
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-06	Car park between Bennion and Bailey Streets	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-07	Parking area, Trigg Place	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-08	Trigg North access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-01	Trigg Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-02	Trigg Beach South	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-03	Trigg South Vegetated Dunes	Low	Low	Low	Low	Low
MU5-04	Trigg Surf Lookout	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-05	Parking area, Trigg Beach north	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-06	Trigg Beach SLSC building 1	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-07	Trigg Beach SLSC building 2	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-08	Trigg Beach Café	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-09	Parking area, Trigg Beach central	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-10	Trigg South access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-11	Surfing WA Headquarters	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-12	Trigg Beach Carpark	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-01	Scarborough Beach North	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-02	Scarborough Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-03	Brighton Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-04	Peasholm Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-05	Scarborough Vegetated Dunes	Low	Low	Low	Low	Low
MU6-06	Scarborough Beach Carpark	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-07	Scarborough Amphitheatre	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-08	Scarboro SLSC	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-09	Scarborough Beach Pool	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-10	Scarborough Beach Restaurant	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-11	Scarborough Playground and Skate Park	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-12	Scarborough Beach carpark south	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-13	Brighton Beach carpark	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-14	Scarborough access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant

CHRMAP Asset ID	Asset	Inundation Consequence Inputs				
		Present Day (2022)	2030	2045	2070	2122
		Consequence (Financial)				
MU1-01	Watermans Bay Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-02	Watermans Bay Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-03	Watermans vegetated dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-04	Watermans GSC revetment	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Low	Low	Low	Low	Low
MU1-06	Lookout and amenities, Watermans Bay	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-07	Car park and lookout, Margaret St	Low	Low	Low	Low	Low
MU1-08	Watermans access, amenity and minor infrastructure	Low	Low	Low	Low	Low
MU2-01	North Beach Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-02	North Beach (North)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-03	North Beach (South)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-04	North Beach access, amenity and minor infrastructure	Low	Low	Low	Low	Low
MU2-05	North Beach Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Low	Low	Low	Low	Low
MU2-07	North Beach Revetment and Jetty	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Low	Low	Low	Low	Low
MU3-01	Mettams Pool Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-02	Parking Area, Saunders St	Low	Low	Low	Low	Low
MU3-03	Mettams Pool public toilets	Low	Low	Low	Low	Low
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Low	Low	Low	Low	Low
MU3-05	Mettams vegetated dunes	Low	Low	Low	Low	Low
MU3-06	Mettams access, amenity and minor infrastructure	Low	Low	Low	Low	Low
MU4-01	Bennion Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-02	Trigg Beach Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-03	Trigg Beach North	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-04	Trigg North Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Low	Low	Low	Low	Low
MU4-06	Car park between Bennion and Bailey Streets	Low	Low	Low	Low	Low
MU4-07	Parking area, Trigg Place	Low	Low	Low	Low	Low
MU4-08	Trigg North access, amenity and minor infrastructure	Low	Low	Low	Low	Low
MU5-01	Trigg Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-02	Trigg Beach South	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-03	Trigg South Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-04	Trigg Surf Lookout	Low	Low	Low	Low	Low
MU5-05	Parking area, Trigg Beach north	Low	Low	Low	Low	Low
MU5-06	Trigg Beach SLSC building 1	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-07	Trigg Beach SLSC building 2	Low	Low	Low	Low	Low
MU5-08	Trigg Beach Café	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-09	Parking area, Trigg Beach central	Low	Low	Low	Low	Low
MU5-10	Trigg South access, amenity and minor infrastructure	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-11	Surfing WA Headquarters	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-12	Trigg Beach Carpark	Low	Low	Low	Low	Low
MU6-01	Scarborough Beach North	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-02	Scarborough Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-03	Brighton Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-04	Peasholm Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-05	Scarborough Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-06	Scarborough Beach Carpark	Low	Low	Low	Low	Low
MU6-07	Scarborough Amphitheatre	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-08	Scarboro SLSC	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-09	Scarborough Beach Pool	High	High	High	High	High
MU6-10	Scarborough Beach Restaurant	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-11	Scarborough Playground and Skate Park	Low	Low	Low	Low	Low
MU6-12	Scarborough Beach carpark south	Low	Low	Low	Low	Low
MU6-13	Brighton Beach carpark	Low	Low	Low	Low	Low
MU6-14	Scarborough access, amenity and minor infrastructure	Moderate	Moderate	Moderate	Moderate	Moderate

CHRMAP Asset ID	Asset	Inundation Consequence Inputs				
		Present Day (2022)	2030	2045	2070	2122
		Consequence (Legislative / Regulatory) - NA				
MU1-01	Watermans Bay Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-02	Watermans Bay Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-03	Watermans vegetated dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-04	Watermans GSC revetment	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-06	Lookout and amenities, Watermans Bay	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-07	Car park and lookout, Margaret St	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-08	Watermans access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-01	North Beach Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-02	North Beach (North)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-03	North Beach (South)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-04	North Beach access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-05	North Beach Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-07	North Beach Revetment and Jetty	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-01	Mettams Pool Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-02	Parking Area, Saunders St	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-03	Mettams Pool public toilets	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-05	Mettams vegetated dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-06	Mettams access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-01	Bennion Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-02	Trigg Beach Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-03	Trigg Beach North	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-04	Trigg North Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-06	Car park between Bennion and Bailey Streets	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-07	Parking area, Trigg Place	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-08	Trigg North access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-01	Trigg Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-02	Trigg Beach South	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-03	Trigg South Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-04	Trigg Surf Lookout	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-05	Parking area, Trigg Beach north	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-06	Trigg Beach SLSC building 1	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-07	Trigg Beach SLSC building 2	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-08	Trigg Beach Café	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-09	Parking area, Trigg Beach central	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-10	Trigg South access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-11	Surfing WA Headquarters	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-12	Trigg Beach Carpark	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-01	Scarborough Beach North	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-02	Scarborough Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-03	Brighton Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-04	Peasholm Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-05	Scarborough Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-06	Scarborough Beach Carpark	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-07	Scarborough Amphitheatre	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-08	Scarboro SLSC	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-09	Scarborough Beach Pool	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-10	Scarborough Beach Restaurant	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-11	Scarborough Playground and Skate Park	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-12	Scarborough Beach carpark south	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-13	Brighton Beach carpark	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-14	Scarborough access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant

CHRMAP Asset ID	Asset	Inundation Consequence Inputs				
		Present Day (2022)	2030	2045	2070	2122
		Consequence Health and Safety				
MU1-01	Watermans Bay Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-02	Watermans Bay Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-03	Watermans vegetated dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-04	Watermans GSC revetment	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Low	Low	Low	Low	Low
MU1-06	Lookout and amenities, Watermans Bay	Low	Low	Low	Low	Low
MU1-07	Car park and lookout, Margaret St	Low	Low	Low	Low	Low
MU1-08	Watermans access, amenity and minor infrastructure	Low	Low	Low	Low	Low
MU2-01	North Beach Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-02	North Beach (North)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-03	North Beach (South)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-04	North Beach access, amenity and minor infrastructure	Low	Low	Low	Low	Low
MU2-05	North Beach Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Low	Low	Low	Low	Low
MU2-07	North Beach Revetment and Jetty	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Low	Low	Low	Low	Low
MU3-01	Mettams Pool Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-02	Parking Area, Saunders St	Low	Low	Low	Low	Low
MU3-03	Mettams Pool public toilets	Low	Low	Low	Low	Low
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Low	Low	Low	Low	Low
MU3-05	Mettams vegetated dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-06	Mettams access, amenity and minor infrastructure	Low	Low	Low	Low	Low
MU4-01	Bennion Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-02	Trigg Beach Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-03	Trigg Beach North	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-04	Trigg North Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Low	Low	Low	Low	Low
MU4-06	Car park between Bennion and Bailey Streets	Low	Low	Low	Low	Low
MU4-07	Parking area, Trigg Place	Low	Low	Low	Low	Low
MU4-08	Trigg North access, amenity and minor infrastructure	Low	Low	Low	Low	Low
MU5-01	Trigg Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-02	Trigg Beach South	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-03	Trigg South Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-04	Trigg Surf Lookout	Low	Low	Low	Low	Low
MU5-05	Parking area, Trigg Beach north	Low	Low	Low	Low	Low
MU5-06	Trigg Beach SLSC building 1	Low	Low	Low	Low	Low
MU5-07	Trigg Beach SLSC building 2	Low	Low	Low	Low	Low
MU5-08	Trigg Beach Café	Low	Low	Low	Low	Low
MU5-09	Parking area, Trigg Beach central	Low	Low	Low	Low	Low
MU5-10	Trigg South access, amenity and minor infrastructure	Low	Low	Low	Low	Low
MU5-11	Surfing WA Headquarters	Low	Low	Low	Low	Low
MU5-12	Trigg Beach Carpark	Low	Low	Low	Low	Low
MU6-01	Scarborough Beach North	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-02	Scarborough Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-03	Brighton Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-04	Peasholm Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-05	Scarborough Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-06	Scarborough Beach Carpark	Low	Low	Low	Low	Low
MU6-07	Scarborough Amphitheatre	Low	Low	Low	Low	Low
MU6-08	Scarboro SLSC	Low	Low	Low	Low	Low
MU6-09	Scarborough Beach Pool	Low	Low	Low	Low	Low
MU6-10	Scarborough Beach Restaurant	Low	Low	Low	Low	Low
MU6-11	Scarborough Playground and Skate Park	Low	Low	Low	Low	Low
MU6-12	Scarborough Beach carpark south	Low	Low	Low	Low	Low
MU6-13	Brighton Beach carpark	Low	Low	Low	Low	Low
MU6-14	Scarborough access, amenity and minor infrastructure	Low	Low	Low	Low	Low

CHRMAP Asset ID	Asset	Inundation Consequence Inputs				
		Present Day (2022)	2030	2045	2070	2122
		Consequence (Performance) - NA				
MU1-01	Watermans Bay Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-02	Watermans Bay Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-03	Watermans vegetated dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-04	Watermans GSC revetment	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-06	Lookout and amenities, Watermans Bay	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-07	Car park and lookout, Margaret St	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-08	Watermans access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-01	North Beach Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-02	North Beach (North)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-03	North Beach (South)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-04	North Beach access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-05	North Beach Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-07	North Beach Revetment and Jetty	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-01	Mettams Pool Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-02	Parking Area, Saunders St	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-03	Mettams Pool public toilets	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-05	Mettams vegetated dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-06	Mettams access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-01	Bennion Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-02	Trigg Beach Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-03	Trigg Beach North	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-04	Trigg North Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-06	Car park between Bennion and Bailey Streets	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-07	Parking area, Trigg Place	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-08	Trigg North access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-01	Trigg Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-02	Trigg Beach South	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-03	Trigg South Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-04	Trigg Surf Lookout	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-05	Parking area, Trigg Beach north	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-06	Trigg Beach SLSC building 1	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-07	Trigg Beach SLSC building 2	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-08	Trigg Beach Café	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-09	Parking area, Trigg Beach central	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-10	Trigg South access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-11	Surfing WA Headquarters	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-12	Trigg Beach Carpark	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-01	Scarborough Beach North	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-02	Scarborough Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-03	Brighton Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-04	Peasholm Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-05	Scarborough Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-06	Scarborough Beach Carpark	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-07	Scarborough Amphitheatre	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-08	Scarboro SLSC	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-09	Scarborough Beach Pool	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-10	Scarborough Beach Restaurant	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-11	Scarborough Playground and Skate Park	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-12	Scarborough Beach carpark south	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-13	Brighton Beach carpark	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-14	Scarborough access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant

CHRMAP Asset ID	Asset	Inundation Consequence Inputs				
		Present Day (2022)	2030	2045	2070	2122
		Consequence (Project) - NA				
MU1-01	Watermans Bay Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-02	Watermans Bay Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-03	Watermans vegetated dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-04	Watermans GSC revetment	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-06	Lookout and amenities, Watermans Bay	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-07	Car park and lookout, Margaret St	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-08	Watermans access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-01	North Beach Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-02	North Beach (North)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-03	North Beach (South)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-04	North Beach access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-05	North Beach Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-07	North Beach Revetment and Jetty	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-01	Mettams Pool Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-02	Parking Area, Saunders St	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-03	Mettams Pool public toilets	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-05	Mettams vegetated dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-06	Mettams access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-01	Bennion Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-02	Trigg Beach Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-03	Trigg Beach North	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-04	Trigg North Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-06	Car park between Bennion and Bailey Streets	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-07	Parking area, Trigg Place	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-08	Trigg North access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-01	Trigg Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-02	Trigg Beach South	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-03	Trigg South Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-04	Trigg Surf Lookout	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-05	Parking area, Trigg Beach north	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-06	Trigg Beach SLSC building 1	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-07	Trigg Beach SLSC building 2	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-08	Trigg Beach Café	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-09	Parking area, Trigg Beach central	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-10	Trigg South access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-11	Surfing WA Headquarters	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-12	Trigg Beach Carpark	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-01	Scarborough Beach North	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-02	Scarborough Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-03	Brighton Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-04	Peasholm Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-05	Scarborough Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-06	Scarborough Beach Carpark	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-07	Scarborough Amphitheatre	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-08	Scarboro SLSC	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-09	Scarborough Beach Pool	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-10	Scarborough Beach Restaurant	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-11	Scarborough Playground and Skate Park	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-12	Scarborough Beach carpark south	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-13	Brighton Beach carpark	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-14	Scarborough access, amenity and minor infrastructure	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant

CHRMAP Asset ID	Asset	Inundation Consequence Inputs				
		Present Day (2022)	2030	2045	2070	2122
		Consequence (Reputation)				
MU1-01	Watermans Bay Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-02	Watermans Bay Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-03	Watermans vegetated dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-04	Watermans GSC revetment	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-06	Lookout and amenities, Watermans Bay	Low	Low	Low	Low	Low
MU1-07	Car park and lookout, Margaret St	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-08	Watermans access, amenity and minor infrastructure	Low	Low	Low	Low	Low
MU2-01	North Beach Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-02	North Beach (North)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-03	North Beach (South)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-04	North Beach access, amenity and minor infrastructure	Low	Low	Low	Low	Low
MU2-05	North Beach Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-07	North Beach Revetment and Jetty	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Moderate	Moderate	Moderate	Moderate	Moderate
MU3-01	Mettams Pool Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-02	Parking Area, Saunders St	Moderate	Moderate	Moderate	Moderate	Moderate
MU3-03	Mettams Pool public toilets	Low	Low	Low	Low	Low
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Moderate	Moderate	Moderate	Moderate	Moderate
MU3-05	Mettams vegetated dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-06	Mettams access, amenity and minor infrastructure	Low	Low	Low	Low	Low
MU4-01	Bennion Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-02	Trigg Beach Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-03	Trigg Beach North	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-04	Trigg North Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-06	Car park between Bennion and Bailey Streets	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-07	Parking area, Trigg Place	Low	Low	Low	Low	Low
MU4-08	Trigg North access, amenity and minor infrastructure	Low	Low	Low	Low	Low
MU5-01	Trigg Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-02	Trigg Beach South	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-03	Trigg South Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-04	Trigg Surf Lookout	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-05	Parking area, Trigg Beach north	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-06	Trigg Beach SLSC building 1	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-07	Trigg Beach SLSC building 2	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-08	Trigg Beach Café	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-09	Parking area, Trigg Beach central	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-10	Trigg South access, amenity and minor infrastructure	Low	Low	Low	Low	Low
MU5-11	Surfing WA Headquarters	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-12	Trigg Beach Carpark	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-01	Scarborough Beach North	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-02	Scarborough Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-03	Brighton Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-04	Peasholm Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-05	Scarborough Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-06	Scarborough Beach Carpark	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-07	Scarborough Amphitheatre	Low	Low	Low	Low	Low
MU6-08	Scarboro SLSC	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-09	Scarborough Beach Pool	High	High	High	High	High
MU6-10	Scarborough Beach Restaurant	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-11	Scarborough Playground and Skate Park	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-12	Scarborough Beach carpark south	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-13	Brighton Beach carpark	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-14	Scarborough access, amenity and minor infrastructure	Low	Low	Low	Low	Low

CHRMAP Asset ID	Asset	Inundation Consequence Inputs				
		Present Day (2022)	2030	2045	2070	2122
		Consequence (Service Delivery / Business Disruption)				
MU1-01	Watermans Bay Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-02	Watermans Bay Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-03	Watermans vegetated dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU1-04	Watermans GSC revetment	Low	Low	Low	Low	Low
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-06	Lookout and amenities, Watermans Bay	Low	Low	Low	Low	Low
MU1-07	Car park and lookout, Margaret St	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-08	Watermans access, amenity and minor infrastructure	Low	Low	Low	Low	Low
MU2-01	North Beach Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-02	North Beach (North)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-03	North Beach (South)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-04	North Beach access, amenity and minor infrastructure	Low	Low	Low	Low	Low
MU2-05	North Beach Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-07	North Beach Revetment and Jetty	Low	Low	Low	Low	Low
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Moderate	Moderate	Moderate	Moderate	Moderate
MU3-01	Mettams Pool Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-02	Parking Area, Saunders St	Moderate	Moderate	Moderate	Moderate	Moderate
MU3-03	Mettams Pool public toilets	Moderate	Moderate	Moderate	Moderate	Moderate
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Moderate	Moderate	Moderate	Moderate	Moderate
MU3-05	Mettams vegetated dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU3-06	Mettams access, amenity and minor infrastructure	Low	Low	Low	Low	Low
MU4-01	Bennion Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-02	Trigg Beach Dog Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-03	Trigg Beach North	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-04	Trigg North Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-06	Car park between Bennion and Bailey Streets	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-07	Parking area, Trigg Place	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-08	Trigg North access, amenity and minor infrastructure	Low	Low	Low	Low	Low
MU5-01	Trigg Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-02	Trigg Beach South	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-03	Trigg South Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU5-04	Trigg Surf Lookout	Low	Low	Low	Low	Low
MU5-05	Parking area, Trigg Beach north	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-06	Trigg Beach SLSC building 1	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-07	Trigg Beach SLSC building 2	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-08	Trigg Beach Café	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-09	Parking area, Trigg Beach central	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-10	Trigg South access, amenity and minor infrastructure	Low	Low	Low	Low	Low
MU5-11	Surfing WA Headquarters	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-12	Trigg Beach Carpark	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-01	Scarborough Beach North	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-02	Scarborough Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-03	Brighton Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-04	Peasholm Beach	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-05	Scarborough Vegetated Dunes	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
MU6-06	Scarborough Beach Carpark	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-07	Scarborough Amphitheatre	Low	Low	Low	Low	Low
MU6-08	Scarboro SLSC	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-09	Scarborough Beach Pool	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-10	Scarborough Beach Restaurant	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-11	Scarborough Playground and Skate Park	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-12	Scarborough Beach carpark south	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-13	Brighton Beach carpark	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-14	Scarborough access, amenity and minor infrastructure	Low	Low	Low	Low	Low

APPENDIX

G

ASSIGNED ADAPTIVE CAPACITY RATINGS



now



CHRMAP Asset ID	Asset	Adaptive Capacity 2022		Adaptive Capacity 2030		Adaptive Capacity 2045		Adaptive Capacity 2070		Adaptive Capacity 2122	
		Erosion	Inundation	Erosion	Inundation	Erosion	Inundation	Erosion	Inundation	Erosion	Inundation
MU1-01	Watermans Bay Beach	High	Very High	High	Very High	Moderate	Very High	Low	Very High	Low	Very High
MU1-01	Uncontrolled - Watermans Bay Beach	High	Very High	Moderate	Very High	Low	Very High	Low	Very High	Low	Very High
MU1-02	Watermans Bay Dog Beach	High	Very High	High	Very High	Moderate	Very High	Low	Very High	Low	Very High
MU1-03	Watermans vegetated dunes	High	Moderate	High	Moderate	Moderate	Moderate	Low	Moderate	Low	Moderate
MU1-03	Uncontrolled - Watermans vegetated dunes	High	Moderate	High	Moderate	Moderate	Moderate	Low	Moderate	Low	Moderate
MU1-04	Watermans GSC revetment	Moderate	High	Moderate	High	Moderate	High	Low	Moderate	Low	Moderate
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Low	Moderate	Low	Moderate	Low	Moderate	Low	Moderate	Low	Moderate
MU1-06	Lookout and amenities, Watermans Bay	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-05	Uncontrolled - West Coast Drive, footpath and services (Beach Rd to Mary St)	Low	Moderate	Low	Moderate	Low	Moderate	Low	Moderate	Low	Moderate
MU1-06	Uncontrolled - Lookout and amenities, Watermans Bay	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-07	Car park and lookout, Margaret St	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
MU1-08	Watermans access, amenity and minor infrastructure	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
MU2-01	North Beach Dog Beach	High	Very High	High	Very High	Moderate	Very High	Low	Very High	Low	Very High
MU2-02	North Beach (North)	High	Very High	High	Very High	Moderate	Very High	Low	Very High	Low	Very High
MU2-03	North Beach (South)	High	Very High	High	Very High	Moderate	Very High	Low	Very High	Low	Very High
MU2-04	North Beach access, amenity and minor infrastructure	Moderate	Very High	Moderate	Very High	Moderate	Very High	Moderate	Very High	Moderate	Very High
MU2-05	North Beach Vegetated Dunes	High	Moderate	High	Moderate	Moderate	Moderate	Low	Moderate	Low	Moderate
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Low	Moderate	Low	Moderate	Low	Moderate	Low	Moderate	Low	Moderate
MU2-07	North Beach Revetment and Jetty	Moderate	High	Moderate	High	Moderate	High	Moderate	Moderate	Moderate	Moderate
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Low	Very High	Low	Very High	Low	Very High	Low	Very High	Low	Very High
MU3-01	Mettams Pool Beach	High	Very High	High	Very High	Moderate	Very High	Low	Very High	Low	Very High
MU3-02	Parking Area, Saunders St	Moderate	Very High	Moderate	Very High	Low	Very High	Low	Very High	Low	Very High
MU3-03	Mettams Pool public toilets	Low	Moderate	Low	Moderate	Low	Moderate	Low	Moderate	Low	Moderate
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Low	Moderate	Low	Moderate	Low	Moderate	Low	Moderate	Low	Moderate
MU3-05	Mettams vegetated dunes	High	Moderate	High	Moderate	Moderate	Moderate	Low	Moderate	Low	Moderate
MU3-06	Mettams access, amenity and minor infrastructure	Moderate	Very High	Moderate	Very High	Moderate	Very High	Moderate	Very High	Moderate	Very High
MU4-01	Bennion Beach	High	Very High	High	Very High	Moderate	Very High	Low	Very High	Low	Very High
MU4-02	Trigg Beach Dog Beach	High	Very High	High	Very High	Moderate	Very High	Low	Very High	Low	Very High
MU4-03	Trigg Beach North	High	Very High	High	Very High	Moderate	Very High	Low	Very High	Low	Very High
MU4-04	Trigg North Vegetated Dunes	High	Moderate	High	Moderate	Moderate	Moderate	Low	Moderate	Low	Moderate
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Low	Moderate	Low	Moderate	Low	Moderate	Low	Moderate	Low	Moderate
MU4-06	Car park between Bennion and Bailey Streets	Moderate	Very High	Moderate	Very High	Low	Very High	Low	Very High	Low	Very High
MU4-07	Parking area, Trigg Place	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
MU4-08	Trigg North access, amenity and minor infrastructure	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-01	Trigg Beach	High	Very High	High	Very High	High	Very High	Moderate	Very High	Moderate	Very High
MU5-02	Trigg Beach South	High	Very High	High	Very High	High	Very High	Moderate	Very High	Moderate	Very High
MU5-03	Trigg South Vegetated Dunes	Moderate	Moderate	Moderate	Moderate	Low	Moderate	Low	Moderate	Low	Moderate
MU5-04	Trigg Surf Lookout	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-05	Parking area, Trigg Beach north	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-06	Trigg Beach SLSC building 1	Low	Moderate	Low	Moderate	Low	Moderate	Low	Moderate	Low	Moderate
MU5-07	Trigg Beach SLSC building 2	Low	Moderate	Low	Moderate	Low	Moderate	Low	Moderate	Low	Moderate
MU5-08	Trigg Beach Café	Low	Moderate	Low	Moderate	Low	Moderate	Low	Moderate	Low	Moderate
MU5-09	Parking area, Trigg Beach central	Moderate	Very High	Moderate	Very High	Moderate	Very High	Low	Very High	Low	Very High
MU5-10	Trigg South access, amenity and minor infrastructure	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
MU5-11	Surfing WA Headquarters	Low	Moderate	Low	Moderate	Low	Moderate	Low	Moderate	Low	Moderate
MU5-12	Trigg Beach Carpark	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-01	Scarborough Beach North	High	Very High	High	Very High	High	Very High	Moderate	Very High	Moderate	Very High
MU6-02	Scarborough Beach	High	Very High	Moderate	Very High	Moderate	Very High	Moderate	Very High	Low	Very High
MU6-03	Brighton Beach	High	Very High	Moderate	Very High	Moderate	Very High	Moderate	Very High	Low	Very High
MU6-04	Peasholm Beach	High	Very High	High	Very High	High	Very High	Moderate	Very High	Moderate	Very High
MU6-05	Scarborough Vegetated Dunes	Moderate	Moderate	Moderate	Moderate	Low	Moderate	Low	Moderate	Low	Moderate
MU6-06	Scarborough Beach Carpark	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-07	Scarborough Amphitheatre	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Low	Moderate	Low	Moderate
MU6-08	Scarboro SLSC	Moderate	Moderate	Moderate	Moderate	Low	Moderate	Low	Moderate	Low	Moderate
MU6-09	Scarborough Beach Pool	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
MU6-10	Scarborough Beach Restaurant	Low	Moderate	Low	Moderate	Low	Moderate	Low	Moderate	Low	Moderate
MU6-11	Scarborough Playground and Skate Park	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
MU6-12	Scarborough Beach carpark south	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-13	Brighton Beach carpark	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
MU6-14	Scarborough access, amenity and minor infrastructure	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate

APPENDIX

H

EROSION RISK ASSESSMENT OUTCOMES



now



Erosion Risk Ratings						
		Present Day (2022)	2030	2045	2070	2122
CHRMAP Asset ID	Asset	Risk Ratings				
MU1-01	Watermans Bay Beach	High	High	Extreme	Extreme	Extreme
MU1-01	Uncontrolled - Watermans Bay Beach	High	High	Extreme	Extreme	Extreme
MU1-02	Watermans Bay Dog Beach	Medium	High	High	Extreme	Extreme
MU1-03	Watermans vegetated dunes	Medium	Medium	High	Extreme	Extreme
MU1-03	Uncontrolled - Watermans vegetated dunes	Medium	High	High	Extreme	Extreme
MU1-04	Watermans GSC revetment	Medium	Medium	High	High	High
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Very Low	Very Low	Medium	High	Extreme
MU1-06	Lookout and amenities, Watermans Bay	Low	Low	Medium	High	High
MU1-05	Uncontrolled - West Coast Drive, footpath and services (Beach Rd to Mary St)	Medium	Medium	High	Extreme	Extreme
MU1-06	Uncontrolled - Lookout and amenities, Watermans Bay	Medium	Medium	Medium	High	High
MU1-07	Car park and lookout, Margaret St	Medium	Medium	Medium	High	High
MU1-08	Watermans access, amenity and minor infrastructure	Medium	Medium	Medium	High	High
MU2-01	North Beach Dog Beach	Medium	High	High	Extreme	Extreme
MU2-02	North Beach (North)	Medium	High	High	Extreme	Extreme
MU2-03	North Beach (South)	Medium	High	High	Extreme	Extreme
MU2-04	North Beach access, amenity and minor infrastructure	Medium	Medium	Medium	High	High
MU2-05	North Beach Vegetated Dunes	Medium	Medium	High	Extreme	Extreme
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Medium	Medium	High	Extreme	Extreme
MU2-07	North Beach Revetment and Jetty	Medium	Medium	High	High	High
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Very Low	Very Low	Medium	High	Extreme
MU3-01	Mettams Pool Beach	High	High	Extreme	Extreme	Extreme
MU3-02	Parking Area, Saunders St	Medium	High	High	Extreme	Extreme
MU3-03	Mettams Pool public toilets	Medium	Medium	High	Extreme	Extreme
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Very Low	Very Low	Medium	High	Extreme
MU3-05	Mettams vegetated dunes	Medium	Medium	High	Extreme	Extreme
MU3-06	Mettams access, amenity and minor infrastructure	Medium	Medium	Medium	High	High
MU4-01	Bennion Beach	Medium	High	High	Extreme	Extreme
MU4-02	Trigg Beach Dog Beach	Medium	High	High	Extreme	Extreme
MU4-03	Trigg Beach North	Medium	High	High	Extreme	Extreme
MU4-04	Trigg North Vegetated Dunes	Medium	Medium	High	Extreme	Extreme
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Very Low	Very Low	Medium	High	Extreme
MU4-06	Car park between Bennion and Bailey Streets	Very Low	Very Low	Medium	High	High
MU4-07	Parking area, Trigg Place	Very Low	Very Low	Medium	High	High
MU4-08	Trigg North access, amenity and minor infrastructure	Medium	Medium	Medium	High	High
MU5-01	Trigg Beach	Medium	High	High	Extreme	Extreme
MU5-02	Trigg Beach South	Medium	High	High	Extreme	Extreme
MU5-03	Trigg South Vegetated Dunes	Medium	Medium	High	Extreme	Extreme
MU5-04	Trigg Surf Lookout	Low	Low	Medium	High	High
MU5-05	Parking area, Trigg Beach north	Very Low	Very Low	Medium	High	High
MU5-06	Trigg Beach SLSC building 1	Very Low	Very Low	Very Low	Medium	High
MU5-07	Trigg Beach SLSC building 2	Very Low	Very Low	Very Low	Medium	High
MU5-08	Trigg Beach Café	Very Low	Very Low	Medium	High	Extreme
MU5-09	Parking area, Trigg Beach central	Very Low	Very Low	Very Low	Medium	High
MU5-10	Trigg South access, amenity and minor infrastructure	Very Low	Medium	High	High	Extreme
MU5-11	Surfing WA Headquarters	Very Low	Very Low	Very Low	Medium	High
MU5-12	Trigg Beach Carpark	Very Low	Very Low	Very Low	Medium	High
MU6-01	Scarborough Beach North	Medium	High	High	Extreme	Extreme
MU6-02	Scarborough Beach	Medium	High	High	Extreme	Extreme
MU6-03	Brighton Beach	Medium	High	High	Extreme	Extreme
MU6-04	Peasholm Beach	Medium	High	High	Extreme	Extreme
MU6-05	Scarborough Vegetated Dunes	Medium	High	High	Extreme	Extreme
MU6-06	Scarborough Beach Carpark	Very Low	Very Low	Very Low	Medium	High
MU6-07	Scarborough Amphitheatre	Medium	Medium	Medium	High	High
MU6-08	Scarboro SLSC	Medium	Medium	Medium	High	High
MU6-09	Scarborough Beach Pool	Very Low	Very Low	Medium	High	Extreme
MU6-10	Scarborough Beach Restaurant	Very Low	Very Low	Medium	High	Extreme
MU6-11	Scarborough Playground and Skate Park	Very Low	Very Low	Medium	High	High
MU6-12	Scarborough Beach carpark south	Very Low	Very Low	Very Low	Medium	High
MU6-13	Brighton Beach carpark	Very Low	Very Low	Very Low	Medium	High
MU6-14	Scarborough access, amenity and minor infrastructure	Very Low	Medium	High	High	Extreme

APPENDIX

I

EROSION VULNERABILITY ASSESSMENT OUTCOMES



now



Erosion Vulnerability Ratings						
		Present Day (2022)	2030	2045	2070	2122
CHRMAP Asset ID	Asset	Vulnerability Ratings				
MU1-01	Watermans Bay Beach	High	High	Very High	Very High	Very High
MU1-01	Uncontrolled - Watermans Bay Beach	High	High	Very High	Very High	Very High
MU1-02	Watermans Bay Dog Beach	Medium	High	High	Very High	Very High
MU1-03	Watermans vegetated dunes	Medium	Medium	High	Very High	Very High
MU1-03	Uncontrolled - Watermans vegetated dunes	Medium	High	High	Very High	Very High
MU1-04	Watermans GSC revetment	Medium	Medium	High	Very High	Very High
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Low	Low	High	Very High	Very High
MU1-06	Lookout and amenities, Watermans Bay	Low	Low	Medium	High	High
MU1-05	Uncontrolled - West Coast Drive, footpath and services (Beach Rd to Mary St)	High	High	Very High	Very High	Very High
MU1-06	Uncontrolled - Lookout and amenities, Watermans Bay	Medium	Medium	Medium	High	High
MU1-07	Car park and lookout, Margaret St	Medium	Medium	Medium	High	High
MU1-08	Watermans access, amenity and minor infrastructure	Medium	Medium	Medium	High	High
MU2-01	North Beach Dog Beach	Medium	High	High	Very High	Very High
MU2-02	North Beach (North)	Medium	High	High	Very High	Very High
MU2-03	North Beach (South)	Medium	High	High	Very High	Very High
MU2-04	North Beach access, amenity and minor infrastructure	Medium	Medium	Medium	High	High
MU2-05	North Beach Vegetated Dunes	Medium	Medium	High	Very High	Very High
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	High	High	Very High	Very High	Very High
MU2-07	North Beach Revetment and Jetty	Medium	Medium	High	High	High
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Low	Low	High	Very High	Very High
MU3-01	Mettams Pool Beach	High	High	Very High	Very High	Very High
MU3-02	Parking Area, Saunders St	Medium	High	Very High	Very High	Very High
MU3-03	Mettams Pool public toilets	High	High	Very High	Very High	Very High
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Low	Low	High	Very High	Very High
MU3-05	Mettams vegetated dunes	Medium	Medium	High	Very High	Very High
MU3-06	Mettams access, amenity and minor infrastructure	Medium	Medium	Medium	High	High
MU4-01	Bennion Beach	Medium	High	High	Very High	Very High
MU4-02	Trigg Beach Dog Beach	Medium	High	High	Very High	Very High
MU4-03	Trigg Beach North	Medium	High	High	Very High	Very High
MU4-04	Trigg North Vegetated Dunes	Medium	Medium	High	Very High	Very High
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Low	Low	High	Very High	Very High
MU4-06	Car park between Bennion and Bailey Streets	Very Low	Very Low	High	Very High	Very High
MU4-07	Parking area, Trigg Place	Very Low	Very Low	Medium	High	High
MU4-08	Trigg North access, amenity and minor infrastructure	Medium	Medium	Medium	High	High
MU5-01	Trigg Beach	Medium	High	High	Very High	Very High
MU5-02	Trigg Beach South	Medium	High	High	Very High	Very High
MU5-03	Trigg South Vegetated Dunes	Medium	Medium	Very High	Very High	Very High
MU5-04	Trigg Surf Lookout	Low	Low	Medium	High	High
MU5-05	Parking area, Trigg Beach north	Very Low	Very Low	Medium	High	High
MU5-06	Trigg Beach SLSC building 1	Low	Low	Low	High	Very High
MU5-07	Trigg Beach SLSC building 2	Low	Low	Low	High	Very High
MU5-08	Trigg Beach Café	Low	Low	High	Very High	Very High
MU5-09	Parking area, Trigg Beach central	Very Low	Very Low	Very Low	High	Very High
MU5-10	Trigg South access, amenity and minor infrastructure	Very Low	Medium	High	High	Very High
MU5-11	Surfing WA Headquarters	Low	Low	Low	High	Very High
MU5-12	Trigg Beach Carpark	Very Low	Very Low	Very Low	Medium	High
MU6-01	Scarborough Beach North	Medium	High	High	Very High	Very High
MU6-02	Scarborough Beach	Medium	High	High	Very High	Very High
MU6-03	Brighton Beach	Medium	High	High	Very High	Very High
MU6-04	Peasholm Beach	Medium	High	High	Very High	Very High
MU6-05	Scarborough Vegetated Dunes	Medium	High	Very High	Very High	Very High
MU6-06	Scarborough Beach Carpark	Very Low	Very Low	Very Low	Medium	High
MU6-07	Scarborough Amphitheatre	Medium	Medium	Medium	Very High	Very High
MU6-08	Scarboro SLSC	Medium	Medium	High	Very High	Very High
MU6-09	Scarborough Beach Pool	Low	Low	High	Very High	Very High
MU6-10	Scarborough Beach Restaurant	Low	Low	High	Very High	Very High
MU6-11	Scarborough Playground and Skate Park	Low	Low	High	Very High	Very High
MU6-12	Scarborough Beach carpark south	Very Low	Very Low	Very Low	Medium	High
MU6-13	Brighton Beach carpark	Very Low	Very Low	Very Low	Medium	High
MU6-14	Scarborough access, amenity and minor infrastructure	Very Low	Medium	High	High	Very High

APPENDIX

J

INUNDATION RISK ASSESSMENT OUTCOMES



now



Inundation Risk Ratings						
		Present Day (2022)	2030	2045	2070	2122
CHRMAP Asset ID	Asset	Risk Ratings				
MU1-01	Watermans Bay Beach	Low	Low	Medium	Medium	Medium
MU1-02	Watermans Bay Dog Beach	Low	Low	Medium	Medium	Medium
MU1-03	Watermans vegetated dunes	Low	Low	Medium	High	High
MU1-04	Watermans GSC revetment	Low	Medium	Medium	High	High
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Very Low	Very Low	Very Low	Very Low	Medium
MU1-06	Lookout and amenities, Watermans Bay	Very Low	Very Low	Very Low	Very Low	Low
MU1-07	Car park and lookout, Margaret St	Low	Medium	Medium	High	High
MU1-08	Watermans access, amenity and minor infrastructure	Very Low	Very Low	Very Low	Very Low	Low
MU2-01	North Beach Dog Beach	Low	Low	Medium	Medium	Medium
MU2-02	North Beach (North)	Low	Low	Medium	Medium	Medium
MU2-03	North Beach (South)	Low	Low	Medium	Medium	Medium
MU2-04	North Beach access, amenity and minor infrastructure	Very Low	Very Low	Very Low	Very Low	Low
MU2-05	North Beach Vegetated Dunes	Low	Low	Medium	High	High
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Very Low	Very Low	Very Low	Very Low	Medium
MU2-07	North Beach Revetment and Jetty	Low	Medium	Medium	High	High
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Very Low	Very Low	Very Low	Very Low	Medium
MU3-01	Mettams Pool Beach	Very Low	Very Low	Very Low	Very Low	Low
MU3-02	Parking Area, Saunders St	Very Low	Very Low	Very Low	Very Low	Medium
MU3-03	Mettams Pool public toilets	Very Low	Very Low	Very Low	Very Low	Medium
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Very Low	Very Low	Very Low	Very Low	Medium
MU3-05	Mettams vegetated dunes	Low	Low	Medium	High	High
MU3-06	Mettams access, amenity and minor infrastructure	Very Low	Very Low	Very Low	Very Low	Low
MU4-01	Bennion Beach	Low	Low	Medium	Medium	Medium
MU4-02	Trigg Beach Dog Beach	Low	Low	Medium	Medium	Medium
MU4-03	Trigg Beach North	Low	Low	Medium	Medium	Medium
MU4-04	Trigg North Vegetated Dunes	Low	Low	Medium	High	High
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Very Low	Very Low	Very Low	Very Low	Medium
MU4-06	Car park between Bennion and Bailey Streets	Very Low	Very Low	Very Low	Very Low	Medium
MU4-07	Parking area, Trigg Place	Very Low	Very Low	Very Low	Very Low	Medium
MU4-08	Trigg North access, amenity and minor infrastructure	Very Low	Very Low	Very Low	Very Low	Low
MU5-01	Trigg Beach	Low	Low	Medium	Medium	Medium
MU5-02	Trigg Beach South	Low	Low	Medium	Medium	Medium
MU5-03	Trigg South Vegetated Dunes	Low	Low	Medium	High	High
MU5-04	Trigg Surf Lookout	Very Low	Very Low	Very Low	Very Low	Medium
MU5-05	Parking area, Trigg Beach north	Very Low	Very Low	Very Low	Very Low	Medium
MU5-06	Trigg Beach SLSC building 1	Very Low	Very Low	Very Low	Very Low	Medium
MU5-07	Trigg Beach SLSC building 2	Very Low	Very Low	Very Low	Very Low	Medium
MU5-08	Trigg Beach Café	Very Low	Very Low	Very Low	Very Low	Medium
MU5-09	Parking area, Trigg Beach central	Very Low	Very Low	Very Low	Very Low	Medium
MU5-10	Trigg South access, amenity and minor infrastructure	Very Low	Very Low	Very Low	Very Low	Medium
MU5-11	Surfing WA Headquarters	Very Low	Very Low	Very Low	Very Low	Medium
MU5-12	Trigg Beach Carpark	Very Low	Very Low	Very Low	Very Low	Medium
MU6-01	Scarborough Beach North	Low	Low	Medium	Medium	Medium
MU6-02	Scarborough Beach	Low	Low	Medium	Medium	Medium
MU6-03	Brighton Beach	Low	Low	Medium	Medium	Medium
MU6-04	Peasholm Beach	Low	Low	Medium	Medium	Medium
MU6-05	Scarborough Vegetated Dunes	Low	Low	Medium	High	High
MU6-06	Scarborough Beach Carpark	Very Low	Very Low	Very Low	Very Low	Medium
MU6-07	Scarborough Amphitheatre	Very Low	Very Low	Very Low	Very Low	Medium
MU6-08	Scarboro SLSC	Very Low	Very Low	Very Low	Very Low	Medium
MU6-09	Scarborough Beach Pool	Very Low	Very Low	Very Low	Very Low	Medium
MU6-10	Scarborough Beach Restaurant	Very Low	Very Low	Very Low	Very Low	Medium
MU6-11	Scarborough Playground and Skate Park	Very Low	Very Low	Very Low	Very Low	Medium
MU6-12	Scarborough Beach carpark south	Very Low	Very Low	Very Low	Very Low	Medium
MU6-13	Brighton Beach carpark	Very Low	Very Low	Very Low	Very Low	Medium
MU6-14	Scarborough access, amenity and minor infrastructure	Very Low	Very Low	Very Low	Very Low	Medium

APPENDIX

K

INUNDATION VULNERABILITY ASSESSMENT OUTCOMES



now



Inundation Vulnerability Ratings						
		Present Day (2022)	2030	2045	2070	2122
CHRMAP Asset ID	Asset	Vulnerability Ratings				
MU1-01	Watermans Bay Beach	Low	Low	Medium	High	High
MU1-02	Watermans Bay Dog Beach	Low	Low	High	High	High
MU1-03	Watermans vegetated dunes	Low	Low	Medium	Very High	Very High
MU1-04	Watermans GSC revetment	Low	Medium	Medium	Very High	Very High
MU1-05	West Coast Drive, footpath and services (Beach Rd to Mary St)	Very Low	Very Low	Very Low	Low	High
MU1-06	Lookout and amenities, Watermans Bay	Very Low	Very Low	Very Low	Low	Medium
MU1-07	Car park and lookout, Margaret St	Medium	High	High	Very High	Very High
MU1-08	Watermans access, amenity and minor infrastructure	Very Low	Very Low	Very Low	Very Low	Low
MU2-01	North Beach Dog Beach	Medium	Medium	High	High	High
MU2-02	North Beach (North)	Low	Low	Medium	Medium	Medium
MU2-03	North Beach (South)	Low	Low	Medium	Medium	Medium
MU2-04	North Beach access, amenity and minor infrastructure	Very Low	Very Low	Very Low	Very Low	Low
MU2-05	North Beach Vegetated Dunes	Low	Low	Medium	Very High	Very High
MU2-06	West Coast Drive, footpath and services (Malcolm St to James St)	Very Low	Very Low	Very Low	Low	High
MU2-07	North Beach Revetment and Jetty	Low	Medium	Medium	Very High	Very High
MU2-08	West Coast Drive, footpath and services (Sorrento St to Hamersley St)	Very Low	Very Low	Very Low	Very Low	Medium
MU3-01	Mettams Pool Beach	Very Low	Very Low	Very Low	Low	Medium
MU3-02	Parking Area, Saunders St	Low	Low	Low	Low	High
MU3-03	Mettams Pool public toilets	Very Low	Very Low	Very Low	Very Low	Medium
MU3-04	West Coast Drive, footpath and services (Sholl Ave to Bailey St)	Low	Low	Low	Low	High
MU3-05	Mettams vegetated dunes	Low	Low	Medium	Very High	Very High
MU3-06	Mettams access, amenity and minor infrastructure	Very Low	Very Low	Low	Low	Medium
MU4-01	Bennion Beach	Medium	Medium	High	High	High
MU4-02	Trigg Beach Dog Beach	Medium	Medium	High	High	High
MU4-03	Trigg Beach North	Low	Low	Medium	High	High
MU4-04	Trigg North Vegetated Dunes	Low	Low	Medium	High	High
MU4-05	West Coast Drive, footpath and services (near Kathleen St)	Very Low	Very Low	Very Low	Low	High
MU4-06	Car park between Bennion and Bailey Streets	Very Low	Very Low	Very Low	Low	High
MU4-07	Parking area, Trigg Place	Very Low	Very Low	Very Low	Low	High
MU4-08	Trigg North access, amenity and minor infrastructure	Very Low	Very Low	Very Low	Low	Medium
MU5-01	Trigg Beach	Medium	Medium	High	High	High
MU5-02	Trigg Beach South	Low	Low	High	High	High
MU5-03	Trigg South Vegetated Dunes	Low	Low	Medium	High	High
MU5-04	Trigg Surf Lookout	Very Low	Very Low	Very Low	Very Low	Medium
MU5-05	Parking area, Trigg Beach north	Very Low	Very Low	Very Low	Very Low	Medium
MU5-06	Trigg Beach SLSC building 1	Very Low	Very Low	Very Low	Very Low	Medium
MU5-07	Trigg Beach SLSC building 2	Very Low	Very Low	Low	Low	High
MU5-08	Trigg Beach Café	Very Low	Very Low	Very Low	Very Low	Medium
MU5-09	Parking area, Trigg Beach central	Very Low	Very Low	Very Low	Very Low	Medium
MU5-10	Trigg South access, amenity and minor infrastructure	Low	Low	Low	Low	High
MU5-11	Surfing WA Headquarters	Low	Low	Low	Low	High
MU5-12	Trigg Beach Carpark	Low	Low	Low	Low	High
MU6-01	Scarborough Beach North	Low	Low	Medium	High	High
MU6-02	Scarborough Beach	Low	Low	Medium	Medium	Medium
MU6-03	Brighton Beach	Medium	Medium	High	High	High
MU6-04	Peasholm Beach	Low	Low	Medium	Medium	Medium
MU6-05	Scarborough Vegetated Dunes	Low	Low	Medium	High	High
MU6-06	Scarborough Beach Carpark	Very Low	Very Low	Very Low	Very Low	High
MU6-07	Scarborough Amphitheatre	Very Low	Very Low	Very Low	Very Low	High
MU6-08	Scarboro SLSC	Very Low	Very Low	Very Low	Very Low	Medium
MU6-09	Scarborough Beach Pool	Very Low	Very Low	Low	Low	High
MU6-10	Scarborough Beach Restaurant	Very Low	Very Low	Very Low	Very Low	Medium
MU6-11	Scarborough Playground and Skate Park	Very Low	Very Low	Very Low	Low	High
MU6-12	Scarborough Beach carpark south	Very Low	Very Low	Low	Low	High
MU6-13	Brighton Beach carpark	Low	Low	Low	Low	High
MU6-14	Scarborough access, amenity and minor infrastructure	Low	Low	Low	Low	High