

# Wagonga Inlet Living Foreshore

Narooma

Concept Design Report

October 2021



short pants  
consulting

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# Wagonga Inlet Living Foreshore Narooma

Prepared for:



# contents

## 1.0 Introduction

- 1.1 Contents
- 1.2 Project overview
- 1.3 Country
- 1.4 Coast

## 2.0 Context & Response

- 2.1 Context: Site
- 2.2 Conditions: Site
- 2.3 Living Foreshore Plan

## 3.0 Living Foreshore Plan

- 3.1 Living Foreshore View
- 3.2 Section 1
- 3.3 Section 1
- 3.4 Section 3
- 3.5 Existing Conditions
- 3.6 Proposed Outcomes
- 3.7 Elements & Ingredients
- 3.8 Potential Staging Zones
- 3.9 Planting Palette
- 3.10 Planting Palette
- 3.11 Preliminary Costings
- 3.12 Living Foreshore View

# introduction

## Overlapping Ecologies

Wagonga Inlet is at the geographic and cultural heart of Narooma, one of the South Coast's most dynamic and beautiful areas. The Wagonga Inlet Living Foreshore project, in addition to protecting the coast itself, will also address the community's aspirations and Councils' visions, guiding the delivery of open space, environmental sustainability and community infrastructure. The restoration of the foreshore is an opportunity to explore the enhancement of the estuarine edge, as both destination and a unique catalyser of activity, for diverse populations of many species.

Narooma is acknowledged as one of the South Coast's gems, easily accessed and buoyed by local growth in tourism, recreation and sustainable lifestyles. Its foreshore can be a multi-functional social place, offering unique opportunities and experiences, enhancing and protecting existing environments, founded on the interests and needs of locals, and meeting the demands of a rapidly changing world, with resilience, diversity and delight.

At the heart of our response to the Wagonga Inlet Foreshore is a recognition of the uniqueness of place, a character generated by its unique ecologies, at the threshold between land and sea. This restoration of this diverse ecosystem and habitat forms the heart of the approach to the Wagonga Inlet Foreshore, offering a civic place both responsive and robust to accommodate changing conditions, now and into the future.

The Wagonga Inlet Living Foreshore restoration is an exemplary step in addressing the social, cultural and environmental needs of the community, reinforcing

the investments in parks, play spaces and new social infrastructure and supporting the demographic, cultural and environmental diversity of the area. With these considerations, the Wagonga Inlet Foreshore will become a place of encounter and experience where residents and visitors of all ages can immerse themselves in a rich and magical environment, one manifest from the natural and cultural heritage of the area, resolutely facing into the future.

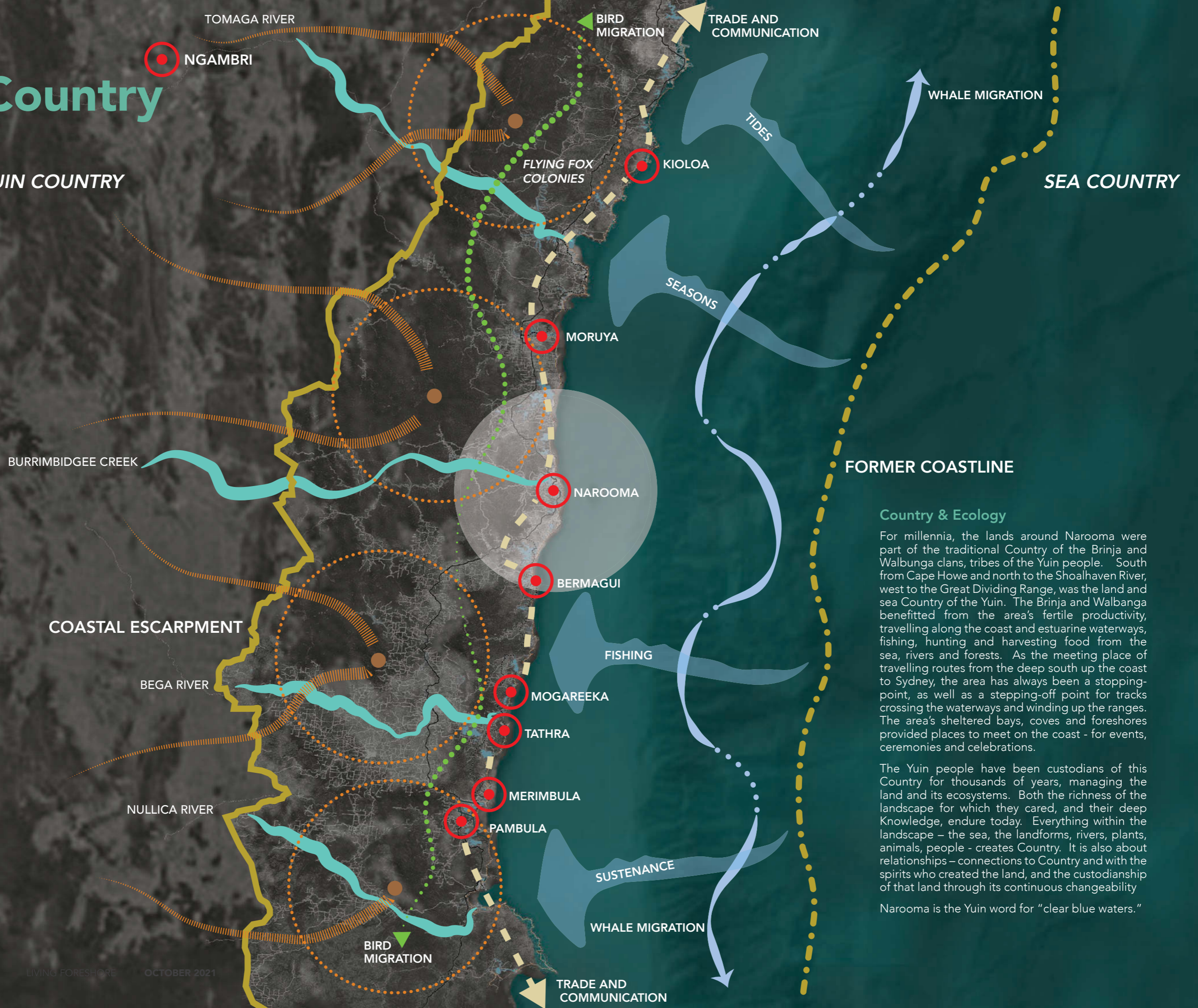
In addition to stakeholders' objectives, the project has also accommodated a range of considerations and complexities specific to Wagonga Inlet, the immediate physical context and the greater Narooma area. Moving beyond an engineered solution to foreshore erosion, we have imagined a special place that clearly protects and enhances the identity and character of the coastal environment and its surroundings. The project is an integration of environment, engineering and community, and the blurring of boundaries and barriers between all these.

We have embraced the challenges inherent in a changing coastline as key factors in shaping the project, ensuring that it adds to the diversification, activation and environmental performance of the Wagonga Inlet Foreshore, and all of Narooma. The outcomes celebrate these values as key assets in Narooma's coastal future, appreciative of what it is, imagining what it could be, recognising that the area is, and has always been, a unique place, at the intersection of land and sea, road and river, the coast and the heartland, and a meeting place for many rich and diverse ecologies, cultures and experiences.

# 1.3 Country

YUIN COUNTRY

SEA COUNTRY



## FORMER COASTLINE

### Country & Ecology

For millennia, the lands around Narooma were part of the traditional Country of the Brinja and Walbunga clans, tribes of the Yuin people. South from Cape Howe and north to the Shoalhaven River, west to the Great Dividing Range, was the land and sea Country of the Yuin. The Brinja and Walbunga benefitted from the area's fertile productivity, travelling along the coast and estuarine waterways, fishing, hunting and harvesting food from the sea, rivers and forests. As the meeting place of travelling routes from the deep south up the coast to Sydney, the area has always been a stopping-point, as well as a stepping-off point for tracks crossing the waterways and winding up the ranges. The area's sheltered bays, coves and foreshores provided places to meet on the coast - for events, ceremonies and celebrations.

The Yuin people have been custodians of this Country for thousands of years, managing the land and its ecosystems. Both the richness of the landscape for which they cared, and their deep Knowledge, endure today. Everything within the landscape - the sea, the landforms, rivers, plants, animals, people - creates Country. It is also about relationships - connections to Country and with the spirits who created the land, and the custodianship of that land through its continuous changeability

Narooma is the Yuin word for "clear blue waters."

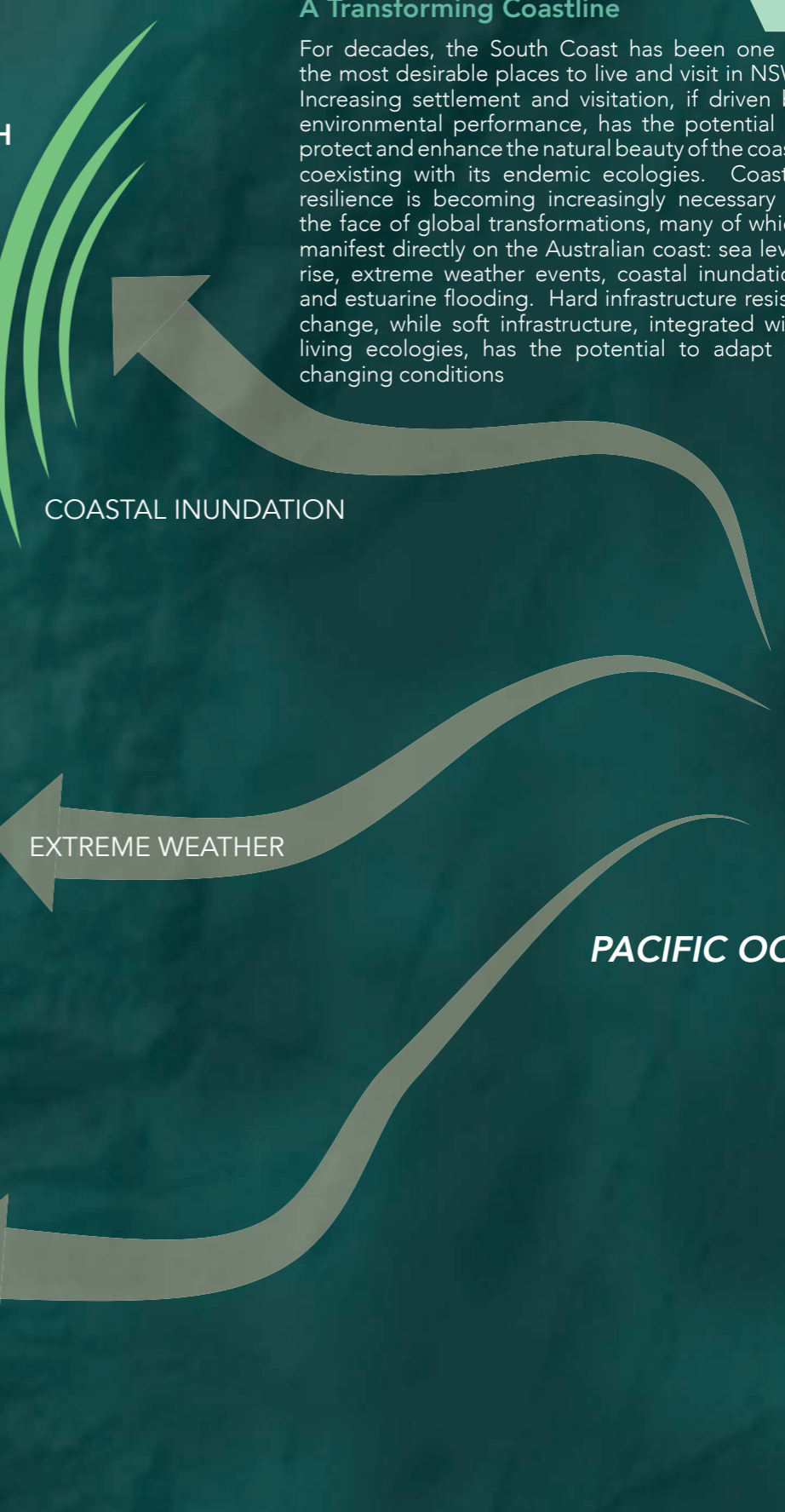
# 1.4 Coast

EUROBODALLA SHIRE COUNCIL



## A Transforming Coastline

For decades, the South Coast has been one of the most desirable places to live and visit in NSW. Increasing settlement and visitation, if driven by environmental performance, has the potential to protect and enhance the natural beauty of the coast, coexisting with its endemic ecologies. Coastal resilience is becoming increasingly necessary in the face of global transformations, many of which manifest directly on the Australian coast: sea level rise, extreme weather events, coastal inundation and estuarine flooding. Hard infrastructure resists change, while soft infrastructure, integrated with living ecologies, has the potential to adapt to changing conditions



# 2.1 Context: Site



PRINCES HIGHWAY

PACIFIC OCEAN

NAVIGABLE CHANNEL

WAGONGA HEAD

NAROOMA BRIDGE

BAR BEACH

KEN ROSE PARK

THE DEEP HOLE

SITE

NAROOMA FLAT

NAROOMA SWIMMING CENTRE

NAROOMA WHARF

WAGONGA INLET

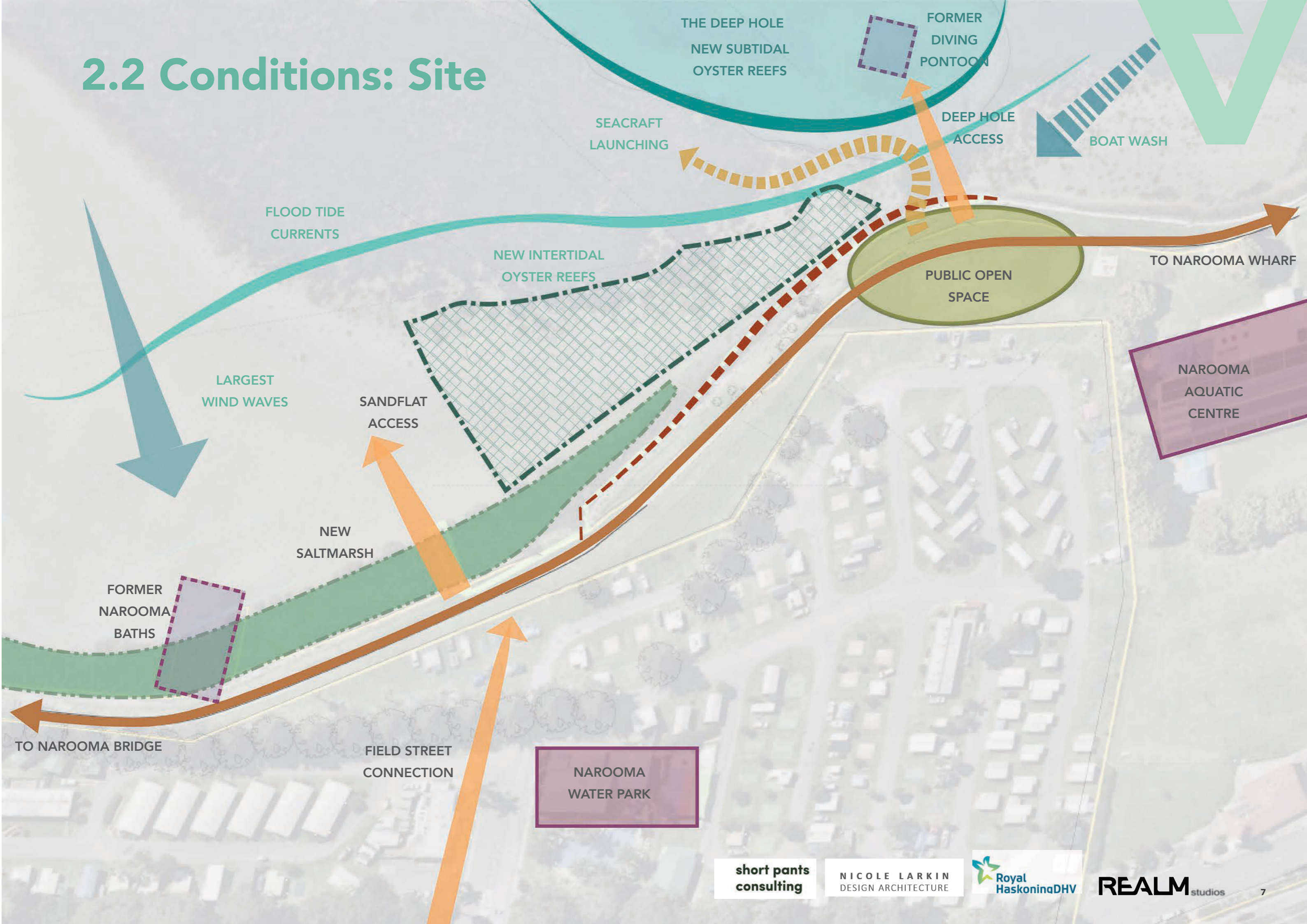
WATER PARK

NATA OVAL

FIELD STREET

BILL SMYTH OVAL

# 2.2 Conditions: Site



# 2.3 Living Foreshore Plan

Zone A: The Flats  
Natural Ecologies



Wagonga sandflats

Existing mangroves

Existing path

Improved saltmarsh

Existing mangroves

New terrestrial planting

Former Narooma  
Baths optional  
access point

Existing path

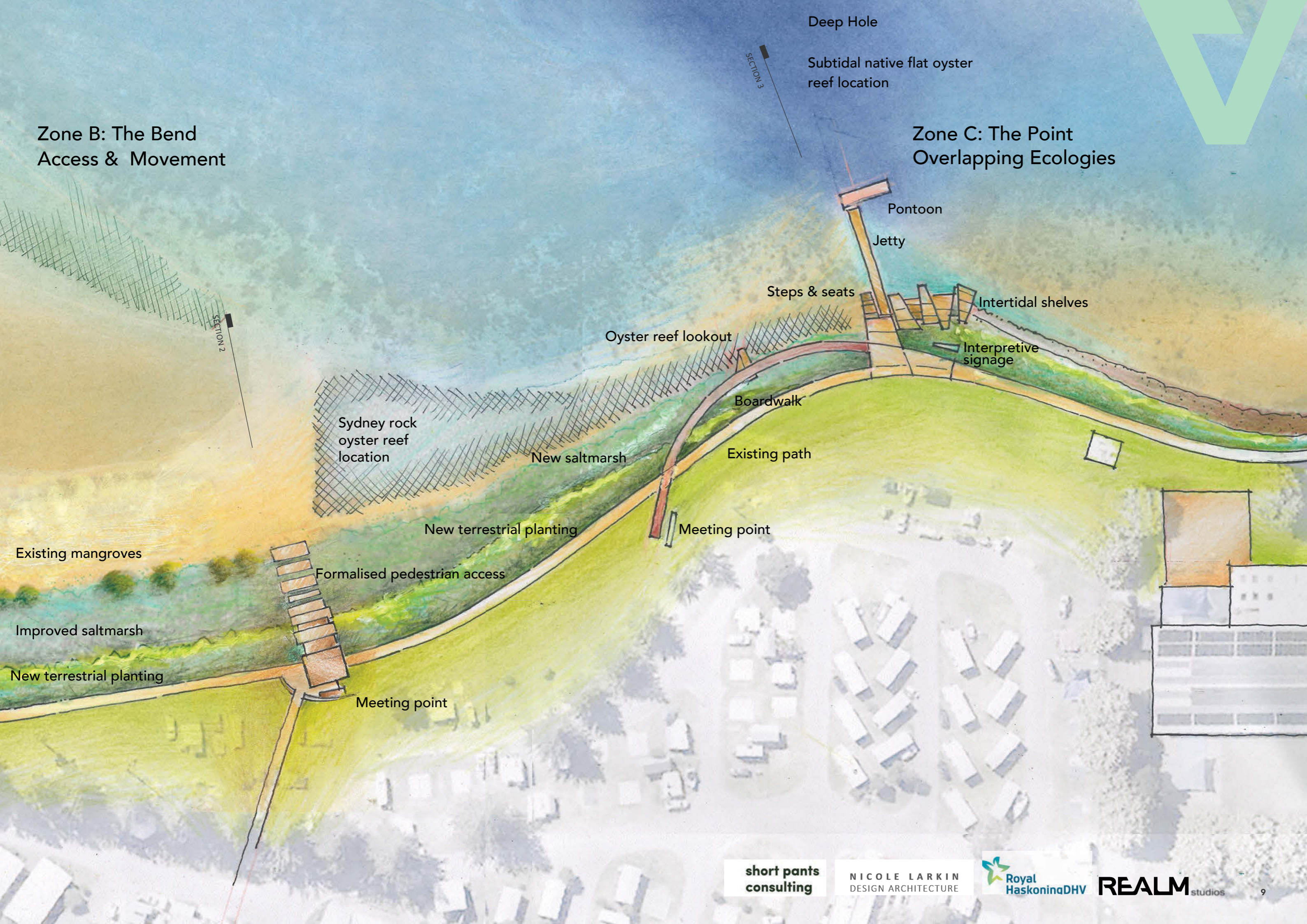
SECTION 1





Zone B: The Bend  
Access & Movement

Zone C: The Point  
Overlapping Ecologies





# Wagonga Inlet Living Foreshore Sections

# 3.2 Section 1 - Sandflats & Saltmarsh



BIRDLIFE PERCHES

PROPOSED OYSTER REEF

EXISTING MANGROVES

INTERTIDAL HABITAT

EXISTING GROUND LINE

SAND FLATS AND NEW OYSTER REEF BEYOND

EXISTING SALTMARSH  
(ACCESS PATH OPTIONAL)

NEW Saltmarsh

TERRESTRIAL PLANTING

EXISTING PATH

NEW VEGETATION ZONE

# 3.3 Section 2 - Oyster Reefs & Saltmarsh



PROPOSED OYSTER REEF

EXISTING MANGROVES

MEAN HIGH WATER MARK

ACCESS TO SHALLOW SAND FLATS AT LOW TIDE

FORMAL ACCESS

INTERTIDAL HABITAT

EXISTING GROUND LINE

ACCESS TO SAND FLATS  
(NEW OYSTER REEF BEYOND)

EXISTING SALTMARSH  
(PROVIDING CONSOLIDATED ACCESS THROUGH SALTMARSH)

NEW Saltmarsh

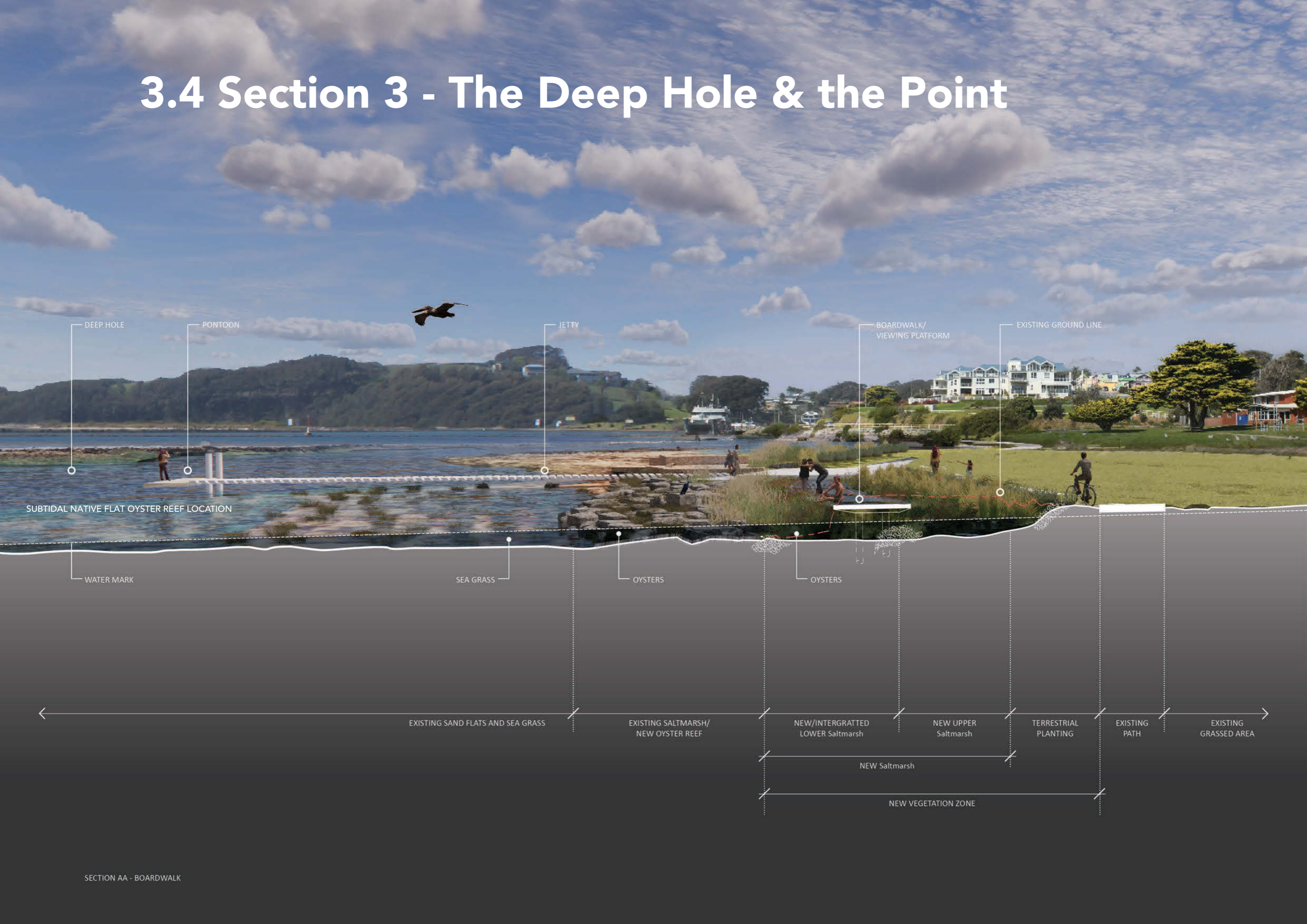
TERRESTRIAL PLANTING

EXISTING PATH

CARAVAN PARK

NEW VEGETATION ZONE

# 3.4 Section 3 - The Deep Hole & the Point



DEEP HOLE

PONTOON

JETTY

BOARDWALK/  
VIEWING PLATFORM

EXISTING GROUND LINE

SUBTIDAL NATIVE FLAT OYSTER REEF LOCATION

WATER MARK

SEA GRASS

OYSTERS

OYSTERS

EXISTING SAND FLATS AND SEA GRASS

EXISTING SALTMARSH/  
NEW OYSTER REEF

NEW/INTERGRATED  
LOWER Saltmarsh

NEW UPPER  
Saltmarsh

TERRESTRIAL  
PLANTING

EXISTING  
PATH

EXISTING  
GRASSED AREA

NEW Saltmarsh

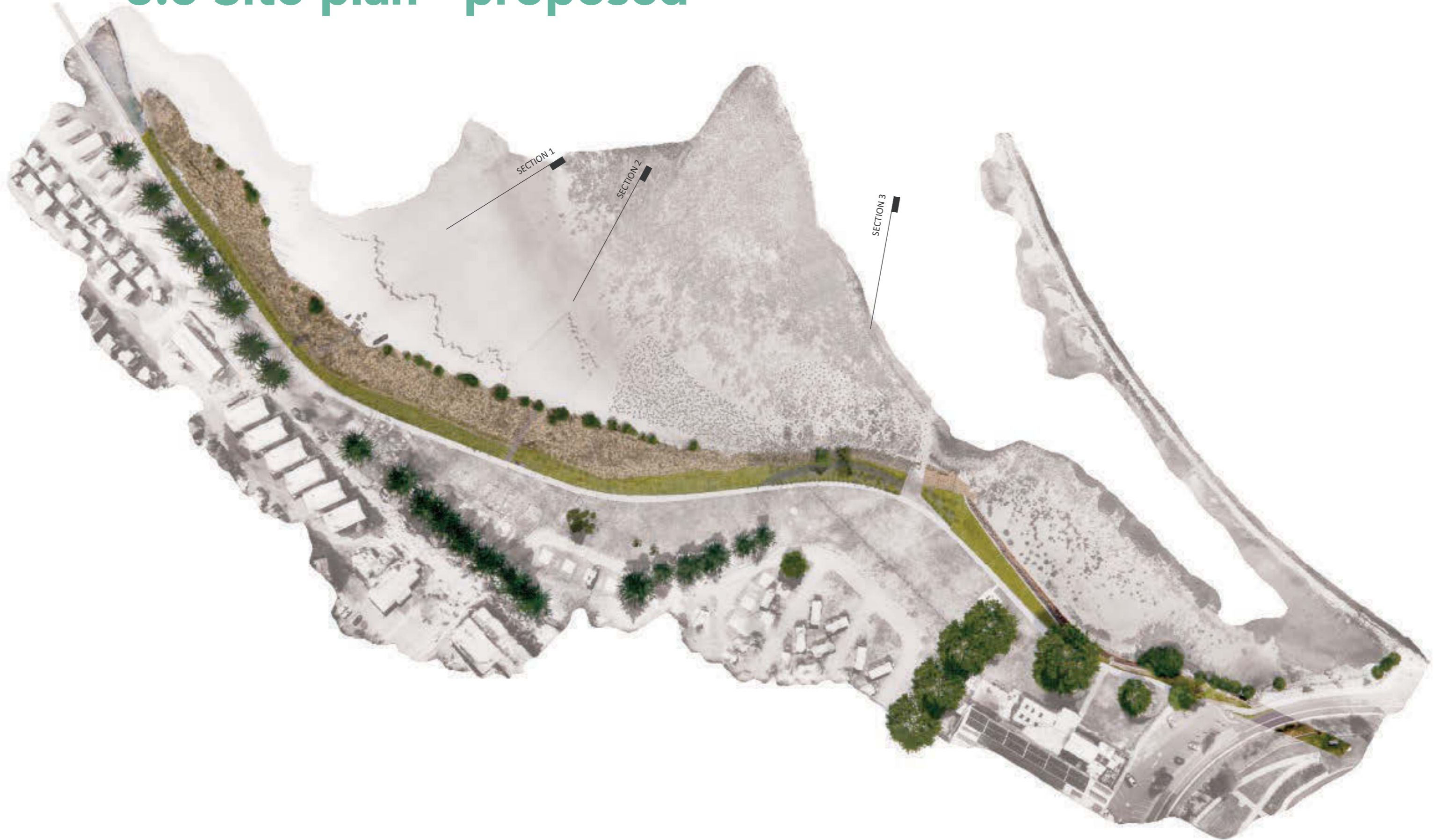
NEW VEGETATION ZONE

# 3.5 Site Plan - existing



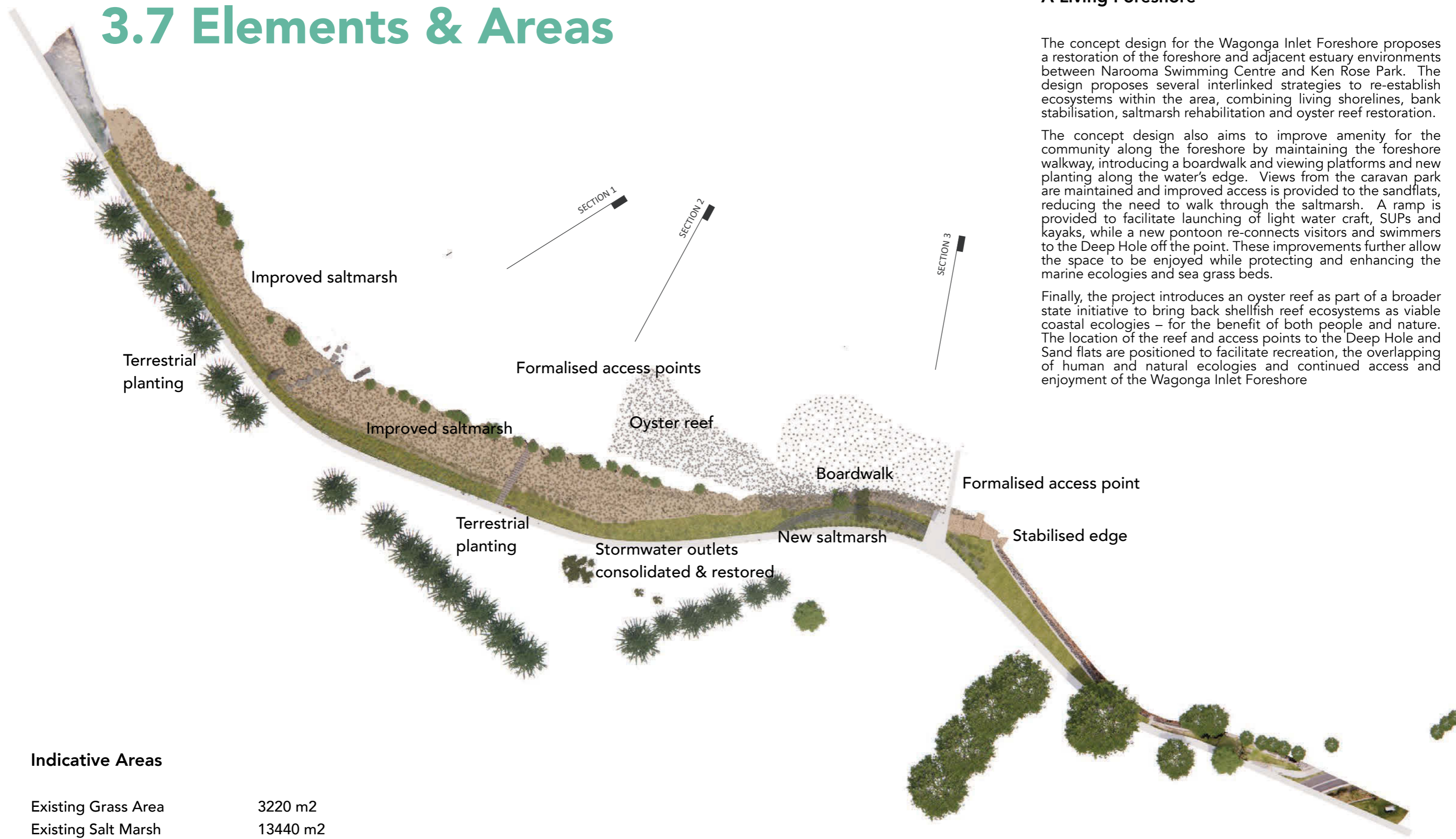
Not to scale

# 3.6 Site plan - proposed



Not to scale

# 3.7 Elements & Areas



## A Living Foreshore

The concept design for the Wagonga Inlet Foreshore proposes a restoration of the foreshore and adjacent estuary environments between Narooma Swimming Centre and Ken Rose Park. The design proposes several interlinked strategies to re-establish ecosystems within the area, combining living shorelines, bank stabilisation, saltmarsh rehabilitation and oyster reef restoration.

The concept design also aims to improve amenity for the community along the foreshore by maintaining the foreshore walkway, introducing a boardwalk and viewing platforms and new planting along the water's edge. Views from the caravan park are maintained and improved access is provided to the sandflats, reducing the need to walk through the saltmarsh. A ramp is provided to facilitate launching of light water craft, SUPs and kayaks, while a new pontoon re-connects visitors and swimmers to the Deep Hole off the point. These improvements further allow the space to be enjoyed while protecting and enhancing the marine ecologies and sea grass beds.

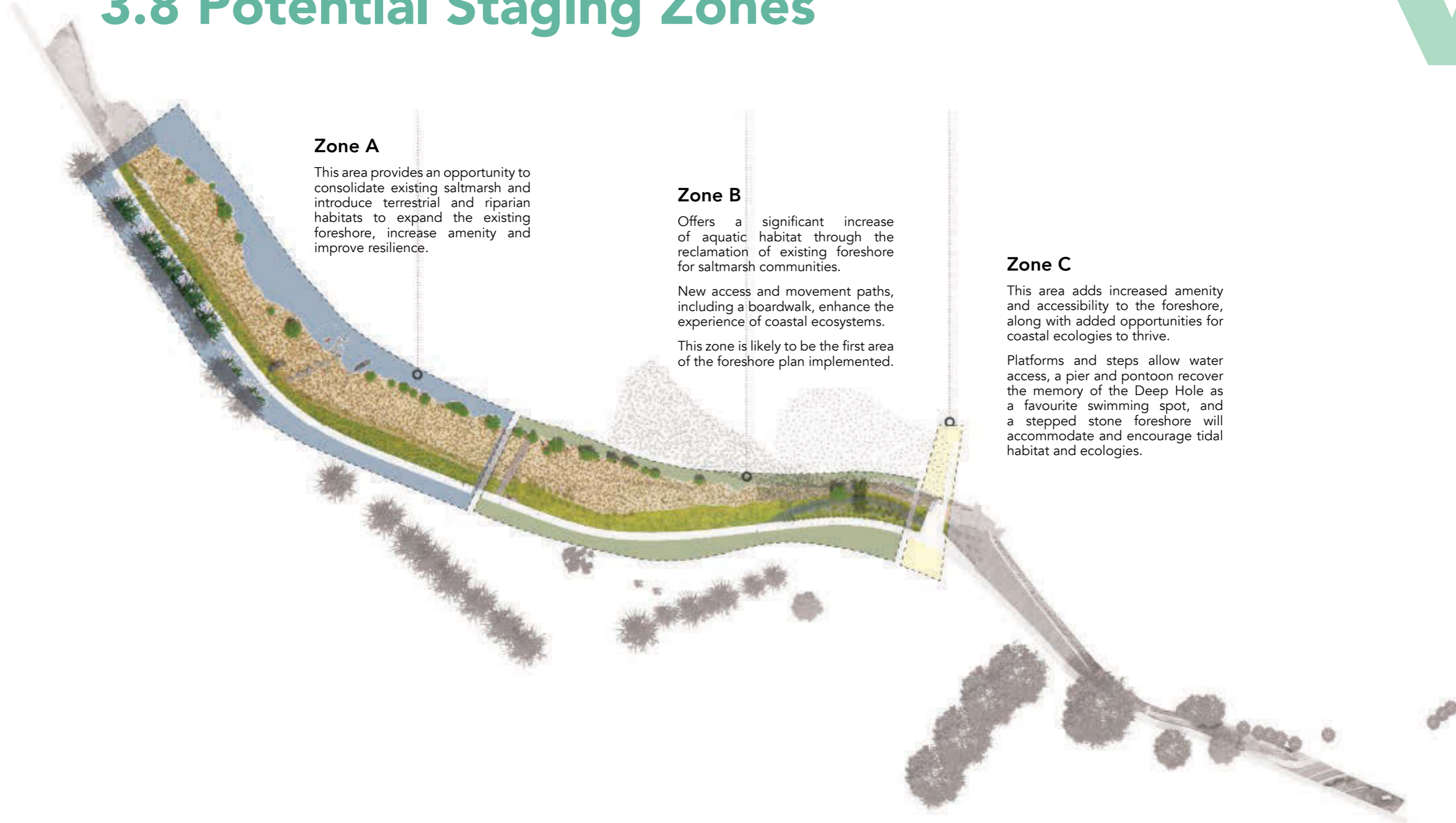
Finally, the project introduces an oyster reef as part of a broader state initiative to bring back shellfish reef ecosystems as viable coastal ecologies – for the benefit of both people and nature. The location of the reef and access points to the Deep Hole and Sand flats are positioned to facilitate recreation, the overlapping of human and natural ecologies and continued access and enjoyment of the Wagonga Inlet Foreshore

### Indicative Areas

Existing Grass Area	3220 m2
Existing Salt Marsh	13440 m2
New terrestrial planting	1260 m2
New Saltmarsh	2520 m2
Total new planted area	3780 m2
New public domain area	1270 m2



# 3.8 Potential Staging Zones



### Zone A

This area provides an opportunity to consolidate existing saltmarsh and introduce terrestrial and riparian habitats to expand the existing foreshore, increase amenity and improve resilience.

### Zone B

Offers a significant increase of aquatic habitat through the reclamation of existing foreshore for saltmarsh communities.

New access and movement paths, including a boardwalk, enhance the experience of coastal ecosystems.

This zone is likely to be the first area of the foreshore plan implemented.

### Zone C

This area adds increased amenity and accessibility to the foreshore, along with added opportunities for coastal ecologies to thrive.

Platforms and steps allow water access, a pier and pontoon recover the memory of the Deep Hole as a favourite swimming spot, and a stepped stone foreshore will accommodate and encourage tidal habitat and ecologies.

# 3.9 Planting Palette 1

## Saltmarsh Species



Knobby club rush  
*Ficinia nodosa*



Sea Rush  
*Juncus kraussii*



Shrubby Glasswort  
*Tecticornia arbuscula*



Seablite  
*Suaeda australis*



Sapphire  
*Sarcocornia quinqueflora*



Streaked Arrow-grass  
*Triglochin striata*



Sand Couch  
*Sporobolus virginicus*



Swamp Weed  
*Selliera repens*

# 3.10 Planting Palette 2



## Terrestrial Species



Pigface  
*Carpobrotus glaucescens*



Paroo Lily  
*Dianella caerulea*



Beach Spinifex  
*Spinifex sericeus*



Coastal Rosemary  
*Westringia fruticosa*



Coastal Beard-heath  
*Leucopogon parviflorus*



Lomandra  
*Lomandra sp.*



New Zealand Spinach  
*Tetragonia tetragonioides*



Coastal Tea-tree  
*Leptospermum laevigatum*

# 3.11 Preliminary Costings

High Level Cost Estimate based on Concept Design with Numerous Unknowns\*

Item	Rate		Unit	Qty	Amount (ex GST)
Preliminaries	\$	30,000.00	Item	1	30,000.00
Site Establishment	\$	70,000.00	Item	1	\$ 70,000.00
Site excavation and grading	\$	50.00	m3	1500	\$ 75,000.00
Disposal (Conditions unknown GSW identified)	\$	250.00	m3	1500	\$ 375,000.00
Sandstone rip-rap batter (incl geofab and void filling)	\$	200.00	m3	420	\$ 84,000.00
Formal Access paths	\$	500.00	lm	80	\$ 40,000.00
Saltmarsh treatment	\$	130.00	m2	2520	\$ 327,600.00
Terrestrial treatment	\$	140.00	m2	1260	\$ 176,400.00
Boardwalk	\$	850.00	lm	65	\$ 55,250.00
Sandstone Block Features/Access	\$	600.00	m2	420	\$ 252,000.00
Concrete path/landing	\$	250.00	m2	520	\$ 130,000.00
Concrete ramp	\$	400.00	m2	30	\$ 12,000.00
On ramp Pontoon	\$	2,000.00	m2	60	\$ 120,000.00
Concrete pontoon	\$	4,500.00	m2		\$ -
Total					\$ 1,747,250.00
Lower (-20%)					\$ 1,397,800.00
Upper (+20%)					\$ 2,096,700.00

\*These costings do not include the construction of shellfish reefs

# Wagonga Inlet Living Foreshore





**short pants  
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**city making + liveability**

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