

SAFETY BAY SHOALWATER FORESHORE Master Plan Master Plan REPORT





PLEASE NOTE-

This document has been created to be read as an A3 booklet, with a central binder, to allow for ease of reference. Please print at **colour A3 size**, **double sided and select flip on short edge** for best results.

The Master Plan was prepared for the City of Rockingham by:

GHDWOODHEAD

Contact Details

GHDWoodhead Level 10 999 Hay Street Perth WA 6000

Ian Pexton (Lead Landscape Architect)

T: 61 8 6222 8350 E: ian.pexton@ghd.com W: www.ghdwoodhead.com

Contents

00

1

× ,

		_
_		-

1.0 IN	ITRODUCTION	4	4.0 FC	DRESHORE AMENITY	58
		0	4.1	Foreshore Amenity	59
2.0 M	ASTER PLAN	8	4.2	Furniture	60
2.1	Master Plan	9	4.3	Shade and Structure	61
2.2	Study Area	10	4.4	Play	62
2.3	Guiding Principles and Objectives	12	4.5	Art and Interpretation	63
2.4	Foreshore Reserve History	14	4.6	Built Form	64
2.5	Social Context	16	4.7	Waikiki Swimming Platform	65
2.6	Site Characteristics	17	4.8	Hardscape Materials	66
2.7	Parking and Traffic	18	4.9	Foreshore Amenity Plans	67
2.8	Traffic Management	19	4.10	Foreshore Lighting Strategy	71
2.9	Traffic Modelling	20	4.11	Planting Strategy	77
2.10	Pedestrian and Cycle Network	21			
2.11	Signage and Public Art Locations	22	5.0 IN	IDICATIVE COST ESTIMATE	85
2.12	WSUD Infrastructure	23	5.1	Indicative Cost Estimate - Summary	86
2.13	Current Recreational Uses	24	5.2	Indicative Cost Estimate - Section One,	
2.14	Recreational Experiences	25		Boundary Road to Lions Park	87
2.15	Vegetation	26	5.3	Indicative Cost Estimate - Section Two	
2.16	Coastal Adaptation	27		McLarty Road to Carlisle Road	88
2.17	Commercial Traders' Permits	28	5.4	Indicative Cost Estimate - Section Thre	e,
2.18	Master Plan Sections	30	E	Carlisie Road to Berli Street	09
2.19	Master Plan Section One - Boundary to Lions Park	/ Road 32	0.0	Bent Street to Warnbro Beach Road	90
2.20	Master Plan Section Two - McLarty F	Road	6.0 S	TAGING	91
	to Carlisle Street	34	61	Indicative Staging	92
2.21	Master Plan Section Three - Carlisle	Street	6.2	Indicative Staging - Stage 1	93
0.00	to Bent Street	36	6.3	Indicative Staging - Stage 2	94
2.22	Master Plan Section Four - Bent Stre	eet to	6.4	Indicative Staging - Stage 3	95
	Waltible Deach Noau	00	6.5	Indicative Staging - Stage 4	96
3.0 A	CTIVITY NODES	40	6.6	Indicative Staging - Stage 5	97
31	Activity Nodes Map	41	0.0		
3.2	Shoalwater Reserve Activity Node	42			
3.3	Lions Park Activity Node	45			
3.4	Mersey Point Activity Node	47			
3.5	The Pond Activity Node	49			
3.6	Waikiki Foreshore Activity Node	54			
		0-+			



1.0 INTRODUCTION

EXECUTIVE SUMMARY

The Safety Bay and Shoalwater Foreshore Master Plan project will plan for the development and enhancement of this 5.3 km long sector of the Rockingham foreshore reserve, in order to best meet current and future community needs and adapt to a changing coastal environment. The area, as seen in Figure 3, incorporates west and south facing beaches, characterised by a range of coastal attractions that include boat ramps, ferry access to Penguin Island, wind and kite surfing opportunities, recreational swimming, existing coastal dune vegetation and parklands.

The foreshore is a popular segment of the City of Rockingham's coastline. The extensive areas of natural dune vegetation and grass parklands, attracts a diversity of user groups from both near and afar. The natural environment of the foreshore are key distinguishing features of its character and uniqueness.

The site is characterised by a varied coastline influenced by the coastal dune systems vegetation typologies, landform and topography, ocean views; grassed reserves, and infrastructure. Fringed by local roads, residential dwellings and small commercial precincts and Shoalwater Island Marine Park, the foreshore is a connected and highly valued coastline.

Purpose of this report

The master plan will guide the evolution of the foreshore over the next 20 - 30 years. The Safety Bay and Shoalwater Foreshore Master Plan Report is a strategic document that will provide a holistic view of the form and function of the foreshore over this period and assist in developing detailed design prior to implementation. The master plan will also assist in attracting and allocating funding for implementation. The Council adopted purpose of the master plan is to develop a strategic vision for the Safety Bay and Shoalwater Foreshore, that give direction to:

- Realising its tourism potential, including 'marine based tourism', with a focus on the emerging wind and kite surfing industry;
- Coordinating the existing and future commercial activity within the foreshore:
- Maximising community use by enhancing the existing recreational experiences; and
- Protecting key environmental and built assets.

The Safety Bay and Shoalwater Foreshore is an important asset to the local and wider community, who recreate within the reserve, at the beach and at the Shoalwater Islands. As a result, understanding the community's desires and vision for the area was fundamental to creating a master plan that integrates the needs of the community.

The master plan was adopted by the City of Rockingham in December 2019.



Figure 1. Waikiki Beach







2.0 MASTER PLAN



The master plan project will plan for the development and enhancement of this 5.3 km long sector of the Rockingham foreshore reserve and the abutting road reserves, from Boundary Road, Shoalwater to Warnbro Beach Road, Safety Bay.



Figure 4. Site Location Plan

2.2 STUDY AREA

Project Site Sections

During site analysis investigations, as a way of tracking findings and observations, the foreshore was separated into four sections. These sections were established at logical locations based on a desktop study and each section includes one of the four activity nodes outlined in the project scope. An additional activity node has been identified at the Shoalwater Reserve. The four project sections include:

- 1 Section One: Boundary Road to McLarty Road -Including Lions Park Activity Node
- ² Section Two: McLarty Road to Carlisle Street -Including Mersey Point Activity Node
- 3 Section Three: Carlisle Street to Bent Street -Including The Pond Activity Node
- 4 Section Four: Bent Street to Warnbro Beach Road -Including Waikiki Foreshore

Scope Activity Nodes:

) Lions Park

1

2

3

4

5

Mersey Point

- The Pond
- Waikiki Foreshore

Additional Activity Nodes:

Shoalwater Reserve



Figure 5. Project Site Sections



GUIDING PRINCIPLES AND OBJECTIVES

Substantial consultation and engagement has been undertaken to develop the design drivers for the foreshore. The engagement process began with an online Community Values Survey which asked guestions about how the foreshore is used, what is valued and where improvement could be realised. The community and other stakeholders contributed strongly to the survey with over 650 responses being received. Engagement has been with a wider range of stakeholders including local residents, local business owners, local clubs, tourists, people that visit for passive and active recreational purposes, and also the City of Rockingham's Council.

2.3

The consultation feedback from the community and stakeholders contained typical coastal foreshore active and passive recreational uses and specific requests around each activity node.

The Design Drivers Report was adopted by the City of Rockingham in June 2019.

The design drivers have been categorised into complimentary groups and these have formed the guiding principles and objectives.

RECREATION



Objectives

- Increase shade throughout the foreshore through the careful inclusion of trees and shelters.
- Include additional and upgraded picnic facilities including barbecues, shade shelters, drink fountains, bins etc.
- Consider the potential to increase parking provisions, including bus parking, along with direction on how it should be managed.
- Incorporate additional public toilets/ change room facilities consistent with the direction to be provided in the City's 'Parks Provision Policy'.
- Consider the outcomes of the City's 'Coastal Management Study' by incorporating complimentary uses and infrastructure to support the strategic intent for the boat launching facilities.



Objectives

- Create safe pedestrian and cycle access paths and/or boardwalks along the full length of the foreshore, with consideration to connectivity beyond the site boundaries, and improved all abilities beach access.
- Allow for improved pedestrian access to the foreshore from the surrounding suburbs across Arcadia Drive and Safety Bay Road.

Objectives

ENVIRONMENT



• Protect and enhance the natural assets of the foreshore, such as the dune system and coastal environment.

• Have due regard to the findings within the City's 'Coastal Hazard Risk Management and Adaptation Plan' in recommending proposed improvements

GUIDING PRINCIPLES AND OBJECTIVES 2.3



- treatment, in accordance with Water Sensitive Urban Design principles, where drainage outlets enter the foreshore.
- master plan to provide improved security along the foreshore.
- Investigate ways to reduce traffic speeds along Arcadia and Safety Bay Road.

complementary palette of furniture, materials and signage.

- Incorporate the opportunity for artwork and commemorative interpretations at appropriate locations.
- Design viewing nodes or similar that capitalise on the aspect across the Shoalwater Marine Park and Warnbro Sound (and incorporate interpretative signage as appropriate).

Objectives

SOCIAL, CULTURAL AND ECONOMIC DEVELOPMENT



• Investigate the potential for permanent leisure based commercial activities, such as cafe's, bars and restaurants, in strategic locations.

• Provide direction to the location of Traders Permits and the appropriateness of supporting infrastructure.

• Investigate locations for temporary food vans/truck locations and allow for appropriate access and infrastructure.

FORESHORE RESERVE HISTORY 2.4



It is likely that the Islands were utilised to some extent by the south-west Aboriginal people, known as **Noongar**, both before the rise in sea level when the Islands were a part of the Swan Coastal Plain and afterwards.

Records show the Plain was rich in resources and consequently supported a fairly dense population of the Noongar people.

1600

1616 - The first European contact in Western Australia was recorded when Dutch explorer Dirk Hartog landed on the west coast.





FORESHORE RESERVE HISTORY 2.4

Paul Seaforth McKenzie, squatted intermittently on Penguin Island from around 1914.



1900

The Island was gazetted a reserve for public use in 1918, an annual lease was granted to McKenzie. He developed a holiday resort on the island.



Land developer, A.J.H. Watts, offered building lots for sale at Safety Bay in the Safety Bay Townsite Estate and the Penguin Estate. The area was promoted as 'resembling the famous Waikiki Beach of Honolulu', with the beach 'free from sharks and undertow, with unlimited space of safe water for speedboats and surfboards in addition to good fishing'.



1940's - Penguin Island





gazetted as a Reserve for fresh water. The existence of the lake is due to the deposition of sand during the formation of the Rockingham Plain.



1935 - Boy scouts at Safety Bay



The original **Yacht Club** building was built in 1947, and comprised a nissen hut located west of the current building, on the beach.







1961 - Shoalwater





The foreshore is a place where people come individually, with family and with friends. They come to socialise, relax, make memories, explore the area, exercise and enjoy the outdoors. Some will spend a short time others will spend the entire day. For the majority of people it is about summertime coastal fun, icecreams, picnics, sunburn, playing in the water, kick a ball. It is shared by locals, visitors and tourists.









water

summer

icecream

friends

family

holidays

memories











SITE CHARACTERISTICS

The foreshore is characterised by its white sand beaches, vegetated dunes and parkland recreational areas reinforced by the Shoalwater Islands and Marine Park. Areas around the nodes are active and populated and areas within the dunes are more isolated and remote. The rolling typography of the dunes and the elevated views across the emerald ocean continuously draw people to the site. The site is punctuated with facilities such as playgrounds, shade shelters, barbecues, toilet and carparks.

2.6









beach dune

island

park

shade

play

barbecue









Parking and Traffic Strategy

The proposed changes to the carparking and traffic conditions are the result of the findings from the Road Network and Parking Analysis Report (GHD 2019), which suggest an increase in carparking facilities across the site would be beneficial to the foreshores accessibility, connectivity and overall user comfortability. Along with an increase in carparking, the report found pedestrian connectivity to be lacking from the foreshore to surrounding neighbourhoods. Carparking throughout the foreshore reserve has been rationalised and designed in accordance with AS2890.1 Off Street Parking & AS2890.5 On Street Parking. Overall there is a 29% increase in carpark numbers.

Many of the existing carparks have excessive space for manoeuvring with large areas of asphalt. Opportunities to reduce the large impervious area has been realised throughout the foreshore reserve.

Wherever feasible WSUD has been incorporated into the carpark through the implementation of rain gardens and swales. Kerbs have been avoided where possible to allow for overland flow into WSUD devices. Tree planting has also been incorporated to provide shade and to reduce the urban heat island effect. When appropriate, along Acacia Drive and Safety Bay Road on street parking has been introduced to provide parking options between activity nodes. This will improve cyclist safety through less cars parking in the on-street cycle lane. This is in response to the recommendations in the Road Network and Parking Analysis Report (GHD 2019).

The proposed parking strategy aims to provide:

- Disabled carparks are proposed at all major nodes;
- Grassed overflow parking for peak periods and events at The Pond;
- Trailer parking at the existing boats ramps has been rationalised and has had an overall increase and
- Bus parking is located at Mersey Point for Penguin Island tourists and visitors.



Figure 7. Parking and Traffic Strategy

2.8 TRAFFIC MANAGEMENT

Traffic Management Strategy

A traffic management strategy has been developed for Safety Bay Road and Arcadia Drive to address the findings of the Road Network and Parking Analysis Report (GHD 2019). The report found that 85% of vehicle traffic exceeded the posted speed limit at various locations along Arcadia Drive and Safety Bay Road. Particular areas of high vehicle activity and pedestrian crossing movement, such as Shoalwater Reserve, Mersey Point and along Waikiki Foreshore, were identified as key locations for intervention.

A series of traffic interventions are proposed to slow traffic and improve the safety for pedestrians and vehicle manoeuvres at accesses and intersections. These measures are generally located where pedestrian crossing demand occurs.

The detailed sighting location of traffic interventions will require consideration of tracking requirements for the design vehicles particularly where located in close proximity to intersections, adequate width of island to accommodate parents with prams, sight distance to the device and pedestrian crossing sight distance. The proposed interventions are not definitive and a combination of other measures can be considered at future design stages.

The potential for a 40 km/h street environment along all or part of Arcadia Drive and Safety Bay Road is acknowledged as a treatment which warrants further consideration during the detail design stages.

There is potential for Arcadia Drive, in proximity to Mersey Point, to be realigned to reduce the curvature of the bend and increase the capacity for the proposed dual use path and an on-road cycle lane.





Traffic Modelling Strategy

The traffic modelling strategy for Arcadia Drive and Safety Bay Road for the master plan is derived from the documents: Guide to Traffic Management Part 8 - Local Area Traffic Management (Austroads) and Application Guidelines for Speed Zoning (Main Roads WA), with the aim of achieving slower traffic speed at key crossing points along the foreshore.

The alignment of Arcadia Drive (between Boundary Road and Safety Bay Road roundabout) and Safety Bay Road (between Safety Bay Road roundabout and Malibu Road) are predominantly linear on levelled topography with large bends along the alignment following the foreshore. Areas where slower speed can currently be achieved are at the Safety Bay Road roundabout and the bend on Arcadia Drive at Mersey Point, which can be sign posted at 40 km/h.

Figure 10 illustrates the modelled speed at key points along the foreshore based on the traffic interventions proposed under Section 2.8 Traffic Management Strategy. The diagram shows a high-level estimate of the speed approaching and departing the proposed raised refuge islands to be about 10-11 km/h slower. Safety Bay Road roundabout also contributes to traffic calming along the foreshore.

In sections along the foreshore where traffic calming measures are not necessarily required the posted speed limit can be achieved to allow for the smooth traffic flow particularly for long vehicles such as busses and boat trailers.







Figure 10. Traffic Modelling Strategy

2.10 PEDESTRIAN AND CYCLE NETWORK

Pedestrian and Cycling Strategy

The proposed pedestrian and cycling network creates an inclusive connected path network which is naturally legible and offers visitors a range of experiences.

A 3m wide dual use path (DUP) forms the spine of the foreshore connecting the entire foreshore reserve. The proposed DUP is predominantly a new alignment in Shoalwater and it closely follows the existing path in Safety Bay. It caters for walking, running, cycling, prams, wheelchairs and dog walking. The red asphalt finish is visually recognisable aiding in natural wayfinding. This path moves between vegetated dunes to turfed lawn areas and through activity nodes creating a varied experience for users. Slow points around activity nodes and physical separation at carpark areas, where space permits, delivers a safer network. This is supported by a network of minor footpath connections to assist with circulation. This can be seen in detail in the master plan enlargements.

Existing dedicated cycle lanes on Arcadia Drive and Safety Bay Road will remain for higher speed/commuter cyclists.

Pedestrian connections across Arcadia Drive and Safety Bay Road have been enhanced with pedestrian refuges within the medians making crossing easier and safer. These connect to the DUP, activity areas and through to the beach. The existing connections and footpath along the back of kerb of Arcadia Drive have been rationalised and additional connections added to maximise connectivity and legibility.

Beach access has also been rationalised to protect the natural dune environment. This includes the removal of some access points and also the formalisation of most paths to help with dune restoration. Wheelchair accessible beach access points have been incorporated at the Shoalwater Activity Node and also Lions Park. The existing access at Waikiki has been retained.

Educational and interpretation boardwalks have been proposed between Lions Park and Mersey Point and to the edge of Tern Island to provide safe access to these unique nature sites whilst controlling pedestrian movement and protecting the flora and fauna.





SIGNAGE AND PUBLIC ART LOCATIONS

Signage and Public Art Strategy

The wayfinding signage strategy creates a network of directional and information signs to inform locals, visitors and tourists of the key features of the foreshore. The signage will include information such as: how to get there, how long it might take and where amenities such as toilets, showers and drinking fountains might be located.

Major signage boards are positioned at major entrance to the reserves, primarily around the activity nodes. Secondary signs are positioned within and between nodes where decision points are located such as connections to the local path network or beach access tracks. Directional signs are to be positioned at all connection points.

Interpretive signs will be separate to the wayfinding signage and will tell recent and historical stories of the areas, provide more information on site features such as ecosystems, coastal processes etc. These will be located around points of interest along boardwalks in the dune or at viewing points.

The design and style of the signage will be in accordance with the City's POS Signage Strategy which is currently under development.

Public art is located in the activity nodes. The public art will be structural elements as well as integrate elements such as custom nature play or murals across walls and paths.





WSUD Strategy

The WSUD infrastructure is designed to be in accordance with the WSUD principles of the Stormwater Management Manual for Western Australia (DoW 2004-2007) and the Planning Policy 3.4.3 Urban Water Management (CoR).

The strategy aims to capture the first 15mm of small frequent rainfall events and treat the water as close to the source as practicable. Elements utilise the high infiltration rate of the sandy soils. The proposed WSUD elements are integrated into the master plan to be visually appealing and provide high quality urban amenity.

Utilising existing drainage pits the proposed treatment occurs either within its own catchment or the adjoining catchment, wherever space permits. A combination of vegetated basins within the sand dunes, vegetated swales adjoining carparks, and rain gardens within carparks are proposed at low points in the typography. Basins are typically proposed within the low points and natural basin of the sand dunes to minimise disturbance and earthworks.

Figure 13 shows the location and extent of each catchment and the table shows the volumes incorporated into the master plan. All catchments are catered for except numbers 18 and 20 which are Watercorp Catchments and also catchment 31 where space is extremely limited. The City is in discussions with Watercorp in regard to up-stream interventions to reduce the pressure on catchments 18 and 20. A full elevation and geotechnical investigation is required at detailed design to confirm levels in support of the swale concept, along with a pit and pipe assessment to inform the ultimate structure of the network.





Sub	WSUD	Master Plan Response
Gatchinient	Requirement	(area (m2)x depth (m)= volume (m3))
	(m3)	
16	73.66	250x0.3=75
17	317.39	1100x0.3=330
18	1404.93	WC Catchment
19	146.07	500x0.3=150
20	1238.83	WC Catchment
21	97.41	330x0.3=99
22	461.70	1550x.3=465
23	19.37	120x0.3=36
24	73.03	250x0.3=75
25	112.94	400x0.3=120
26	47.25	155x0.3=36
27	36.81	125x0.3=37.5
28	684.04	2700x0.3=810
29	477.35	2940x0.3=882
30	305.19	2700x0.3=810
31	1256.59	Does not comply
32	127.82	Utilise Existing System
S June Rd		Aalikiki Rd
		Q _ 1011

CURRENT RECREATIONAL USES

The foreshore currently accommodates a range of water and land based uses. From site observations and the community survey an extensive list of uses were identified. These uses are all about passive and active recreation exploring the great outdoors; water, wind, rain and sunshine. Individually and with family and friends, the foreshore is a gateway for many of the water based activities.

2.13









swim paddle

kite

walk

relax



fish





RECREATIONAL EXPERIENCES

Recreational Experiences Strategy

2.14

Recreational experiences along the foreshore have been reviewed and rationalised in accordance with the design drivers.

The master plan incorporates the following recreational experiences along the foreshore:

- All play equipment to be replaced or upgraded with new modern adventure play elements that will be engaging and inclusive for all ages and abilities;
- Facilities for canoe and kayaking will be introduced at Shoalwater Reserve and Lions Park;
- Kite surfing has been reinforced at The Pond with additional facilities provided;
- An All Ages Play Space has been introduced at The Pond activity node adjacent to the all ages playground to create a node of play activities;
- Showers, barbecues and picnic facilities have been introduced to all recreational nodes along the foreshore to cater for a range of groups and activities, and provide options and variety for visitors;
- Boardwalks are located between Mersey Point and Lions Park and also through the dunes at The Pond. The boardwalks will provide a nature experience and incorporate interpretation;
- New and relocated fitness facilities are positioned along the DUP;
- Mersey Point has been reinforced as a tourism node for Penguin Island;
- Lookouts have been positioned at high points to maximise vista opportunities; and
- New cafés will be located at The Pond and Waikiki Node.



Figure 14. Recreational Activities



Vegetation Strategy

The vegetation strategy for the foreshore will provide additional amenity and shade for people, and increase habitat and ecosystem connections across the foreshore.

The key aspects of the vegetation strategy are:

- Incorporation of CPTED principles throughout the design to ensure plant and shrub heights are kept below 500mm along footpaths and at key footpath intersections;
- Incorporation of WSUD in and around the carparks and also for treatment of the wider local catchments;
- Canopy trees incorporated in appropriate locations to provide shade in recreational areas;
- Vegetation positioned to assist in the creation of human scale space and 'rooms' throughout the foreshore;
- Vegetation has been positioned in strategic locations to provide protection from prevailing summer wind around barbecue nodes and shade structures;
- Revegetation of the dune system including some areas of turf to be converted into planting to establish habitat for fauna and provide dune stabilisation;
- All existing trees to be retained;
- Additional planting to provide visual amenity;
- Vegetation has been positioned in strategic locations to provide a buffer from the road;
- A coastal urban style of vegetation around The Pond and Mersey Point activity nodes including planting in raised planter boxes;
- Provide definition for integrated 'rooms' within the landscape for passive and active recreation; and
- Grass mounding to provide a place to play and sit, create interest, provide space definition, and to create a buffer from the road.





Coastal Adaptation Strategy

The City of Rockingham's Coastal Hazard Risk Management and Adaptation Plan (Cardno 2018) has been reviewed and considered throughout the development of the master plan. The master plan includes the coastal erosion modelling from the CHRMAP which outlines areas at risk of coastal erosion and inundation.

The modelling identified that the whole coastline of Shoalwater and Safety Bay is subject to coastal hazards including both erosion and inundation and that these hazards are projected to increase into the future.

Structures such as commercial buildings and new toilet blocks, where possible, are positioned in locations which are not subject to short-term erosion. The master plan shows where revetment walls are required to protect the assets.

At The Pond, where parts of the proposed built form and infrastructure is below the 2030 erosion line, coastal protection has been allowed for.

Figure 16 shows the predicted 2030 and 2070 erosion lines.



2.17 COMMERCIAL TRADERS' PERMITS

Commercial Traders Strategy

Commercial traders support the local economy and provide vibrancy to the foreshore environment. They also encourage people to stay for longer and visit at different times of the day. The temporary traders offer visitors equipment and guidance for various activities such as kayaking, kite surfing, stand-up paddle boarding and personal training.

Existing permanent traders are located at Mersey Point providing a limited dining experience. During the master plan design and community consultation process it was clear that new dining and licensed alfresco dining experiences would be well supported at The Pond and Waikiki. This would increase amenity and the variety of all day dining opportunities along the foreshore. The proposed commercial opportunities have considered the presence of existing traders within precincts such as Penguin Road and Bent Street. It is anticipated that the commercial uses within the foreshore will complement, rather than compete with, the existing offerings.

Permanent infrastructure in the foreshore, including on the beach, is not recommended to support the temporary commercial traders.

Some of the temporary and permanent commercial traders with permits include:

1 Arcadia Drive (Shoalwater) Foreshore 1 Stand Up Paddle Board Hire Business

2 Arcadia Drive (Shoalwater) Foreshore 2 Stand Up Paddle Board Hire and Kayak Business

3 Lions Park

Kayak Hire business

4 Mersey Point

Stand Up Paddle Board Hire Business Kayak Hire Business Kite Boarding Hire/Lessons Cafe Eco Tourism

5 Shoalwater Foreshore

Kite Boarding Hire/Lessons

6 Safety Bay Foreshore - Near Tern Island Kite Boarding Hire/Lessons

7 Safety Bay Foreshore - Opposite June road Stand Up Paddle Board Hire/Lesson Business



Figure 17. Commercial Traders Strategy





Project Site Sections

During site analysis investigations, as a way of tracking findings and observations, the foreshore was separated into four sections. These sections were established at logical locations based on a desktop study and each section includes one of the four activity nodes outlined in the project scope.

The master plan design reflects information received during the online community consultation process and Design Drivers process. The Design Drivers Report was adopted by he City of Rockingham's Council in June 2019.

The four project sections include:

- 1 Section One: Boundary Road to McLarty Road -Including Lions Park Activity Node
- 2 Section Two: McLarty Road to Carlisle Street -Including Mersey Point Activity Node
- 3 Section Three: Carlisle Street to Bent Street -Including The Pond Activity Node
- 4 Section Four: Bent Street to Warnbro Beach Road -Including Waikiki Foreshore

The following pages explore the master plan in more detail for each section.



Figure 19. Master Plan sections



MASTER PLAN SECTIONS

Adopted General Foreshore Design Drivers	Design Drivers Master Plan Design Resp
Develop a consistent and complementary palette of furniture, materials and signage.	A materials and furniture palette has been developed which reflects the local character and will be applied palette is contained in Section 4.0 of the Master Plan Report. The signage will be in accordance with the
Include additional and upgraded picnic facilities including Barbecues, shade shelters, drink fountains, bins etc.	Additional and upgraded picnic facilities and amenities have been incorporated across the site with a con
Incorporate the opportunity for artwork and commemorative interpretation at appropriate locations.	A range of artwork and interpretative opportunities are incorporated across the site. This includes sculptu Proposed artwork and interpretative opportunities are contained in Section 4.0 of the Master Plan Report
Incorporate CPTED principles within the master plan to provide improved security along the foreshore.	CPTED principles have been incorporated throughout the master plan and will be continued in the subser
Protect and enhance the natural assets of the foreshore, such as the dune system and coastal environment.	To protect and enhance the natural assets of the foreshore the following have been incorporated: Fencing rationalisation of uses to allocate more space for the dunal ecosystem and coastal revetment to prevent e
Create safe pedestrian and cycle access paths and/or boardwalks along full length of foreshore, with consideration to connectivity beyond the site boundaries, and improved all abilities beach access.	A 3m wide DUP has been incorporated along the entire length of the study area and are separated from t permits. Connection across Safety Bay Road and Arcadia Drive have been rationalised and pedestrian re been retained and two additional access points incorporated.
Allow for improved pedestrian access to the foreshore from the surrounding suburbs across Arcadia Drive and Safety Bay Road.	Connection across Safety Bay Road and Arcadia Drive have been rationalised and pedestrian refuges inc which align with side roads and local paths. A secondary path located adjacent to Safety Bay Road and A also been incorporated. Connection from the roads to the DUP, foreshore and secondary path have been
Investigate ways to reduce traffic speeds along Arcadia and Safety Bay Road.	The proposed traffic strategy has been completed and can be found in Section 2.7 of the Master Plan Re
Consider the potential to increase parking provisions, including bus parking, along Arcadia and Safety Bay Road with direction on how it should be managed.	Parking has been increased throughout the foreshore with the rationalisation of existing carparks to reduc carparking bays, the inclusion of on street parking, a grassed overflow parking area for peak periods and buses, kayak tours, and disabled parking at major and secondary nodes.
Increase shade throughout the foreshore through the careful inclusion of trees and shelters.	Additional shade shelters, shade sails and trees have been incorporated throughout the foreshore in care Shade provisions have been focused around activity nodes, playgrounds, barbecue areas, rest points and
Design viewing nodes or similar that capitalise on the aspect across the Shoalwater Marine Park and Warnbro Sound (and incorporate interpretative signage as appropriate).	Viewing nodes of The Pond, Shoalwater Islands have been incorporated utilising high points. The viewing access. Interpretive signage has also been incorporated which will explain the features of the views and the second
Incorporate additional public toilets/change room facilities consistent with the direction provided in the City's 'Parks Provision Policy'.	Existing public toilets/change room facilities have been retained at Shoalwater, new public toilets/change toilets/change room facilities will be incorporated into the proposed new buildings at The Pond and Waiki
Investigate the potential for permanent leisure based commercial activities, such as cafes, bars and restaurants in strategic locations.	Additional cafes at The Pond and Waikiki activity nodes have been incorporated. These buildings could a and other commercial opportunities.
Provide direction to the location of Traders Permits and the appropriateness of supporting infrastructure.	Turfed areas with fitness equipment has been incorporated for outdoor fitness classes. Designated setdo Shoalwater and The Pond activity nodes.
Investigate locations for temporary food vans/truck locations and allow for appropriate access and infrastructure.	Designated access points and setdown areas for food trucks has been incorporated at Shoalwater and T
Allow the opportunity for stormwater treatment, in accordance with Water Sensitive Urban Design principles, where drainage outlets enter the foreshore.	WSUD has been incorporated throughout the foreshore with each catchment being treated through eithe and basins in the public open space and dune areas. The treatments have been located in low points to r vegetated to blend into the foreshore character and have high quality visual amenity. Proposed WSUD int Report.
Have due regard to the findings within the City's 'Coastal Hazard Risk Management and Adaptation Plan' in recommending proposed improvements.	Where possible, proposed buildings and infrastructure have been located behind the 2030 erosion line. A form and infrastructure is below the 2030 erosion line coastal protection has been allowed for.
Consider the outcomes from the City's 'Coastal Management Study' by incorporating complimentary uses and infrastructure to support the strategic intent for the boat launching facilities.	For the purposes of this master plan the current facilities have been retained and supporting facilities and

onse

d across the site. The proposed materials and furniture City's signage strategy guide.

ncentration around major and secondary activity nodes.

ures, murals, integrated interpretive text and play elements.

quent design stages.

g to control access, additional rehabilitation planting, erosion.

the local circulation paths and carparks where space by the existing all abilities beach access has

cluded. Additional connection points have been included Arcadia Drive, setback a few meters from the kerb, has n rationalised to be more direct and naturally legible.

eport.

ce the 'wasted' area and to maximise the number of I events, and designated areas for long vehicles such as

ofully considered locations to minimise disruptions to views. d picnic areas.

areas are generally close to the DUP for easy inclusive he history of the area.

room facilities are proposed for Lions Park and new public ki replacing the existing aging facilities.

Iso accommodate recreation clubs, leisure based activities

own areas for food trucks has been incorporated at

The Pond activity nodes (Sections 3.2 and 3.5).

er rain gardens in carparks, swales adjacent to carparks minimise disturbance and earthworks. These will be terventions can be found in Section 2 of the Master Plan

At The Pond where the parts of the proposed new built

amenities enhanced around them.





Figure 20. Master Plan Section One - Boundary Road to Lions Park





Legend					
	Existing Norfolk Pine Trees				
du *	Proposed Trees				
	Dual Use Path				
6.0	Amenity Planting				
1	Swale Planting				
100	Turf				
	Footpath				
	Shade Structures				
C = 3	Refer to Section 3.0 Activity Nodes				
1	Existing on Street Parking with WSUD				
2	Reconfigured Existing Carpark				
3	Potential Future Parking				
4	DUP Through the Natural Dune System				
5	Proposed on Street Parking				
6	Lookout Shelter at High Point				
7	Formalised connection to St John of God Retreat Centre				
	2030 Erosion Line				
	2070 Erosion Line				

MASTER PLAN SECTION ONE - BOUNDARY ROAD TO LIONS PARK

Design Rationale

The vision for this section is to utilise the topography and varied dunal system to enhance the visitors experience. Key features of the master plan through Section One - Boundary Road to Lions Park are as follows:

- Utilises the existing typography and varied dunal system to maximise vista opportunities out across the Shoalwater Marine Park. Designated areas have been positioned to allow people to take in the view.
- Amenities and facilities are upgraded and spatial arrangements formalised. The focal point for activities and amenities are the Shoalwater Reserve and Lions Park nodes. These nodes are key destination areas and incorporate carparking.
- A 3m wide DUP connecting the entire foreshore. This is typically positioned behind the dunes adjacent to either the carparking or the public open space. The path provides a varied experience and is supported by a connected secondary path network. The sections of the DUP which are located between the dunes and the POS areas will provide a nature experience where visitors are immersed in the character of the site.
- All beach access paths have incorporated an amenity node at entrance points with the DUP, these may include seating, showers, bicycle racks, bins and signage as appropriate for the use.
- Off street carparking has been formalised with more efficient arrangements and additional carparks have been included.
- Street parking incorporates vegetated raingarden with tree planting for WSUD, amenity and shade.
- Lions Park and Shoalwater Reserve activity nodes are located in this section and will be discussed in Section 3.0 of the report.
- The creation of sea kayaking infrastructure and drop off space catering for the two kayaking businesses, the W.A Sea Kayak Club and individual kayakers that use this location to access the Marine Park.

Consultation Outcomes - Design Drivers

The 'Design Drivers' have been derived from the consultation undertaken by the City of Rockingham, including a Community Values Survey, in early 2019. The 'Design Drivers' are designed to inform the content of the master plan and were used in conjunction with other project material.

Increasing the amenity and infrastructure at Shoalwater Reserve was done after the initial site analysis found a lack of basic public open space amenity in this portion of the foreshore. The proposed amenity scale is based on a local park scale.

Adopted Section One Foreshore Design Drivers (Boundary Road to McLarty Road)	Design Drive
Investigate the potential for new public facilities and amenities within the Shoalwater Reserve.	Existing public facilities and an amenities and facilities have be access, play equipment, shad
Investigate the integration of a dual-use footpath into the dune system away from Arcadia Drive.	A DUP has been incorporated Arcadia Drive. The DUP works and to create a varied experier
Utilise the foreshore elevation to leverage views across the Shoalwater Marine Park.	View points have been located areas, within the dunes adjace incorporated for visitors to sto
Improve kite surfing, wind surfing, kayak, etc and provide all abilities access to the beach from the Lions Park carpark.	A designated turfed set up and abilities beach access path inc

ers Master Plan Design Response

nenities have been rationalised and the following new een incorporated: seats, bins, showers, disabled beach e shelters, Barbecues, drinking fountains, etc.

within the dune system and the POS areas, away from with the existing topography to minimise land disturbance nce.

I at natural high points along the DUP within the POS ent to the DUP, and at the activity nodes. Space has been p and take in the views.

d wash down area has been incorporated and an all cluded.





Figure 21. Master Plan Section Two - McLarty Road to Carlisle Street



Legend						
	Existing Norfolk Pine Trees					
da 8	Proposed Trees					
	Dual Use Path					
623	Amenity Planting					
19	Swale Planting					
1999	Turf					
	Footpath					
	Shade Structures					
C = 3	Refer to Section 3.0 Activity Nodes					
1	DUP Adjacent to Arcadia Drive					
2	Formalised Existing Carpark					
3	Proposed Interpretive Boardwalk Connecting Lions Park and Mersey Point					
4	Proposed Granite Revetment Wall					
5	Enhanced Secondary Node with on Street Parking and Amenity Facilities					
6	Potential Future Parking					
7	PTA Bus Stop/Layover Bays					
8	Possible Arcadia road alignement adjustment					
9	Potential Aboriginal Heritage Site					
	2030 Erosion Line					

2070 Erosion Line

MASTER PLAN SECTION TWO - MCLARTY ROAD TO CARLISLE STREET

Design Rationale

The vision for this section is to enhance/upgrade and manage user numbers at Mersey Point and create a tourism destination spot that caters for growing numbers and varied experiences that activates the area. Key features of the master plan through Section Two - McLarty Road to Carlisle Street are as follows:

- An Interpretation boardwalk through the dunes links Lions Park and Mersey Point to encourage a connection and user participation at each node. The two nodes becoming part of the Penguin Island experience.
- Redesign of Mersey Point to offer a wider range of amenity facilities and user activities.
- All beach access paths have incorporated an amenity node at entrance points with the DUP, these may include seating, showers, bicycle racks, bins and signage as appropriate for the use.
- Revegetation of degraded sections of the dune system.
- 3m wide DUP positioned away from Arcadia Drive to better connect the foreshore and provide a more interesting and safer user experience.
- Street parking incorporates vegetated raingarden with tree planting for WSUD, amenity and shade.
- Off street carparking has been formalised with more efficient arrangements and additional carparks have been included.
- The Mersey Point activity node is located in this section and will be discussed in Section 3.0 of the report.

Consultation Outcomes - Design Drivers

The 'Design Drivers' have been derived from the consultation undertaken by the City of Rockingham, including a Community Values Survey, in early 2019. The 'Design Drivers' are designed to form the content of the master plan and were used in conjunction with other project material.

Adopted Section Two Foreshore Design Drivers (McLarty Road to Carlisle Street)	Design Driv			
Review and improve general landscape design and treatment surrounding the Mersey Point facility and associated carpark.	The foreshore master plan allocation of additional spa the DUP and local path ne amenity, and upgraded pa tree planting.			
Examine the potential for the Mersey Point facility to be expanded to allow for a wider range of uses and activities.	The existing Pengos Cafe opportunities have been c take advantage of the view Additional foreshore infrast support the increase in pa amended to enable an inc			
Investigate a new dual-use path alignment around the Mersey Point facility that prioritises pedestrians and cyclists.	A new DUP has been inco extends the entire project by a connected secondary who are passing through. and passing room. The pa			
Increase the potential for additional Penguin Island and Shoalwater Marine Park interpretative and educational signage.	A boardwalk is proposed k incorporate interpretive sig			



Figure 22. Master Plan Section Two - Carlisle Street Boat Ramp

The future of the Carlisle Street boat ramp was determined by the City's Coastal Management Study which could facilitate the need for subsequent changes to the foreshore environment



vers Master Plan Design Response

around Mersey Point improves the amenity through the ace for recreation and tourism activities, the integration of etwork to improve circulation, additional planting for visual ark facilities and rationalisation of the carpark to integrate

has been adjusted and additional alfresco dining reated on the western side of the existing building to v to Penguin island and the Shoalwater Marine Park. tructure has been created around the existing building to tronage. The existing leasehold arrangements need to be rease in dining opportunities.

prporated which forms a section of the longer DUP that study area. Within the Mersey Point area this is supported y path network. The DUP provides separation for those The path will be 3m wide to allow for safe two-way traffic ath is fully separated from the carpark and road network.

between Mersey Point and Lions Park which will nage and extend the Penguin Island tourist experience.





Figure 23. Master Plan Section Three - Carlisle Street to Bent Street

5					Increased public amonity to support wind surfing and other water aports a	
Legend		2	dedicated pedestrian beach access			
	Existing Norfolk Pine Trees	-	Turf			
dia 14	Proposed Trees		Footpath	3	Retained Grassed Parkland with Proposed Mounding, Swale/Amenity Plan	
	, Dual Llas Dath	~ .		4	Bent St Secondary Node with Proposed Amenity Facilities Including a Toile	
	Dual Use Path	4 \$	Shade Structures	6	Beconfigured and Ungraded Parking Facilities to Increase Car and Trailer F	
62.2	Amenity Planting	223	Refer to Section 3.0 Activity Nodes			
127	Swale Planting	1	Revegetated Planting to Dune System	6	Proposed fully accessible Interpretive Boardwalk	
	9				2030 Erosion Line	

2070 Erosion Line

36 | SAFETY BAY SHOALWATER MASTER PLAN REPORT

and

anting

ilet Block

r Parking




MASTER PLAN SECTION THREE - CARLISLE STREET TO BENT STREET

Design Rationale

The key vision for this area is to celebrate The Pond and Tern Island as both a natural feature and a regional destination point. Key features of the master plan through Section Three - Carlisle Street and Bent Street:

- Upgrade of The Pond Activity Node to become the main focal point of the region. Refer to Section 3.0 for more information.
- Removal and creation of an integrated yacht club and community centre along with cafe, alfresco dinging and possible active recreation commercial businesses.
- 3m wide DUP positioned away from Safety Bay Road either behind or through the dunes to better connect the foreshore and provide a safer and more interesting user experience.
- Revegetation of degraded sections of the dune system.
- Rationalise/formalise and increase car/trailer parking.
- Street parking incorporates vegetated raingarden with tree planting for WSUD, amenity and shade.
- Inclusion of turfed mounding in open areas to provide interest, maximise opportunities for views and space definition.
- A secondary path positioned along Arcadia Drive but offset a few meters for safety and users comfort. A planted buffer is positioned between the road and the path. Various access paths provide a connected path network around and to/from the street and beach.
- Off street carparking has been formalised with more efficient arrangements and additional carparks have been included.
- Provide new and enhance existing recreation amenity facilities at Bent Street boat ramp.

Consultation Outcomes - Design Drivers

The 'Design Drivers' have been derived from the consultation undertaken by the City of Rockingham, including a Community Values Survey, in early 2019. The 'Design Drivers' are designed to form the content of the master plan and were used in conjunction with other project material.

Section Three Foreshore Design Drivers (Carlisle Street to Bent Street)	Design Dr
Provide infrastructure to support kite surfing and wind surfing activities in proximity to The Pond and facilitate the potential for it to host events, including national and international events.	A designated turfed riggir Viewing platforms through for event watching. A larg
Provide the opportunity for more interpretative signage and education about The Pond and Tern Bank.	A boardwalk is proposed interpretive and education
Investigate the future of the Safety Bay Yacht Club facility and consider alternative locations and what uses it could accommodate.	The existing Safety Bay Yaresult of it's current struct could accommodate com existing management resisting the proposed commercia
Investigate formalised access across Tern Bank to the beach for pedestrians and maintenance vehicles.	A boardwalk is proposed formalise access to the bo vehicles was reviewed an
Improve the safety and amenity of the foreshore parkland by creating separation from Safety Bay Road.	The location of activities a the coastal side of the for buffer from Safety Bay Ro direct safe access. Some
Explore options for youth play amenity including skate infrastructure.	Youth play and skate infra fitness equipment, a bask and skate facilities.



Figure 24. Master Plan Section Three - Bent Street Boat Ramp

The future of the Bent Street boat ramp will be determined by the City's Coastal Management Study which could facilitate the need for subsequent changes to the foreshore environment

ivers Master Plan Design Response

ng and training area has been incorporated near The Pond. hout the activity node and dunes have been incorporated ge turf area is also available for events for tents etc.

through the dune which will incorporate various nal signage.

Yacht Club facility is nearing the end of its asset life as a tural condition. A new multi-use building is proposed which nmunity use, cafe and other commercial activities. The strictions over the reserve require amendment to allow for al use.

from the activity node to the start of Tern Bank to each for pedestrians. The existing access for maintenance ad remains the best option.

and amenities were reviewed and have been located on reshore, away from the road. The carparking will provide a oad and the path network has been rationalised to provide e existing informal pedestrian footpaths have been retained.

astructure has been incorporated through the provision of ketball half court, an all ages playground, adventure play





Figure 25. Master Plan Section Four - Bent Street to Warnbro Beach Road

	Existing Norfolk Pine Trees	-	Turf	2	Donald Dr Secondary Node with WSUD to Carpark and Proposed Am
da #	Proposed Trees		Footpath		Facilities
	Dual Use Path		Shade Structures	3	Retained Grassed Parkland with Proposed Mounding, Swale/Amenity
62.3	Amenity Planting	223	Refer to Section 3.0 Activity Nodes		2030 Erosion Line
14-16	Swale Planting	1	Revegetated Planting to Dune System		2070 Erosion Line



nenity

Planting

MASTER PLAN SECTION FOUR - BENT STREET TO WARNBRO BEACH ROAD

Design Rationale

This vision for this section is to separate and reduce the amount of grassed parkland, creating a variety of user experiences and to celebrate the natural features of the foreshore. Key features of the master plan through Section Four - Bent Street to Warnbro Beach Road are:

- Revegetation of some grassed parkland areas to reduce maintenance, create additional habitat, creation of WSUD swales and improve amenity and user experience.
- 3m wide DUP positioned away from Arcadia Drive along a similar alignment to the existing DUP to better connect the foreshore and provide a safer and more interesting user experience.
- Upgrade of recreational and amenity facilities at the Waikiki foreshore including shade shelters, barbecues, seating, fitness equipment and beach showers.
- Inclusion of secondary recreation nodes integrated into the length of the foreshore to cater for a range of visitors and groups.
- Inclusion of turfed mounding in open areas to provide interest, maximise opportunities for views and space definition.
- Creation of a swimming platform taking inspiration from similar exemplar spaces from around the world. This will provide family based recreation opportunities that will assist in creating many memories for generations to come. It will also assist in the connection to the ocean and safe diving and swimming opportunities.
- All beach access paths have incorporated an amenity node at entrance points with the DUP, these may include seating, showers, bicycle racks, bins and signage as appropriate for the use.
- Revegetation of degraded sections of the dune system.
- Street parking incorporates vegetated raingarden with tree planting for WSUD, amenity and shade.
- Public rest rooms to be incorporated into the proposed cafe at Waikiki.
- The Waikiki Foreshore activity node is located in this section and will be discussed in Section 3.0 of the report.

Consultation Outcomes - Design Drivers

The 'Design Drivers' have been derived from the consultation undertaken by the City of Rockingham, including a Community Values Survey, in early 2019. The 'Design Drivers' are designed to inform the content of the master plan and were used in conjunction with other project material.

Adopted Section Four Foreshore Design Drivers (Bent Street to Warnbro Beach Road)	Design Dr
Utilise the foreshore elevation to leverage views across Warnbro Sound.	A large viewing area and activity node area which
Improve the safety and amenity of the foreshore parkland by creating separation from Safety Bay Road.	The location of activities a the coastal side of the for buffer from Safety Bay Ro direct safe access.
Explore options for a youth play facility including skate infrastructure.	An adventure playground Skate infrastructure was location due to space res activity node instead.



Figure 26. Master Plan Section Four - Donald Drive Boat Ramp

The future of the Donald Drive boat ramp will be determined by the City's Coastal Management Study which could facilitate the need for subsequent changes to the foreshore environment



vers Master Plan Design Response

cafe with deck has been incorporated at the Waikiki is the natural high point along this section of the foreshore.

and amenities were reviewed and have been located on reshore, away from the road. The carparking will provide a Road and the path network has been rationalised to provide

I has been incorporated into the Waikiki activity node. considered but deemed not to be appropriate in this striction. This facility was incorporated into The Pond



3.0 ACTIVITY NODES

3.1 ACTIVITY NODES MAP

Project Activity Nodes

Five activity nodes were identified in the site analysis where there is currently a higher volume of visitors and a concentration of activities and amenities. The design intent for the activity nodes has been resolved in a greater level of detail due to their complexity and the design rationale for these is explained on the following pages. The five activity nodes include:

1)Shoalwater Reserve Activity Node

2 Lions Park Activity Node

(3) Mersey Point Activity Node

(4) The Pond Activity Node

(5) Waikiki Foreshore Activity Node



Figure 27. Master Plan Activity Nodes





Figure 28. Shoalwater Foreshore Activity Node Concept Plan





SHOALWATER RESERVE ACTIVITY NODE

Activity Node Design Rationale

This vision for the Shoalwater Reserve activity node is to upgrade and enhance the Shoalwater Reserve as a local destination, this is in response to increasing user numbers. Key features of the design are:

- Additional and upgraded amenity and recreational facilities which will activate the reserve for a range of users including shade structure, picnic facilities, barbecues and seating.
- Inclusion of a DUP and minor path network to allow for safer and more logical access for pedestrians and cyclist.
- Additional open space provision for kayak and canoe access to the beach and wash down. A drop off bay for vehicles with kayaks has also been included.
- Utilise high points to maximise viewing opportunities across the Shoalwater Island Marine Park. Key viewing areas have space and seating for people to spend some time and enjoy the view.
- Formalisation of the node arrangement to maximise the use.

- Creation of 'rooms' through planting and mounding to create intimate space where families and friends can meet.
- Accessible beach access for inclusive design.
- Inclusion of a new coastal nature themed play space.
- The potential for a new carpark adjacent to Arcadia Drive has been included to allow for additional carparks. This incorporates raingardens and tree planting for shade, amenity and WSUD treatments.
- Beach access tracks to include nodes with seating, look out, showers and interpretation where appropriate.
- Area for food trucks.
- Swale incorporated into the dunes to treat catchment stormwater runoff.
- Reconfiguration of the carpark to incorporate WSUD devices such as raingardens and swales.
- Existing toilet/change block to be retained.











Figure 30. Shoalwater Activity Node Perspective





Figure 31. Lions Park Activity Node Plan



nd	
	Major Signage/ Wayfinding
	Secondary Signage
	Public Art
	Existing Norfolk Pine Trees
	Proposed Trees
15	Dual Use Path
20	Amenity Planting
37	Swale Planting
	Turf
	Walls
	Footpath
	Shade Structures & Barbecue
1	Relocated Exercise Equipment
2	Proposed Nature Play Space
3	Turf Mounding
4	Indicative Location of Proposed New Toilet Facility (if required)
5	Sand Beach Access
6	Water Sports Wash Down Zone
7	Coastal Interpretation Board Walk
8	Reconfigured & Enlarged Existing Carpark
9	Accessible Beach Access
	2030 Erosion Line
	2070 Erosion Line

Design Rationale

The vision for this node is to upgrade the existing and incorporate new park infrastructure as part of the Shoalwater Marine Park tourism experience. Key features of the design are:

- Accessible beach access for inclusive design.
- Proposed new nature play space with shade sails.
- Integration of the Lions Park to Mersey Point interpretation boardwalk.
- Reconfiguration and enlargement of the existing carpark.
- Inclusion of turfed mounding in open areas to provide interest, maximise opportunities for views and space definition.
- Provision of a turfed area for water sports wash down.
- Relocation and repurpose of existing fitness equipment.
- Additional shade shelters, tables, seating and barbecues for picnics with friends and family gatherings.

- Rationalised DUP route setback from Arcadia Drive behind and through the dunes.
- Additional tree planting for shade and habitat.





Figure 32. Lions Park Activity Node Section





Figure 33. Mersey Point Activity Node Plan



	Major Signage/ Wayfinding
	Secondary Signage
	Public Art
	Existing Norfolk Pine Trees
	Proposed Trees
	Dual Use Path
Cr3	Amenity Planting
Self.	Swale Planting
E. Land	Turf
L	Walls
	Footpath
10	Proposed Shade Structures & Barbecue
1	Coastal Interpretation Board Walk
2	Tourist Bus Stop
3	Existing Penguin Island Ferry Terminal
4	Potential Interpretative Building
5	Existing Carpark Reconfigured
6	New Cafe Alfresco Space
7	Upgraded Existing Play Space
8	Penguin Island Observation Deck
9	Potential Surf Life Saving Building
10	Traffic Management Plateau
1	Beach Access Pathways
12	Bus Terminal
13	Potential Future Parking
14	Potential Aboriginal Heritage Site
	2030 Erosion Line
	2070 Erosion Line

3.4 MERSEY POINT ACTIVITY NODE

Design Rationale

The vision for this node is to provide additional and improved amenity to reinforce it as a tourist precinct for the Shoalwater Marine Park including Penguin Island. The key features of the design are:

- Integration of the Lions Park to Mersey Point interpretation boardwalk.
- Relocate cafe to western side of the existing building and incorporate alfresco.
- Upgrade of the existing play space to be more modern and engaging. This play space would be a coastal themed nature play area.
- Reconfiguration of the existing carpark to incorporate WSUD devices such as raingardens and swales.
- New Penguin Interpretation centre to provide more information for tourists and enhance their experience.
- A Penguin Island observation deck at the natural high points for views across and out across the Marine Park.

- Realigned and upgraded DUP located away from the existing cafe and pedestrian traffic, carpark and Arcadia Drive.
- Secondary path circulation network to safely and logically connect visitors to, from and around the node.
- Creation of more open space to cater for the volume of visitors.
- Proposed Surf Life Saving facilities/storage shed.
- Additional tree plants for shade, habitat and amenity.

A potential Aboriginal heritage site has been identified south of Mersey Point. Any proposed works within this site are required to obtain the necessary approvals under the Aboriginal Heritage Act 1972 prior to the commencement of works.



Figure 34. Mersey Point Activity Node Section







Figure 35. The Pond Activity Node Plan

3.5

THE POND ACTIVITY NODE

Legend

Major Signage/ Wayfinding

Existing Norfolk Pine Trees

Shade Structures & Barbecue

Secondary Signage

Proposed Trees

Amenity Planting

Perspective View

2030 Erosion Line

2070 Erosion Line

	Major Signage	
NUMBER OF STREET	Secondary Sig	
	Public Art	
	Existing Norfol	
8 A	Proposed Tree	
	Dual Use Path	
Carl D	Amenity Planti	
	Swale Planting	
(marine	Turf	
	Walls	
	Footpath	
	Shade Structu	
	Perspective Vie	
	2030 Erosion L	
	2070 Erosion L	

- New Off Street Parking
- All Ages Recreation Node
- **Reconfigured Carpark**
- Amphitheatre
- Possible Mixed Use Community & Commercial Built Form
- Possible Commercial Food & Beverage 6
- The Pond Viewing Platform
- The Pond Alfresco Zone
- Bus & Trailer Parking
- Reconfigured Existing Carpark 10
- Overflow Parking & Kite Boarding Set Up Space
- The Pond Access Track
- Accessible Ramp
- The Pond Public Event Space 14
- **1**5 The Pond Multi-use Event Space & Kite Boarding Training Space
- Accessible Ramp
- All Ages Scooter Track
- All Ages Nature Play Space
- Half Court Basketball
- **Relocated Exercise Equipment**
- **Overflow Parking & Parkland**
- Potential Rock Revetment Wall
- Small Boat Beach Access
- Tern Island Interpretation Trail
- 25 Tern Island Interpretation & Seating Node

Design Rationale

This vision for The Pond activity node is to establish the area as a destination point for the region that celebrates the unique natural features of the site by providing a multitude of recreational experiences and attractions. Key features of the design for this node are:

- surfing.
- range of activities.
- node.

- Waimea Road carpark.
- area.

 Natural and built form features have been introduced to accommodate the anticipated growth in visitor numbers.

• Design which responds to the natural features of the site.

Enhanced event space associated with kite surfing and wind

• All Ages Recreation Node to cater for all ages and abilities and a

 Shade shelters and barbecue areas have been upgraded and spatially arranged to become incorporated as part of the activity

• Large grassed open space with feature stairs, amphitheatre to benefit community events and facilitate kite surfing training.

 Remove existing Yacht Club building in favour of new building/s containing community and commercial uses.

Lookout feature over The Pond utilising foreshore topography.

 Interpretive/ Interpretation boardwalk within Tern Island to celebrate it as a natural feature.

Designated kite/wind surfing rigging area and pond access at

 Reconfiguration of the existing carpark to incorporate tree planting and WSUD devices such as raingardens and swales.

• Additional carparking on road and within a new off street carpark

Bus and trailer parking incorporated along Safety Bay Road.

Grassed multi-use event space and kite board training space.

Grassed overflow parking for peak periods and events.





Figure 36. The Pond Activity Node Section 1



Figure 37. The Pond Activity Node Section 2









Figure 38. The Pond Activity Node Perspective





Figure 39. The Pond Activity Node Boardwalk Perspective





Figure 40. Waikiki Foreshore Activity Node Plan



Legend	
	Major Signage/ Wayfinding
	Secondary Signage
	Public Art
	Existing Norfolk Pine Trees
	Proposed Trees
1997	Dual Use Path
Carol	Amenity Planting
	Swale Planting
	Turf
	Walls
	Footpath
	Shade Structures & Barbecue
1	Relocated Exercise Equipment
2	Relocated Bus Stop
3	Coastal Nature Play Space
4	Reconfigured Carpark
5	Retain Landscape & Infrastructure
6	Waikiki Swimming Platform
7	Retained Accessible Beach Access
8	Waikiki Cafe and Public Toilets
9	Beach Lookout & interpretation
10	Beach Access
	Perspective View
	2030 Erosion Line
	2070 Erosion Line

3.6

WAIKIKI FORESHORE ACTIVITY NODE

Design Rationale

This vision for this node is to utilise visitor numbers to the node and introduce a cafe and lookouts, capitalising on the unique topography and views across Warnbro Sound. Key features in the design for this node are:

- Look out points with interpretation signage at high points.
- Reinforcement of the coastal parkland character through additional and upgraded amenity and recreational facilities. This will activate the reserve for a range of users through including shade structure, picnic facilities, barbecues and seating.
- New cafe with alfresco overlooking the Warnbro Sound.
- Refurbished toilet block to be combined with café and decking area, overlooking Warnbro Sound.
- Jetty from existing universal access ramp to further enhance user experience.
- Retained landscape treatment east of the proposed café.

- Reconfiguration of the existing carpark to incorporate tree planting and WSUD devices such as raingardens and swales.
- New coastal nature play space that caters for a range of ages and abilities.
- Inclusion of turfed mounding in open areas to provide interest, maximise opportunities for views and space definition.
- Relocated and repurpose exercise equipment.





Figure 41. Waikiki Foreshore Section





Figure 42. Waikiki Foreshore Perspective



al with the

4.0 FORESHORE AMENITY

FORESHORE AMENITY 4.1

Introduction

The new amenity and furniture palette will modernise the foreshore while creating a strong sense of place. Over time all existing furniture will be replaced with items from a consistent palette. This will create a strong identity for the Safety Bay Shoalwater Foreshore. Furniture will be functional, robust, inclusive, playful and inviting. Materials reflect the coastal character and the limestone geology of the area. The materiality must respect the muted natural palette of the foreshore and not seek to compete against it. The use of limestone, steel, timber and concrete within the built form and landscape materiality will ensure an integrated outcome is achieved.

The master plan proposes an updated furniture and amenity palette within the five activity nodes and parkland and dune areas in between.

The proposed amenity palette will consist of:

- Barbecues and shade structures;
- Picnic tables and seating;
- Beach showers and wash down stations:
- Fish cleaning stations at boat ramps;
- Drink fountains;
- Bike racks:
- Custom and standard seating;
- All assessable beach access:
- Bollards and fencing;
- Balustrades and handrails:
- Rest rooms:
- Lighting;
- Exercise stations;
- Rubbish bins with enclosures;
- Swimming structure;
- Public Art; and
- Play spaces.

Foreshore Amenity Principles

The amenity strategy for the Safety Bay Shoalwater Foreshore seeks to rationalise, replace and consolidate the existing amenity by:

- The incremental replacement of the existing amenity and infrastructure with the new selection of furniture and infrastructure such as shade structures, play equipment and lighting;
- Using existing and proposed shade trees and wind breaks to locate barbecue nodes and seating;
- Locating seats to take advantage of existing views across the Shoalwater Marine Park, The Pond and Waikiki;
- Ensuring the provision of wash down facilities at all boat ramps and activity nodes;
- Creating barbecue amenity nodes in the five activity nodes and along the foreshore parkland;
- Ensuring that the foreshore amenity items to comprise of a coordinated palette that complement each other and the location:
- Enuring that a holistic view needs to be taken with the arrangement of amenity and furniture across the five activity nodes and foreshore;
- Ensuring that the amenity and furniture should be integrated into and coordinated with the amended foreshore design, structure, garden beds, DUP and footpaths; and
- Ensuring that no new memorial seats are implemented, existing seats to be maintained for the remainder of their asset lifespan, following which the seats are to be removed and the plaque returned to the sponsor.

Note: Further detailed designs will find the most effective seating locations and amenity arrangements

Amenity Selection

The selection of amenity and furniture along the foreshore should be guided by the simple principles of referencing the place, good design and durability to ensure the foreshore design is supported by a robust palette of furniture and amenity. To ensure that this happens it is essential that the existing collection of furniture and amenity be replaced by a cohesive selection, to prevent the design becoming diluted over time.

below points:

- Simple, strong design with materiality that complements the foreshore context:

- coating;
- conditions:
- Be non-obtrusive and be integrated into the design; and
- Utilise steel and concrete to provide a hard wearing modern finish, while accents of timber will soften the appearance.

The amenity and furniture palette selection should be based on the

- Be a combination of off the shelf and custom products;
- Main foreshore seats should be an off the shelf product;
- A furniture palette that allows for wheelchair accessibility;
- Furniture and amenity palette should be easily maintained with the use of suitable coastal paint solutions instead of powder
- Amenity base materiality needs to be suitable for use in coastal































SHADE AND STRUCTURE

Shade and structures provide space definition, shelter from the sun, rain and visual interest. A range of structures will be used across the foreshore. Feature structures will be located at key activity nodes; these will be iconic with the potential for public art integration. Simple structures will be consistent throughout to reinforce the character. These will be smaller for gatherings with family and friends. Materials and colours will reflect the character of the area.

4.3



























Play will be located at the activity nodes where there is a higher concentration of visitors. Play elements will cater for a range of ages and abilities with accessible options incorporated. Coastal themed nature play style elements will be incorporated as they encourage children to engage in creative ways. These will be complemented with some 'off-the-shelf' elements which will provide a pop of colour and more formal structured play. Art will also be integrated into the play to provide a unique experience. Themes will be based on the coastal character of the area.













jump swing laugh climb engage scoot









4.5

ART AND INTERPRETATION

Art and interpretation provides the opportunity to reinforce the character and identity of the foreshore reserves. Local artists can be featured and local stories can be told. Art can be integrated through a wide range of options, from traditional standalone sculptures to integrated murals and interpretation on walls, structures and path surfaces. Play elements can also incorporate art and have themes that reflect the local character.

















SEVERAL BAGS SEED BAG OF NAILS BAG OF BISKETT P

BUILT FORM 4.6

Built form includes permanent commercial outlets, toilet and shower blocks, and community facilities along the foreshore. Built form should be of an appropriate scale so as to not be visually dominant and block views. Materials and built form arrangements should encourage and reinforce the coastal lifestyle of outdoors, sun, sand and weathered patina. They should accommodate summer and winter uses providing shelter from sun, wind and rain.















4.7 WAIKIKI SWIMMING PLATFORM

The proposed swimming platform for Waikiki will take advantage of the water depths at this location to create a destination/recreation facility that allows the community to fully engage with the ocean. Providing for and encouraging diving, jumping and swinging. A suitably designed swimming platform can provide recreation opportunities for all ages and community groups.



















SAFETY BAY SHOALWATER MASTER PLAN REPORT 65

HARDSCAPE MATERIALS

Hardscape materials will reflect the character of the site reinforcing the sense of place. Limestone is part of the geology of the site and will be utilised in various forms. Robust materials such as stone and concrete will be used and accentuated by the softer tones of weathered timber. Some features will be highlighted with weathered steel. All these materials reflect the coastal nature while being hard wearing.

4.8









timber stone concrete natural *texture*

















Figure 44. Master Plan Section One - Boundary Road to Lions Park





- 1 Shade Structure, Barbecue Node with Picnic Seating and Rubbish Bin
- 2 Drink Fountain
- 3 Exercise Node
- 4 Rubbish Bin
- 5 Bike Racks
- 6 Beach Washdown Station
- 7 Stand Alone Seat
- 8 Playspace
- 9 Landscape Walls
- 2030 Erosion Line
- 2070 Erosion Line





Figure 45. Master Plan Section Two - McLarty Road to Carlisle Street



- 1 Shade Structure, Barbecue Node with Picnic Seating and Rubbish Bin
- 2 Drink Fountain
- 3 Exercise Node
- 4 Rubbish Bin
- 5 Bike Racks
- 6 Beach Washdown Station
- 7 Stand Alone Seat
- 8 Playspace
- 9 Landscape Walls
 - 2030 Erosion Line
 - 2070 Erosion Line





Figure 46. Master Plan Section Three - Carlisle Street to Bent Street

1 Shade Structure, Barbecue Node with	5	Bike Racks	2030 Erosion Line
Picnic Seating and Rubbish Bin	6	Beach Washdown Station	2070 Erosion Line
2 Drink Fountain	7	Stand Alone Seat	
3 Exercise Node	8	Playspace	
4 Rubbish Bin	9	Landscape Walls	
	10	Cafe and Built Form	







Figure 47. Master Plan Section Four - Bent Street to Warnbro Beach Road





FORESHORE LIGHTING STRATEGY

Introduction

Lighting within the public realm and along coastal foreshores plays a crucial role in providing light for safe access, events and highlighting landscape features such as trees and artwork. The Safety Bay Shoalwater Foreshore Lighting Strategy needs to tread lightly, finding a balance between extending community activity along the foreshore after the sun has set and the risk of over polluting day time views with lighting infrastructure.

The present lighting infrastructure along this length of foreshore is uncoordinated and inconsistent. There is limited lighting infrastructure in the Shoalwater section north of Mersey Point and possibly an oversupply of lighting between The Pond and Waikiki.

Foreshore Lighting Principles

The lighting strategy seeks to rationalise and consolidate the existing lighting infrastructure by:

- Establishing a foreshore lighting palette through detailed design of the first master plan project to ensure that a foreshore wide lighting infrastructure palette is created;
- Ensuring that foreshore wide, all light locations achieve a consistent lux coverage;
- Identifying key nodes and features to highlight along the foreshore:
- Restraining use of pole top lighting to reduce light pollution and impact on views:
- Ensuring that the detailed lighting designs and the selection of the luminary is consistent;
- Co-locating and the integration of other foreshore infrastructure such as signage and event banners into pole top lights to limit clutter: and
- Providing improved lux levels at key locations to ensure CPTED requirements are met.

Lighting Selection

The selection of a lighting infrastructure palette is critical in creating a well coordinated and integrated outcome. Form and function must play a critical place in the selection process, to ensure that the lighting palette sit within the foreshore as seamless as possible, without becoming a feature themselves. This will ensure that the selected palette will stand the test of time and not become outdated.

Key considerations in the selection of the palette include:

- possible:
- the key activity nodes;
- ouch up and repainting;
- recreation node: and

• Energy efficient luminaries to ensure electrical use along the foreshore is kept to minimum and light bulb life is as long as

• Light fixtures and infrastructure that is best suited to the coastal conditions to guarantee maximum life span;

• Multi-headed pole top lights to reduce the number of poles within

• Specification of two pack epoxy paint (not powder coating) finishes suitable for exterior coastal conditions that allow for easy

 Catenary lights to create a festive mood and create different zones within the activity node to activate The Pond alfresco zone;

• Suitable multi-head pole top lights to light the proposed all ages

• Barbecue and shade structure node lighting into the built form to ensure adequate lighting providing in these areas and minimise the number of pole top lights along the foreshore.





Play Space Lighting



Event Space Lighting



Boardwalk or Lookout Lighting



Footpath, Carpark, Access Lighting



Structural Lighting



Footpath, Carpark, Access Lighting



Structural Lighting



Footpath, Carpark, Access Lighting




Figure 48. Master Plan Section One - Boundary Road to Lions Park





- – DUP Lighting
- --- Beach Access Path Lighting
- Barbecue Node Lighting
- Beach Access Node Lighting
- Landscape Feature Lighting
- Carpark Lighting
- Feature Tree Up Lighting
- Event Lighting
- 2030 Erosion Line
 - 2070 Erosion Line





Figure 49. Master Plan Section Two - McLarty Road to Carlisle Street



- – DUP Lighting
- --- Beach Access Path Lighting
- Barbecue Node Lighting
- Beach Access Node Lighting
- Landscape Feature Lighting
- Carpark Lighting
- Feature Tree Up Lighting
- Event Lighting
- 2030 Erosion Line
- 2070 Erosion Line





Figure 50. Master Plan Section Three - Carlisle Street to Bent Street

- — DUP Lighting
- Beach Access Path Lighting
- Barbecue Node Lighting
- Beach Access Node Lighting
- Landscape Feature Lighting

- Carpark Lighting
- _____ 2030 Erosion Line
 - Feature Tree Up Lighting _____ 2070 Erosion Line
- () Event Lighting







Figure 51. Master Plan Section Four - Bent Street to Warnbro Beach Road

- – DUP Lighting
- Beach Access Path Lighting
- Barbecue Node Lighting
- Beach Access Node Lighting
- Landscape Feature Lighting

- Carpark Lighting
- Feature Tree Up Lighting _____ 2070 Erosion Line
- _____ 2030 Erosion Line
- () Event Lighting



PLANTING STRATEGY

Introduction

In the last ten years foreshore design in Western Australia has developed with landscape architects taking the lead in the transformation of popular public open spaces through the utilisation of their natural assets, foreshores spaces, beaches, water and coast line. In the past foreshore developments lacked basic deigns principles with the design and implementation of public amenity often being led by local government maintenance staff. Holistic and integrated design principles can enhance the existing foreshore and its assets. One such example is the use of amenity planting and trees to separate the often vast foreshore lawn areas into human scale places that provide shade, protection and a feeling of security. The use of plants and trees assist in creating a variety of spaces along the foreshore without disrupting the foreshore aesthetic of parkland, beach and nature.

Precedent examples where planting has played a key part in transforming foreshores in Western Australia include: Esperance Foreshore, Busselton Foreshore, Broome Town Beach, South Perth Foreshore, Koombana Foreshore and Beresford Foreshore,





Foreshore Trees

The inclusion of trees along the foreshore are an integral part of the foreshore master plan. They are important to the quality of the existing environment and play a key role in the creation of the foreshore character. The tree selection has been categorised into two groups, feature trees and coastal shade trees. These two tree types carry out two distinct roles on the foreshore with the feature trees highlighting key locations along the foreshore, providing way finding assistance and creating memories and a sense of place. Coastal shade trees are utilised along the foreshore to assist in the structure of the foreshore and creation of scaled recreation spaces. They also provide shade and protection from the sun and summer wind. The location and placement of all trees along the foreshore must consider sight lines and respect established views.

Trees can assist in:

- The identification of key spaces;
- The separation of the foreshore from adjacent roads;
- The creation of view corridors;
- The creation of habitat:
- The delineation of space; and
- The protection against wind and sun.

Feature Tree Selection:

Araucaria heterophylla (Norfolk Island Pine); and Agonis flexuosa (W.A Peppermint)

Coastal Shade Tree selection:

Agonis flexuosa (W.A Peppermint); Casuarina equisetifolia (Horse Tail Sheoak); Eucalyptus platypus heterophylla (Coastal Mort); Melaleuca lanceolata (Rottnest Island Teatree); and Meterosideros excelsa (New Zealand Christmas Tree).

Foreshore Planting

The planting palette is derived from the endemic shrub and ground cover species of the area and appropriate shade tree species. These species are suited to the coastal environment and have proven performance in the harsh WA coastal environment. Locally native species also support the local ecosystem creating suitable habitat for fauna. All species will be water wise. During the development of the foreshore design CPTED principles should be embed to maximise open sight lines and passive surveillance. Views out to the water will be either framed or left open.

The planting of groundcovers and shrubs along the foreshore can be divided into three distinct zones.

Zone one: Foreshore Dune Vegetation

The existing dune system's endemic plant species will be protected and replanted following strategies implemented to replace exotic invasive species such as several weed species as described in the 2016 Rockingham Foreshore Management Plan. It is recommended that by undertaking the below actions the foreshore dune areas health will be improved:

- Good or Excellent.

Foreshore dune species selection:

Atriplex cinerea (Grey Saltbush);

Carpobrotus virescens (Pig Face);

Conostylis candicans (Grey Cottonheads);

Spinifex hirsutus (Coastal Spinifex);

Spinifex longifolius (Beach Spinifex);

Spyridium globulosum (Basket Bush); and

Olearia axillaris (Coastal Daisy Bush).

• Revegetation to focus on degraded areas adjacent to paths to reduce edge effects, weed colonisation and to enhance native biodiversity and visual aesthetics;

• Removal of threatening processes such as feral animals, inappropriate access, erosion, vandalism and rubbish dumping to encourage natural regeneration and support revegetation; and

• Infill planting to occur in areas of Good and Very Good vegetation condition to increase the vegetation guality of these areas to Very



Foreshore Planting: Zone two: Foreshore Amenity Planting

Foreshore amenity planting is the planting area within the foreshore parkland and the species should be selected from existing WA coastal cultivators and other suitable nurseries. CPTED principles and sight lines along footpaths and the DUP need to be considered with the placement of these species. Foreshore amenity planting also plays a key role in the structure of the foreshore and assisting with breaking up the vast areas of turf.

Foreshore Amenity Planting Selection:

Atriplex cinerea (Grey Saltbush);

Carpobrotus virescens (Pig Face);

Conostylis candicans (Grey Cottonheads);

Chorizema varium (Heart-leaf Flame Pea);

Dampiera coastal beach ball;

Darwinia champani;

Leucophyta brownii (Cushion Bush);

Lepidosperma squamatum (Lepidosperma);

Lomandra longifolia (Spiny-head Mat-rush);

Myoporum parvifolium (Creeping Boobialla);

Olearia axillaris (Coastal Daisy Bush);

Scaevola nitida (Fairy Fan-flower); and

Westringia fruticosa (Coastal Rosemary).

Foreshore Planting: Zone three: WSUD Swales

The introduction of water sensitive urban design swales along the foreshore is to ensure the flow of stormwater was interrupted and treated before it made its way to the ocean. Planting plays a key role in slowing the flow, capturing rubbish, and removing sediments and pollutants before they enter the ocean. The swale plantings have also been utilised to assist in the creation of the foreshore structure and spaces.

WSUD Swale Planting Selection:

Ficinia nodosa (Knobby Club Rush);

Lepidosperma gladiatum (Coast Sword Sedge);

Lepidosperma calcicola (Coastal Sedge);

Melaleuca huegelii (Chenille Honey Myrtle); and

Lepidosperma squamatum (Lepidosperma).





















Figure 52. Master Plan Section One - Boundary Road to Lions Park





Legend

Existing Araucaria heterophylla
(Retain, Protect and Supplement)

- Proposed New Feature Tree
- Proposed New Coastal Shade Trees
- Foreshore Amenity Planting
- WSUD Swale Planting
 - 2030 Erosion Line
 - 2070 Erosion Line





Figure 53. Master Plan Section Two - McLarty Road to Carlisle Street

ege	nd
E.	Existing <i>Araucaria heterophylla</i> (Retain, Protect and Supplement)
	Proposed New Feature Trees
	Proposed New Coastal Shade Trees
3	Foreshore Amenity Planting
2	WSUD Swale Planting
	2030 Erosion Line
	2070 Erosion Line





Figure 54. Master Plan Section Three - Carlisle Street to Bent Street

- Existing *Araucaria heterophylla* (Retain, Protect and Supplement)
- Proposed New Feature Tree
- Proposed New Coastal Shade Trees



Foreshore Amenity Planting

- 2030 Erosion Line
- WSUD Swale Planting
- 2070 Erosion Line







Figure 55. Master Plan Section Four - Bent Street to Warnbro Beach Road

- Existing *Araucaria heterophylla* (Retain, Protect and Supplement)
- Proposed New Feature Trees





120

- WSUD Swale Planting
- 2030 Erosion Line
- 2070 Erosion Line







5.0 INDICATIVE COST ESTIMATE

5.1

INDICATIVE COST ESTIMATE - SUMMARY

	DESCRIPTION		IGIAE
1.00	SECTION ONE POUNDARY POAD TO LIONS BARK		
1.00	Preliminary, site works and demolitions		\$328,602,50
1.07	Hardworks - Surface Treatments		\$1 620 910 00
1.02	Hardworks - Infrastructure (walls and structures)		\$869,300,00
1.00	Softworks		\$282 378 00
1.05	Irrigation		\$402,515.00
1.05	Lighting and Electrical		\$402,313.00
1.00			\$1,140,200.00
		TOTAL	\$4,649,995.50
2.00	SECTION TWO_MCLARTY ROAD TO CARLISLE STREET		
2.01	Preliminary, site works and demolitions		\$331,977.50
2.02	Hardworks - Surface Treatments		\$1,334,360.00
2.03	Hardworks - Infrastructure (walls and structures)		\$1,824,870.00
2.04	Softworks		\$174,503.00
2.05	Irrigation		\$279,440.00
2.06	Lighting and Electrical		\$792,800.00
		TOTAL	\$4,737,950.50
3.00	SECTION THREE_CARLISLE ROAD TO BENT STREET		
2.01	Preliminary, site works and demolitions		\$2,675,487.50
2.02	Hardworks - Surface Treatments		\$1,887,080.00
2.03	Hardworks - Infrastructure (walls and structures)		\$4,348,250.00
2.04	Softworks		\$539,874.00
2.05	Irrigation		\$502,170.00
2.06	Lighting and Electrical		\$962,400.00
		TOTAL	\$10,915,261.50
4.00	SECTION FOUR_BENT STREET TO WARNBRO BEACH ROAD		
2.01	Preliminary, site works and demolitions		\$407,332.50
2.02	Hardworks - Surface Treatments		\$1,019,750.00
2.03	Hardworks - Infrastructure (walls and structures)		\$7,016,600.00
2.04	Softworks		\$408,112.00
2.05	Irrigation		\$549,690.00
2.06	Lighting and Electrical		\$825,000.00
		τοται	\$40.225.494.E0
		TOTAL	\$10,220,464.50
	Sub Total Construction		\$30,529,692.00
	Contingency	10%	\$3,052,969.20
	Sub total Exc GST		\$33,582,661.20
	GST	10%	\$3,358,266.12
	TOTAL ink GST		\$36,940,927.32

Exclusions

All hydraulic infrastructure and pipework apart drinking fountains as specified Design fees, approval costs, project management and escalation

5.2

INDICATIVE COST ESTIMATE - SECTION ONE, BOUNDARY ROAD TO LIONS PARK

ITEM	DESCRIPTION	QTY	UNIT	RATE	TOTAL
1.00	PRELIMINARY, SITE WORKS & DEMOLITIONS				
1.01	Mobilisation, demolition, earthworks and fine grading (allowance)	25,355	m2	\$2.50	\$63,387.50
1.02	Water Sensitive Urban Design Swale (all soil deposited on site,	4,614	m2	\$57.50	\$265,305.00
	including all earthworks, geofabric, bio filtration soil mix and limestone gravel mulch)				
		PRELIMINARIES, SITE V	VORKS & DEM	OLITIONS TOTAL	\$328,692.50
2.00	HARDWORKS -WALLS AND SURFACE TREATMENTS				
2 01	Paving Type 1 - Bitumen carpark on compacted subgrade	4354	m2	\$50.00	\$217 700 00
2.07	Paving Type 2 - 100mm thick grey concrete	4442	m2	\$100.00	\$444 200 00
2.03	Paving Type 3 - 3.0m wide Dual Use Path - Bitumen	5199	m2	\$90.00	\$467.910.00
2.04	Paving Type 4 - Disabled beach access - (Fibre reinforced plastic)	229	m2	\$500.00	\$114.500.00
2.05	Paving Type 5 - Composite timber boardwalk and lookouts (Fibre reinforced plastic)	130	m2	\$600.00	\$78.000.00
2.06	Paving Type 6 - Stabilised Gravel	686	m2	\$100.00	\$68.600.00
2.06	Wall Type 1 - Natural limestone block or natural limestone rubble wall or similar wall	230	Im	\$1.000.00	\$230.000.00
				•	+
			SOIL PREP	ARATION TOTAL	\$1,620,910.00
3.00	HARDWORKS - INFRASTRUCTURE				
3.01	Edging Type 2 - Concrete garden kerb	550	Lm	\$70.00	\$38,500.00
3.02	Custom shelter - 4.5 x 4.5m	10	Item	\$20,000.00	\$200,000.00
3.03	Picnic table settings	10	Item	\$5,000.00	\$50,000.00
3.04	Bench seats	23	Item	\$2,500.00	\$57,500.00
3.05	Double electrical barbeques	6	Item	\$12,000.00	\$72,000.00
3.06	Beach showers and Kayak wash down facilities	7	Item	\$2,500.00	\$17,500.00
3.07	Dual bin enclosure (waste and recycling)	10	Item	\$1,500.00	\$15,000.00
3.08	Drink fountains (including connection to potable water supply)	6	Item	\$9,000.00	\$54,000.00
3.10	Bicycle parking racks	4	Item	\$1,200.00	\$4,800.00
3.11	Signage (Entry, directional and interpretative)	1	Allowance	\$10,000.00	\$10,000.00
3.12	Artwork	1	Allowance	\$50,000.00	\$50,000.00
3.13	Playspace (including all play items and surface finish) (local level playspace)	1	Allowance	\$300,000.00	\$300,000.00
3.14	Fitness equipment (utilising existing)	1	Allowance	\$20,000.00	\$20,000.00
3.15	Toilet Facility Building	1	Allowance	\$150,000.00	\$150,000.00
4.00	SOFTWORKS	HA	RDWORKS - IN	FRASTRUCTURE	\$869,300.00
4.00	SUFTWORKS				
4 01	General planting 4 tubestock per m2	4 491	m2	\$12.00	\$53,892,00
4.02	Swale planting, 4 tubestock per m2	4,431	m3	\$18.00	\$83.052.00
4.03	Trees - 45I T	150	Item	\$175.00	\$26 250 00
4.04	Soil Conditioner - 50mm thick	130 A AQ1	m2	\$8.00	\$35,928.00
4.05	Mulch - 75mm thick	4,431 A AQ1	m1	\$8.00	\$35,920.00
4.06	Supply and install roll on turf	4,491	m2	\$12.00	\$21,320.00
4.07	Repair to existing furf areas (10% allowance)	4 336	m2	\$6.00	\$26.016.00
4.01		4,330	1112	ψ0.00	φ20,010.00
				SOFTWORKS	\$282,378.00

ITEM	DESCRIPTION	QTY	UNIT	RATE	TOTAL
5.00	IRRIGATION				
5.01	New garden bed and turf irrigation areas	10,881	m2	\$35.00	\$380,835.00
5.03	Alterations to existing irrigation areas	4,336	m2	\$5.00	\$21,680.00
				IRRIGATION	\$402,515.00
6.00	LIGHTING AND ELECTRICAL				
6.01	Light posts and associated electrical work (allowance for 1 post per 30m)	70	Item	\$10,000.00	\$700,000.00
6.02	Conduits and trenching	2081	Im	\$200.00	\$416,200.00
6.03	Provision for Wi-Fi and USB charging stations	2	Allowance	\$15,000.00	\$30,000.00
		LIGH	TING AND ELE	CTRICAL TOTAL	\$1,146,200.00

Exclusions

All hydraulic infrastructure and pipework apart drinking fountains as specified Design fees, approval costs, project management and escalation

\$4,649,995.50
\$464,999.55
\$5,114,995.05
\$511,499.51
\$5,626,494.56

INDICATIVE COST ESTIMATE - SECTION TWO, MCLARTY ROAD TO CARLISLE ROAD

ITEM	DESCRIPTION	QTY	UNIT	RATE	TOTAL
1.00	PRELIMINARY, SITE WORKS & DEMOLITIONS				
4.04		44.000		80 50	\$00 745 00
1.01	Mobilisation, demolition, earthworks and tine grading (allowance)	14,686	m2	\$2.50	\$36,715.00
1.02	Water Sensitive Urban Design Swale (all soil deposited on site,	5,135	m2	\$57.50	\$295,262.50
	including all earthworks, geotabric, bio filtration soil mix and limestone gravel mulch)				\$004 077 F0
2.00		RIES, 511E W		OLITIONS TOTAL	\$331,977.50
2.00	HARDWORRS WALLS AND SORTAGE TREATMENTS				
2.01	Paving Type 1 - Bitumen carpark on compacted subgrade	4031	m2	\$50.00	\$201.550.00
2.02	Paving Type 2 - 100mm thick grey concrete	1873	m2	\$100.00	\$187.300.00
2.03	Paving Type 3 - 3.0m wide Dual Use Path - Bitumen	3539	m2	\$90.00	\$318.510.00
2.04	Paving Type 4 - Disabled beach access - (Fibre reinforced plastic)		m2	\$500.00	
2.05	Paving Type 5 - Composite timber boardwalk and lookouts (Fibre reinforced plastic)	861	m2	\$600.00	\$516.600.00
2.06	Paving Type 6 - Stabilised Gravel	74	m2	\$100.00	\$7.400.00
2.06	Wall Type 1 - Natural limestone block or natural limestone rubble wall or similar wall	103	lm	\$1,000.00	\$103,000.00
			SOIL PREF	PARATION TOTAL	\$1,334,360.00
3.00	HARDWORKS - INFRASTRUCTURE				
3.01	Edging Type 2 - Concrete garden kerb	121	Lm	\$70.00	\$8,470.00
3.02	Custom shelter - 4.5 x 4.5m	5	Item	\$20,000.00	\$100,000.00
3.03	Picnic table settings	1	Item	\$5,000.00	\$5,000.00
3.04	Bench seats	11	Item	\$2,500.00	\$27,500.00
3.05	Double electrical barbeques		Item	\$12,000.00	
3.06	Beach showers and wash down facilities	2	Item	\$2,500.00	\$5,000.00
3.07	Dual bin enclosure (waste and recycling)	7	Item	\$1,500.00	\$10,500.00
3.08	Drink fountains (including connection to potable water supply)	4	Item	\$9,000.00	\$36,000.00
3.09	Bicycle parking racks	2	Item	\$1,200.00	\$2,400.00
3.10	Signage (Entry, directional and interpretative)	1	Allowance	\$10,000.00	\$10,000.00
3.11	Artwork	1	Allowance	\$50,000.00	\$50,000.00
3.12	Playspace (including all play items and surface finish)	1	Allowance	\$300,000.00	\$300,000.00
3.13	Fitness equipment (utilising existing)	1	Allowance	\$20,000.00	\$20,000.00
3.14	Proposed New Building 1- Mersey Point Surf Life Saving Club (based on an industry, QS low rate of \$3500.00 sqm rate,	1	Allowance	\$250,000.00	\$250,000.00
3.15	Proposed New Building 1- Mersey Point Interpretive centre (based on an industry, QS high rate of \$5000.00	1	Allowance	\$1,000,000.00	\$1,000,000.00
	sqm rate, depending on level of kitchen finish and penguin enclosure requirements etc.)	цля		EDASTRUCTURE	\$1 924 970 00
4 00	SOFTWORKS	IIAI		INASTRUCTURE	\$1,024,070.00
4.01	General planting, 4 tubestock per m2	2,006	m2	\$12.00	\$24,072.00
4.02	Swale planting, 6 tubestock per m2	5,135	m3	\$18.00	\$92,430.00
4.03	Trees - 45LT	105	Item	\$175.00	\$18,375.00
4.04	Soil Conditioner - 50mm thick	2,006	m2	\$8.00	\$16,048.00
4.05	Mulch - 75mm thick	2,006	m1	\$8.00	\$16,048.00
4.06	Supply and install roll on turf	505	m2	\$12.00	\$6,060.00
4.07	Repair to existing turf areas (10% allowance)	245	m2	\$6.00	\$1,470.00
				SOFTWORKS	\$174 503 00

DESCRIPTION	QTY	UNIT	RATE	TOTAL
IRRIGATION				
New garden bed and turf irrigation areas	7,949	m2	\$35.00	\$278,215.00
Alterations to existing irrigation areas	245	m2	\$5.00	\$1,225.00
			IRRIGATION	\$279,440.00
LIGHTING AND ELECTRICAL				
Light posts and associated electrical work (allowance for 1 post per 30m)	49	Item	\$10,000.00	\$490,000.00
Conduits and trenching	1439	Im	\$200.00	\$287,800.00
Provision for Wi-Fi and USB charging stations	1	Allowance	\$15,000.00	\$15,000.00
	LIGH			
	IRRIGATION New garden bed and turf irrigation areas Alterations to existing irrigation areas LIGHTING AND ELECTRICAL Light posts and associated electrical work (allowance for 1 post per 30m) Conduits and trenching Provision for Wi-Fi and USB charging stations	IRRIGATION New garden bed and turf irrigation areas 7,949 Alterations to existing irrigation areas 245 LIGHTING AND ELECTRICAL 245 Light posts and associated electrical work (allowance for 1 post per 30m) 49 Conduits and trenching 1439 Provision for Wi-Fi and USB charging stations 1	IRRIGATION New garden bed and turf irrigation areas 7,949 m2 Alterations to existing irrigation areas 245 m2 LIGHTING AND ELECTRICAL	IRRIGATION New garden bed and turf irrigation areas 7,949 m2 \$35.00 Alterations to existing irrigation areas 245 m2 \$5.00 IRRIGATION LIGHTING AND ELECTRICAL Light posts and associated electrical work (allowance for 1 post per 30m) 49 Item \$10,000.00 Conduits and trenching 1439 Im \$200.00 Provision for Wi-Fi and USB charging stations 1 Allowance \$15,000.00

tructure and pipework apart dri ing fountains as specified Design fees, approval costs, project management and escalation

5.3

Sub Total Construction Contingency 10% Sub total Exc GST GST TOTAL inc GST	\$3,945,150.50 \$394,515.05 \$4,339,665.55 \$433,966.56 \$4,332,652,44
TOTAL inc GST	\$4,773,632.11

INDICATIVE COST ESTIMATE - SECTION THREE, CARLISLE ROAD TO BENT 5.4 **STREET**

ITEM	DESCRIPTION	QTY	UNIT	RATE	TOTAL
1.00	PRELIMINARY, SITE WORKS & DEMOLITIONS				
1.01	Mobilisation, demolition, earthworks and fine grading (allowance)	33,613	m2	\$2.50	\$84,032.50
1.02	Water Sensitive Urban Design Swale (all soil deposited on site) (allowance)	6,291	m2	\$5.00	\$31,455.00
	including all earthworks, geofabric, bio filtration soil mix and limestone gravel mulch)				
1.03	Demolition of existing toilet block and yacht club	1	Allowance	\$60,000.00	\$60,000.00
1.04	Allowance for coastal protection in front of The Pond (liner rate supplied by coastal engineers)	250	Lm	\$10,000.00	\$2,500,000.00
	PRELIMINA	ARIES, SITE W	ORKS & DEMO	JUITIONS TOTAL	\$2,675,487.50

2.00	HARDWORKS -WALLS AND SURFACE TREATMENTS				
2.01	Paving Type 1 - Bitumen carpark on compacted subgrade	5618	m2	\$50.00	\$280,900.00
2.02	Paving Type 2 - 100mm thick grey concrete	4280	m2	\$100.00	\$428,000.00
2.03	Paving Type 3 - 3.0m wide Dual Use Path - Bitumen	3682	m2	\$90.00	\$331,380.00
2.04	Paving Type 4 - Disabled beach access - (Fibre reinforced plastic)		m2	\$500.00	
2.05	Paving Type 5 - Composite timber boardwalk and lookouts (Fibre reinforced plastic)	500	m2	\$600.00	\$300,000.00
2.06	Paving Type 6 - Stabilised Gravel	858	m2	\$100.00	\$85,800.00
2.07	Wall Type 1 - Natural limestone block or natural limestone rubble wall or similar wall	461	Im	\$1,000.00	\$461,000.00

			SOIL PREPARATION TOTAL		\$1,887,080.00
3.00	HARDWORKS - INFRASTRUCTURE				
3.01	Edging Type 2 - Concrete garden kerb	1045	Lm	\$70.00	\$73,150.00
3.02	Custom shelter - 4.5 x 4.5m	12	Item	\$20,000.00	\$240,000.00
3.03	Picnic table settings	10	Item	\$5,000.00	\$50,000.00
3.04	Bench seats	15	Item	\$2,500.00	\$37,500.00
3.05	Double electrical barbeques	8	Item	\$12,000.00	\$96,000.00
3.06	Dual bin enclosure (waste and recycling)	10	Item	\$1,500.00	\$15,000.00
3.07	Drink fountains (including connection to potable water supply)	7	Item	\$9,000.00	\$63,000.00
3.08	Beach showers and wash down facilities (including connection to potable water supply)	4	Item	\$2,500.00	\$10,000.00
3.09	Bicycle parking racks	3	Item	\$1,200.00	\$3,600.00
3.10	Signage (Entry, directional and interpretative)	1	Allowance	\$10,000.00	\$10,000.00
3.11	Artwork	2	Allowance	\$100,000.00	\$200,000.00
3.12	Skate Elements (Regional level skate infrastructure, similar to Bibra Lake all ages park)	1	Allowance	\$800,000.00	\$800,000.00
3.13	Playspace (including all play items and surface finish) (Regional level playspace)	1	Allowance	\$1,500,000.00	\$1,500,000.00
3.14	Proposed New Building 1 (based on an industry, QS high rate of \$5000.00 sqm rate, depending on level of kitchen finish etc)	250	Allowance	\$5,000.00	\$1,250,000.00
3.15	Proposed New Building 2 (based on a industry, QS high rate of \$5000.00 sqm rate, depending on level of kitchen finish etc)	250	Allowance	\$5,000.00	\$1,250,000.00
3.16	Fitness equipment (utilising existing)	1	Allowance	\$20,000.00	\$20,000.00
3.17	Basketball half court	224	m2	\$100.00	\$22,400.00
3.18	Toilet Facility Building	1	Allowance	\$150,000.00	\$150,000.00
		HAF	RDWORKS - IN	FRASTRUCTURE	\$4,348,250.00

ITEM	DESCRIPTION	QTY	UNIT	RATE	TOTAL
4.00	SOFTWORKS				
4.01	General planting, 4 tubestock per m2	4,468	m2	\$12.00	\$53,616.00
4.02	Swale planting, 6 tubestock per m2	6,291	m3	\$18.00	\$113,238.00
4.03	Trees - 45LT	200	Item	\$175.00	\$35,000.00
4.04	Soil Conditioner - 50mm thick	4,468	m2	\$8.00	\$35,744.00
4.05	Mulch - 75mm thick	4,468	m1	\$8.00	\$35,744.00
4.06	Supply and install roll on turf	7,800	m2	\$12.00	\$93,600.00
4.07	Repair to existing turf areas (10% allowance)	14,411	m2	\$12.00	\$172,932.00
				SOFTWORKS	\$539,874.00
5.00	IRRIGATION				
5.01	New garden bed and turf irrigation areas	12,289	m2	\$35.00	\$430,115.00
5.03	Alterations to existing irrigation areas	14,411	m2	\$5.00	\$72,055.00
				IRRIGATION	\$502,170.00
6.00	LIGHTING AND ELECTRICAL				
0.04		50	14	¢40.000.00	¢500.000.00
0.01	Light posts and associated electrical work (allowance for 1 post per 30m)	59	item	\$10,000.00	\$590,000.00
6.02	Conduits and trenching Provision for Wi-Fi and USB charging stations	1/8/	Im	\$200.00	\$357,400.00
6.03	Tovision of WELLand COD charging stattons	1	Allowance	\$15,000.00	\$15,000.00
		LIGH.			\$062.400.00
		LIGH			⊅90∠,400.00

6.01 Light posts and associated electrica	al work (allowance for 1 post per 30m)
6.02 Conduits and trenching	
6.03 Provision for Wi-Fi and USB chargi	ng stations

Exclusions	

All hydraulic infrastructure and pipework apart drinking fountains as specified Design fees, approval costs, project management and escalation

Sub Total Construction Contingency 10% Sub total Exc GST GST	\$9,952,861.50 \$995,286.15 \$10,948,147.65 \$1,094,814.77
TOTAL inc GST	\$12,042,962.42

INDICATIVE COST ESTIMATE - SECTION FOUR, BENT STREET TO WARNBRO BEACH ROAD

ITEM	DESCRIPTION	QTY	UNIT	RATE	TOTAL	
1.00	PRELIMINARY, SITE WORKS & DEMOLITIONS					
1.01	Mobilisation, demolition, earthworks and fine grading (allowance)	16,699	m2	\$2.50	\$41,747.50	
1.02	Water Sensitive Urban Design Swale (all soil deposited on site,	6,358	m2	\$57.50	\$365,585.00	
	including all earthworks, geofabric, bio filtration soil mix and limestone gravel mulch)					
		PRELIMINARIES, SITE W	PRELIMINARIES, SITE WORKS & DEMOLITIONS TOTAL			
2.00	HARDWORKS -WALLS AND SURFACE TREATMENTS					
	Daving Tune 1. Ditumen corport on compacted subgrade					
2.01	Paving Type 1 - Bitumen carpark on compacted subgrade	2541	m2	\$50.00	\$127,050.00	
2.02	Paving Type 2 - 100mm thick grey concrete	2760	m2	\$100.00	\$276,000.00	
2.03	Paving Type 3 - 3.0m wide Dual Use Path - Bitumen	3920	m2	\$90.00	\$352,800.00	
2.04	Paving Type 4 - Disabled beach access - (Fibre reinforced plastic)		m2	\$500.00		
2.05	Paving Type 5 - Composite timber boardwalk and lookouts (Fibre reinforced plastic)	222	m2	\$600.00	\$133,200.00	
2.06	Paving Type 6 - Stabilised Gravel	542	m2	\$100.00	\$54,200.00	
2.06	Wall Type 1 - Natural limestone block or natural limestone rubble wall or similar wall	102	Im	\$750.00	\$76,500.00	
			SOIL PRE	PARATION TOTAL	\$1,019,750.00	
3.00	HARDWORKS - INFRASTRUCTURE					
3.01	Edging Type 2 - Concrete garden kerb	950	Lm	\$70.00	\$66,500.00	
3.02	Custom shelter - 4.5 x 4.5m	7	Item	\$20,000.00	\$140,000.00	
3.03	Picnic table settings	7	Item	\$5,000.00	\$35,000.00	
3.04	Bench seats	8	Item	\$2.500.00	\$20.000.00	

3.04	Bench seats	8	Item	\$2,500.00	\$20,000.00
3.05	Double electrical barbeques	6	Item	\$12,000.00	\$72,000.00
3.06	Beach showers and wash down facilities	3	Item	\$2,500.00	\$7,500.00
3.07	Dual bin enclosure (waste and recycling)	4	Item	\$1,500.00	\$6,000.00
3.08	Drink fountains (including connection to potable water supply)	4	Item	\$9,000.00	\$36,000.00
3.09	Bicycle parking racks	3	Item	\$1,200.00	\$3,600.00
3.10	Signage (Entry, directional and interpretative)	1	Allowance	\$10,000.00	\$10,000.00
3.11	Artwork	1	Allowance	\$50,000.00	\$50,000.00
3.12	Playspace (including all play items and surface finish) (Local Playspace level)	1	Allowance	\$300,000.00	\$300,000.00
3.13	Fitness equipment (utilising existing)	1	Allowance	\$20,000.00	\$20,000.00
3.14	New Buildings (based on a \$5000 sqm rate) (on level at 250m2)	1	Allowance	\$1,250,000.00	\$1,250,000.00
3.15	Swimming structure (based on a rate of \$3000 per sq meter rate)	1	Allowance	\$5,000,000.00	\$5,000,000.00

		HARD	HARDWORKS - INFRASTRUCTURE		
4.00	SOFTWORKS				
4.01	General planting, 4 tubestock per m2	3,504	m2	\$12.00	\$42,048.00
4.02	Swale planting, 6 tubestock per m2	6,358	m3	\$18.00	\$114,444.00
4.03	Trees - 45LT	136	Item	\$175.00	\$23,800.00
4.04	Soil Conditioner - 50mm thick	3,504	m2	\$8.00	\$28,032.00
4.05	Mulch - 75mm thick	3,504	m1	\$8.00	\$28,032.00
4.06	Supply and install roll on turf	1,489	m2	\$12.00	\$17,868.00
4.07	Repair to existing turf areas (10% allowance)	12,824	m2	\$12.00	\$153,888.00
				SOFTWORKS	\$408,112.00

RIGATION w garden bed and turf irrigation areas erations to existing irrigation areas	13,872	m2	SOFTWORKS	\$408,112.00
RIGATION w garden bed and turf irrigation areas erations to existing irrigation areas	13,872	m2	\$25.00	
w garden bed and turf irrigation areas	13,872	m2	¢25.00	
w garden bed and turf irrigation areas erations to existing irrigation areas	13,872	m2	¢25.00	
erations to existing irrigation areas			\$35.00	\$485,520.00
	12,834	m2	\$5.00	\$64,170.00
			IRRIGATION	\$549,690.00
GHTING AND ELECTRICAL				
ht posts and associated electrical work (allowance for 1 post per 30m)	51	Item	\$10,000.00	\$510,000.00
nduits and trenching	1500	Im	\$200.00	\$300,000.00
ovision for Wi-Fi and USB charging stations	1	Allowance	\$15,000.00	\$15,000.00
	LIGH	TING AND ELE	CTRICAL TOTAL	\$825,000.00
	SHTING AND ELECTRICAL ht posts and associated electrical work (allowance for 1 post per 30m) nduits and trenching vision for Wi-Fi and USB charging stations	SHTING AND ELECTRICAL ht posts and associated electrical work (allowance for 1 post per 30m) 51 nduits and trenching 1500 vision for Wi-Fi and USB charging stations 1 LIGH LIGH	SHTING AND ELECTRICAL ht posts and associated electrical work (allowance for 1 post per 30m) 51 Item nduits and trenching 1500 Im vision for Wi-Fi and USB charging stations 1 Allowance LIGHTING AND ELE	IRRIGATION SHTING AND ELECTRICAL ht posts and associated electrical work (allowance for 1 post per 30m) nduits and trenching vision for Wi-Fi and USB charging stations LIGHTING AND ELECTRICAL TOTAL

All hydraulic infrastructure and pipework apart drinking fountains as specified Design fees, approval costs, project management and escalation

5.5

Sub Total Construction	\$9,401,484.50
Contingency 10%	\$940,148.45
Sub total Exc GST	\$10,341,632.95
GST	\$1,034,163.30
TOTAL inc GST	\$11,375,796.25



6.0 STAGING



A project of this scale will be progressively implemented as funding becomes available.

The funding will likely be a combination of that allocated by the City and from third party funding providers, principally from State Government sources. The Master Plan will be used as a basis to encourage investment partners.

Indicative staging advice has been provided based on what is perceived as the best outcome for the City and its residents.

- **1** Stage 1, The Pond masterplan precinct
- (2) **Stage 2**, Shoalwater Reserve Activity Node and Lions Park masterplan precinct
- (3) Stage 3, Mersey Point masterplan precinct
- (4) Stage 4, Waikiki Foreshore masterplan precinct
- 5 Stage 5, foreshore parks, parking and boat ramp facilities masterplan precinct



Figure 58. Indicative Staging Masterplan

INDICATIVE STAGING - STAGE 1 6.2

The Pond Activity Node is considered to be the principal destination and focal point for the foreshore being located adjoining a major road intersection (Safety Bay Road and Arcadia Drive) and include key facilities such as commercial and community venues.

This stage of works can be separated into two sections:



(1a) Inner core - comprising of the area where the bulk of the amenities are proposed

(**1b**) Fringe zone - comprising of the areas along the foreshore that connects to the other stages of works and activity nodes.

- Amphitheatre
- Viewing platform
- Public event space
- Foreshore parkland
- Shade structures and barbecue facilities
- Playspaces and recreational grounds such as scooter track and half court basketball
- Boat beach access
- Car, bus and trailer parking
- Coastal protection
- Community and commercial buildings
- Boardwalk



6.3

INDICATIVE STAGING - STAGE 2

The northern section of the foreshore can be grouped to include Shoalwater and Lions Park Activity Node completing the western portion of the master plan. These activity nodes are set into this work staging due to their similarity in scale and amenities.

This stage of works can be separated into three sections:

- (2a) Inner core 1 comprising of Shoalwater Activity Node and associayted amenities
- (2b) Inner core 2 comprising of Lions Park Activity Node and associated amenities
- (2c) Fringe zone comprising of the areas along the foreshore that connects to the other stages of works and activity nodes.

- Beach access and lookout
- Foreshore parkland
- Shade structures and barbecue facilities
- Toilet facilities
- Playspace
- Beach access
- Car and trailer parking



6.4 INDICATIVE STAGING - STAGE 3

Mersey Point Activity Node is a key destination point along the foreshore being a visitor and tourist stop due to the ferry access point to Penguin Island, boat jetty and tour operator facility.

This stage of works can be separated into two sections:

- (3a) Inner core comprising of the area where the bulk of the amenities are proposed
- (3b) Fringe zone comprising of the areas along the foreshore that connects to the other stages of works and activity nodes.

- Coastal boardwalk
- Observation deck
- Public event space
- Foreshore parkland
- Shade structures and barbecue facilities
- Cafe and associated amenities
- Playspace
- Beach access
- Bus parking/PTA terminal
- Car parking



6.5

INDICATIVE STAGING - STAGE 4

Waikiki Beach Activity Node lies at the southern section of the master plan and provides key amenities for Waikiki Beach.

This stage of works can be separated into two sections:



(4a) Inner core - comprising of the area where the bulk of the amenities are proposed

(4b) Fringe zone - comprising of the areas along the foreshore that connects to the other stages of works and activity nodes.

- Beach access and lookout
- Swimming platform
- Foreshore parkland
- Shade structures and barbecue facilities
- Cafe and associated amenities
- Playspace
- Fitness stations
- Beach access
- Car parking



6.6 INDICATIVE STAGING - STAGE 5

This portion of works is the last area to be implemented to complete the master plan works connecting The Pond Activity Node on the west to Waikiki Beach Activity Node on the east side.

- Beach access
- Foreshore parkland
- Shade structures and barbecue facilities
- Toilet facilities
- Beach access
- Boat ramp
- Car and trailer parking
- Water sensitive urban design infrastructure



SAFETY BAY SHOALWATER MASTER PLAN REPORT 97