

BYRON FORESHORE

BYRON FORESHORE LANDSCAPE CONCEPT

Prepared by Plummer & Smith Pty Ltd
with Byron Shire Council

Byron Shire Council acknowledges the Traditional Aboriginal Custodians and recognises the continuing connection to lands, waters and country.

We recognise and respect the Bundjalung of Byron Bay-Arakwal and the Widjabul Wia-bul Peoples' native title interests within the Shire.

Byron Shire Council also acknowledges the Tweed Byron, Jali and Ngulingah Local Aboriginal Land Councils, under the Aboriginal Land Rights Act NSW 1983.

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Document Control

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Introduction

Cavanbah (Byron Bay) has a cultural history as a meeting place, with people drawn to the environment, the community and the lifestyle.

The Byron foreshore is one of the community's most beloved places, as well as attracting a huge amount of visitors every year. One of Australia's most iconic locations, it is also under the strain of ever increasing use and environmental impacts, with aging and degraded infrastructure.

This plan aims to create a space that addresses these challenges, while retaining the local rituals and rhythms out of our place and celebrating its natural beauty. The design proposes a space where everyone is safe and welcome, a canvas on which the community can tell its stories and show its creativity through future play and art elements.

In this concept we want to create space for people to linger, inspire the investment in infrastructure that Byron Bay requires, and provide for the future needs of the community and the environment.

The following document provides landscape proposals and management strategies for the Byron Bay foreshore. The foreshore zone investigated for this projects includes:

- Main Beach car park;
- Apex Park;
- Denning Park; and
- Clarkes Beach

The Landscape Concept integrates cultural, historical, community, and environmental considerations. By leveraging the insights gained from background documents, site analysis, and community/stakeholder engagement, the proposed design seeks to create a vibrant and sustainable public space that honors the past while embracing the future.

This concept plan is designed to provide an overarching vision for the foreshore, which can be delivered in stages over the next 5 – 10 years. After the community provides their comments and feedback, Council will revise the concepts for final adoption, and then move on to detailed design for early stage works which will be focussed on new amenities, play elements and opportunities for art and culture.

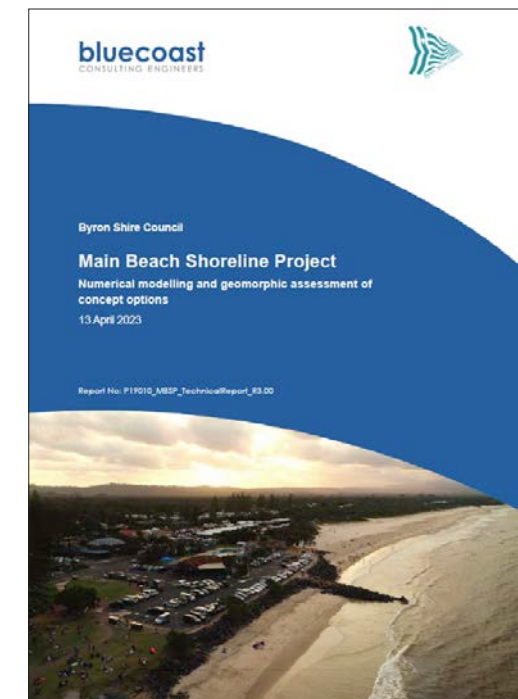
Supporting Documents

There are existing planning and strategy documents that form part of the supporting material for this Landscape Concept, including:

Byron Bay Town Centre Masterplan
by McGregor Coxall



The Main Beach Shoreline Project
by BlueCoast Consulting Engineers





1
**Project
Background
& Analysis**

1.1 The Site



The Byron Foreshore is an important public space for both the local community and visitors to the area. The site for this project is the section of foreshore that runs adjacent to the Byron Bay beaches and town centre for approximately 1 km. The site runs from The Wreck / Main Beach car park in the west to Clarkes Beach and the Beach Cafe in the east. The foreshore parklands comprise Main Beach, Apex Park, Denning Park and Clarkes Beach.

Site analysis reveals several key findings that inform the proposed design. Knowledge of the existing conditions, including environmental factors and community dynamics, enables enhancement and mitigation strategies to be proposed.

The rich cultural and historical context of the Byron Foreshore serves as a critical foundation for future design decisions, ensuring that any interventions are sensitive to the area's heritage while also meeting contemporary needs.

Environmental sustainability is prioritised throughout the design process, with measures in place to preserve and enhance the natural ecosystems of the foreshore.

EXISTING CONDITIONS



Existing rock protection wall- wall is degraded in places and presents safety issues for path users in some locations



Limited space between the Main Beach car park and the rock wall- inaccessible when busy



Simple spaces for enjoying the landscape setting



Foreshore paths through Apex Park are not universally accessible and are undersized for the quantity of users



Open space areas within Apex Park accommodate large numbers of people for informal gatherings



Apex Park has a simple and relaxed character



Existing beach access is steep, degraded and shared by vehicles and pedestrians



Significant vegetation- a defining feature of Apex Park

EXISTING CONDITIONS



In several areas of the foreshore existing paths and elements clutter space and impede comfortable open space flow



Existing foreshore erosion



The majority of existing furniture on the foreshore is not univerrally accessible



Existing foreshore play spaces could be improved to better service the community



Existing foreshore path- opportunities to upgrade paths for additional width and improved surfaces



A number of existing trees in the foreshore open space areas are aging- succession planting will form part of foreshore proposals and on-going management



Dune stabilisation works have been undertaken along the foreshore and will continue



Informal shaded open space is a defining characteristic of the foreshore

1.2 Planning Background

An important part of the planning background for this Byron Foreshore Landscape Concept is the *Byron Bay Town Centre Masterplan* (BBTCMP) produced by McGregor Coxall. The BBTCMP sets out a planning vision for the town centre of Byron Bay, articulating community desires established through a process that included extensive community consultation. The BBTCMP vision for the foreshore was to **'establish a single coherent and connected foreshore open space'** and that the Main Beach area in particular **'should be established as a continuous foreshore park, catering for large events, spaces for hanging out, picnics, passive and active recreation'**.

In addition to this the *Main Beach Shoreline Project* (MBSP) undertaken by Bluecoast Consulting Engineers establishes a range of potential options for managing coastal protection requirements in the Main Beach sector of the Byron foreshore.

The research and proposals included in both of these documents have been considered as part of this project. Alongside this there has also been additional community and stakeholder consultation regarding community desires and functional and operational considerations influencing potential outcomes for foreshore spaces.

Note- the quote to the right are taken from the BBTCMP by McGregor Coxall.

'Main Beach should be celebrated as a natural foreshore environment that supports both active and passive recreational uses, strengthening Main Beach's role as Byron Bay's most popular asset'

'A Main Beach boardwalk that sympathetically intergates coastal protection, seating and east to west pedestrian movement'

'Provide a seamless east to west foreshore experience'



'Apex Park should be upgraded to improve the foreshore public domain experience. Through reducing the scale of Main Beach Car Park, an extended Apex Park can be established allowing both locals and visitors a pedestrian prioritised sense of arrival'

'Retain and enhance Apex Park iconic views'

'Clarkes Beach character of endemic vegetation and 'bush tracks' to the beach should be retained'

1.3 Culture & History

Bundjalung of Byron Bay Arakwal People are the traditional owners of Cavanbah (Byron Bay) and have lived in the coastal landscape around Cavanbah for at least 22,000 years.

Cavanbah has always been an important meeting place for Arakwal People and the People of the Bundjalung Nation.

Native Title Rights

Native Title is the recognition in law of traditional owners' rights and interests in land and waters according to their own traditional laws and customs.

Bundjalung of Byron Bay Aboriginal Corporation hold Native Title rights and interests on behalf of the Arakwal People of certain lands and waters in and around Cavanbah (Byron Bay).

Nguthungulli (Julian Rocks)

Nguthungulli, said to be the Father of the World, is a significant and sacred Aboriginal site associated with several dreaming stories.

Walgun (Cape Byron)

Walgun, meaning shoulder of the creator in the Bundjalung language, is the Australian mainland's most easterly point and is significant to the Arakwal and other Bundjalung People as a place for gatherings and ceremonial practices.

Cavanbah (Byron Bay)

Cavanbah means meeting place in the Bundjalung language, which speaks to its importance to Arakwal and other Bundjalung People.

Totems

Totems connect Arakwal and other Bundjalung people to Country, each other, and to culture.

Some totems Arakwal share as messengers to introduce culture and explore Country, including:

- Kabul (Carpet Snake);
- Wajung (Dolphin);
- Miwing (Sea Eagle);
- Wollum (Brush Turkey);
- Bijahlin (Pied Oystercatcher); and
- Binguing (Turtle)

Arakwal and Bundjalung Culture

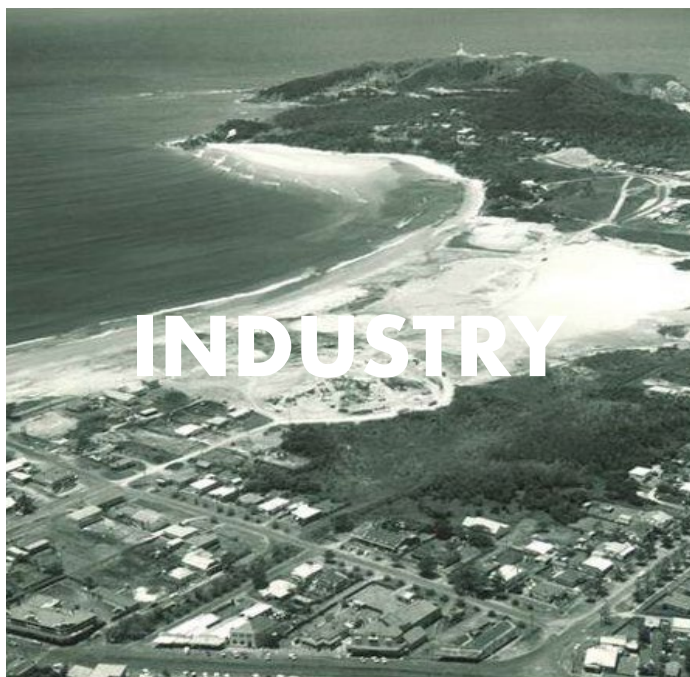
Arakwal invite everyone to come and learn about their Culture. Arakwal say it helps to look and listen with hearts as well as heads to experience their way of sharing knowledge and to better understand who Arakwal are and how they connect to Country.

Maintaining cultural traditions and looking after Country are important for Arakwal and other Bundjalung People's identity and well-being and it shows respect to ancestors.

This project will identify opportunities for Aboriginal cultural education, protection and celebration.

1.4 Recent History

A diverse history of changing and continued experience.



HISTORICAL INDUSTRY

Byron's foreshore was the location for two of the towns significant historical industries- whaling and sand mining.



COMMUNITY

Cavanbah's (Byron Bay's) cultural history as a meeting place has continued to present day. Byron is home to a diverse and passionate community- a mix of old and new, young and old.

The Byron Bay population and yearly tourism has significantly increased since 1980, and continues to grow.



PLAY

Byron Bay, and particularly its foreshore, has always been a place, and a drawcard, for play. In the past visitors have come to the foreshore following train and boat journeys. It has always been a desirable place to meet, connect, relax, and play.



SURFING

Surf culture is embedded within the story of Byron's community culture. Byron Bay is part of a chain of significant surfing destinations along the east coast of Australia.

BYRON FORESHORE



2 Project Principles & Vision

2.1 Project Principles

The following principles underpin the analysis and the proposals. The principles are inter-related: success in one supports success in another.



CULTURE

Cultural considerations encompass the deep, long, and on-going Arakwal and other Bundjalung Peoples' cultural connections to the landscape, and on-going connection to Country and cultural practices. There is also the laid back beach culture that underpins Byron's atmosphere.



ENVIRONMENT

The Foreshore is a site under considerable stress. This stress comes from both human and natural sources. The Foreshore is, justifiably, a much loved and much visited site with ever increasing numbers of people enjoying the amenity on offer. This inevitably places the ecology of the site under strain. Combined with this 'land based' stress the site is also at risk of considerable 'sea based' stress. Environmental factors such as sea level rise and storm surge impacts can have both slow and sudden impacts on foreshore stability- as seen over recent years. On-going management and care for the dune landscapes and ecology are critical to the environmental health of the foreshore.



COMMUNITY

The Byron Foreshore is a critical space for the local (and visiting) community. It is a place of gathering, connection, and recreation. It is a place full of cultural significance, associations, memories, and shared experiences.

A key consideration for this space is how can it support a healthy, vibrant, and connected community- and vice-versa...how can community participation and use support a healthy foreshore into the future?



FUTURE

As with related planning documents such as the *Byron Bay Town Centre Masterplan* and coastal management planning, a key purpose of this plan is to establish an agreed direction for future foreshore improvements and embellishments to ensure the space can continue to be enjoyed into the future. The proposed direction needs to ensure it can support culture and community and that it has ecological and environmental health and resilience.

2.2 Project Vision & Objectives

foreshore vision...

“an inclusive and accessible foreshore where culture and the environment are respected and celebrated to ensure they are enjoyed into the future.”

CULTURAL OBJECTIVES

- ensure cultural sites and artefacts are protected and monitored through any future works
- acknowledge, protect and celebrate cultural stories and knowledge
- support on-going connection to Country
- acknowledge the importance of connection of Arakwal and other Bundjalung Peoples' to the foreshore
- celebrate and enable a laid back experience of beach culture

ENVIRONMENTAL OBJECTIVES

- ensure future landscape works and lighting design are complimentary to site ecology and adjacent marine environment
- ensure succession planting is undertaken to incrementally mature as aging vegetation dies. Select endemic species where possible
- protect and reinforce dune areas with both dune revegetation and maintenance of supporting vegetation through the foreshore parkland areas
- manage stormwater and landscape use to mitigate erosion impacts- particularly through Apex Park and for beach shower areas
- select durable materials that can withstand climatic conditions

COMMUNITY OBJECTIVES

- ensure comfortable and accessible community gathering and recreation spaces are provided
- improve accessibility and inclusivity for all throughout the foreshore
- ensure provision is made for community events
- allow for flexible use
- honor existing uses and community connections
- allow for emergency access

FUTURE OBJECTIVES

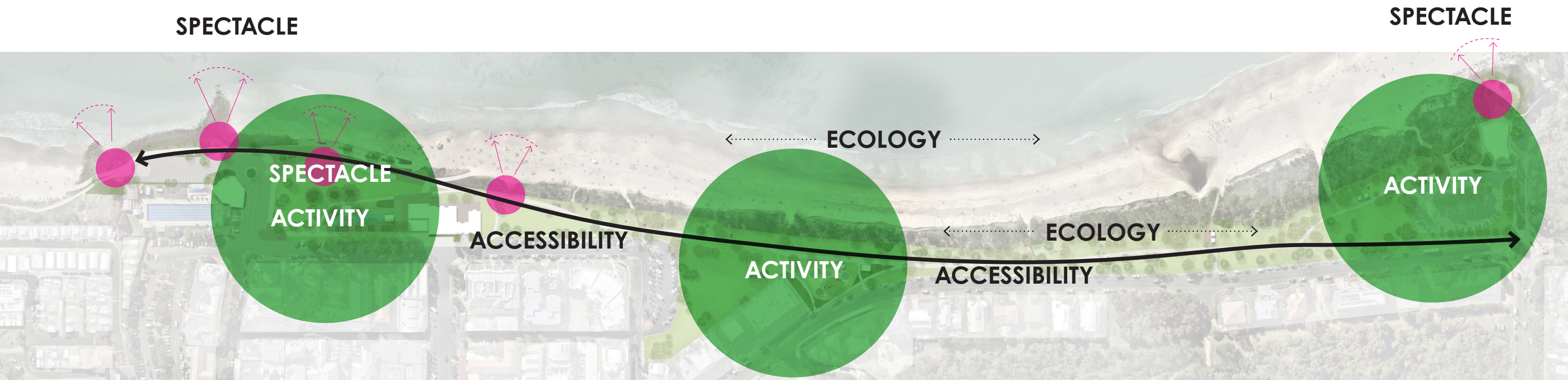
- ensure the landscape works include cultural, social, economical and environmental sustainability considerations for the future
- accommodate potential future uses of the foreshore by the community, including events
- consider and plan for predicted future weather and climate events
- propose strategies and implementations that are economically feasible into the future
- select durable materials to ensure longevity and maintenance is considered throughout proposals
- ensure foreshore works accommodate predicted foreshore recession and vegetation migration requirements

BYRON FORESHORE

3
The
Foreshore

3.1 Key Issues

Accessibility & Activity- the foreshore



ACCESSIBILITY

Accessibility along the length of the foreshore park is a key goal of the project. There are a few critical locations along the existing foreshore where accessibility is not provided or is compromised-

- the central area of Apex Park (the area associated with Main Beach beach access)
- a section of foreshore path east of the SLSC
- the path along the frontage of the Main Beach car park

Accessible access to the beach also needs to be provided and accessible beach showers where possible.

As well as movement accessibility there is also infrastructure accessibility- as a result additional accessible seating and shelters will be provided.

ACTIVITY

Whilst not heavily defined, there are three areas on the existing foreshore where there are activity nodes:

- Apex Park (including play space, amenities, and SLSC)
- Dening Park (play space, amenities, and events)
- Clarkes Beach (car park, amenities, cafe, and kayaks)

These activity nodes are retained and enhanced in the Landscape Concept

SPECTACLE / VIEW

Whilst there are filtered views to the ocean throughout the length of the foreshore, there are several locations where ocean and beach views are open and paramount. The critical zone for the 'spectacle' of the view is Apex Park / Main Beach. This is the area of the foreshore where large numbers of people congregate to simply enjoy the view (this also coincides with the section of the foreshore where the 'theatre' of public space- the spectacle of other people- is also at its most concentrated). Providing simple space and amenity to enable the comfortable appreciation of the setting is a key driver of the design in these areas.

An ocean view area at the location of the existing Beach Cafe will be reclaimed as public open space.

SPECTACLE / ACTIVATION

The key zone of the foreshore where the activity of public space becomes as much a part of the spectacle as the environmental setting is Apex Park. This is an area where large numbers of people congregate. It is also an area that is often further activated by impromptu performances and seasonal community activities such as nippers.

Accommodating these activities as part of the continued experience of the place is an important part of the proposal.

3.1 Key Issues

Foreshore Car Parking

The intention is that there is no net loss of parking, irrespective of which option is chosen



Main Beach Carparking Options

The proposal includes 2 options for the Main Beach car park:

- **Option 1**- retains ocean front parking while providing open space and access improvements. There would be a reduction of approximately 20 car parks in this option – these would be relocated to Bay St and Lawson St
- **Option 2**- removes 80+ car parks from the beach front and relocates them to a proposed new multi-story car park to be constructed behind the pool. The beachfront will become an extensive ocean-front green space. Allowance will be made for a drop off zone and priority parking areas for accessible carparks.



Existing car park with 86 car and 13 motorbike spaces



Lawson Street North carpark developed into a multistorey carpark



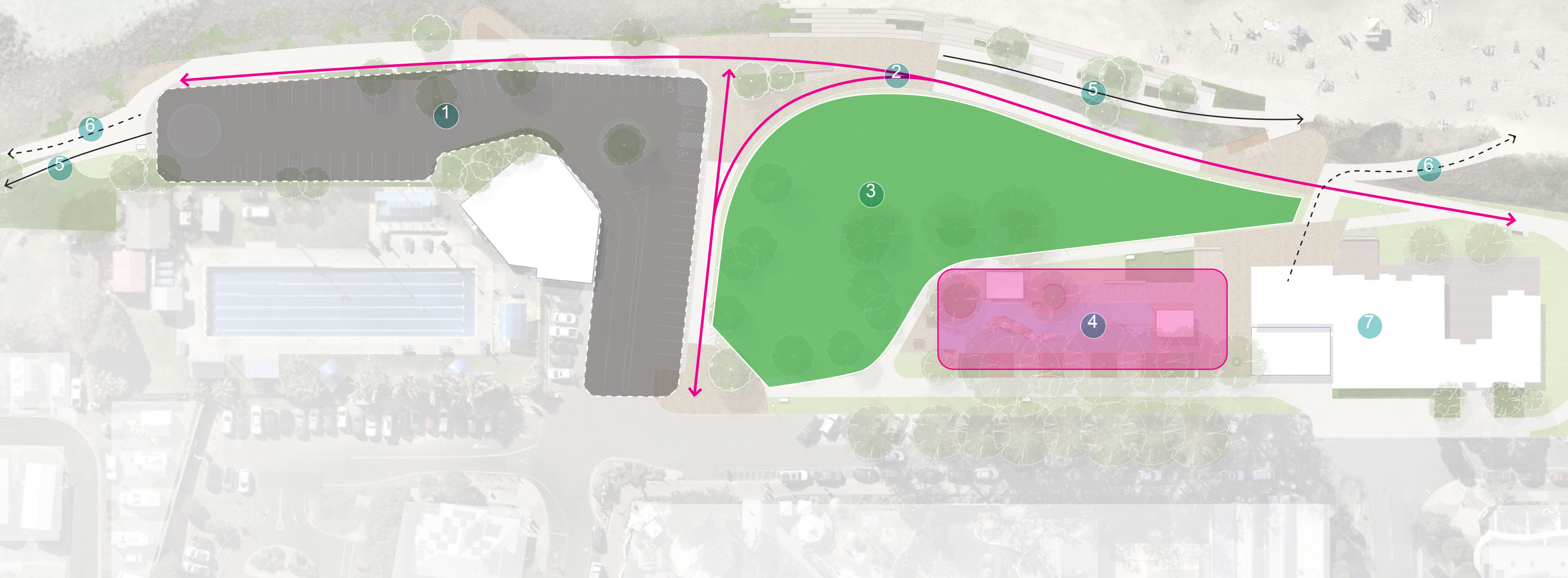
Re-orienting existing parking on the north side of Lawson Street to be investigated for increased parking yield



Consider increases in accessible parking spaces and parking spaces prioritising pram users and the elderly

3.1 Key Issues

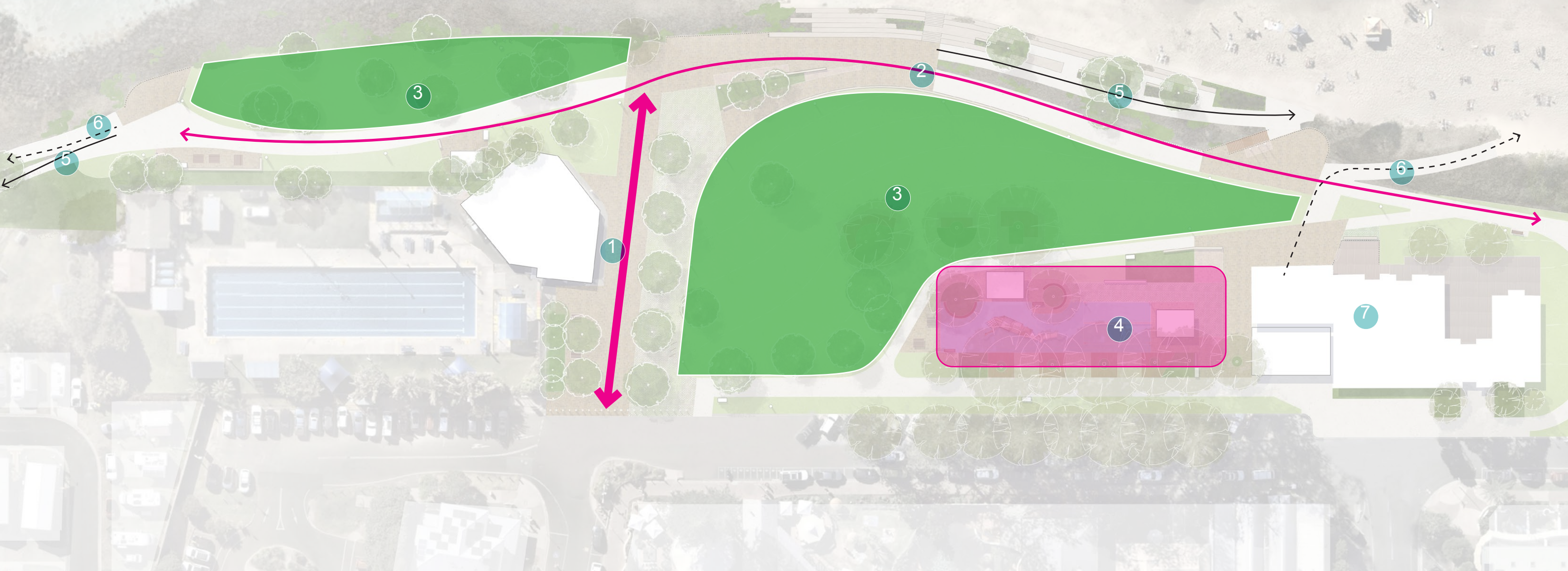
Main Beach car park & Apex Park Option 1



1. Car park and vehicular access
2. Main circulation path / walkway
3. Open space
4. Play and picnic
5. Accessible beach access
6. Vehicular beach access
7. Surf Life Saving Club (SLSC)

3.1 Key Issues

Main Beach car park & Apex Park Option 2



1. Pedestrian and service access spine
2. Main circulation path / walkway
3. Open space
4. Play and picnic
5. Accessible beach access
6. Vehicular beach access
7. Surf Life Saving Club (SLSC)

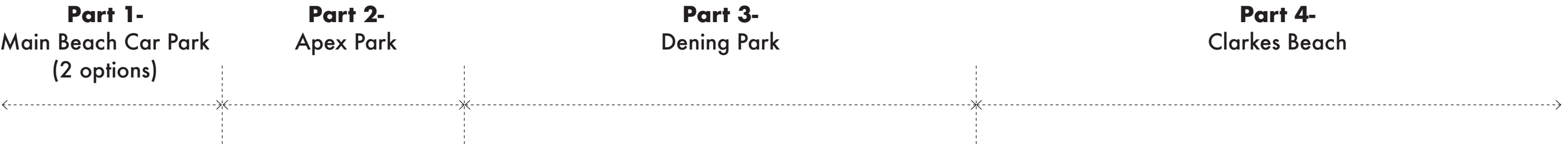
3.1 Key Issues

Coastal protection

Council's Coastal Management Program will drive the redesign and modification of the coastal protection structure (eg the removal or not of spur groynes, landward realignment or not, materials). This foreshore concept plan has been designed to the existing rockwall structure but will be updated if required once the preferred design option for coastal protection has been determined



3.2 Foreshore Key Plan- the parts

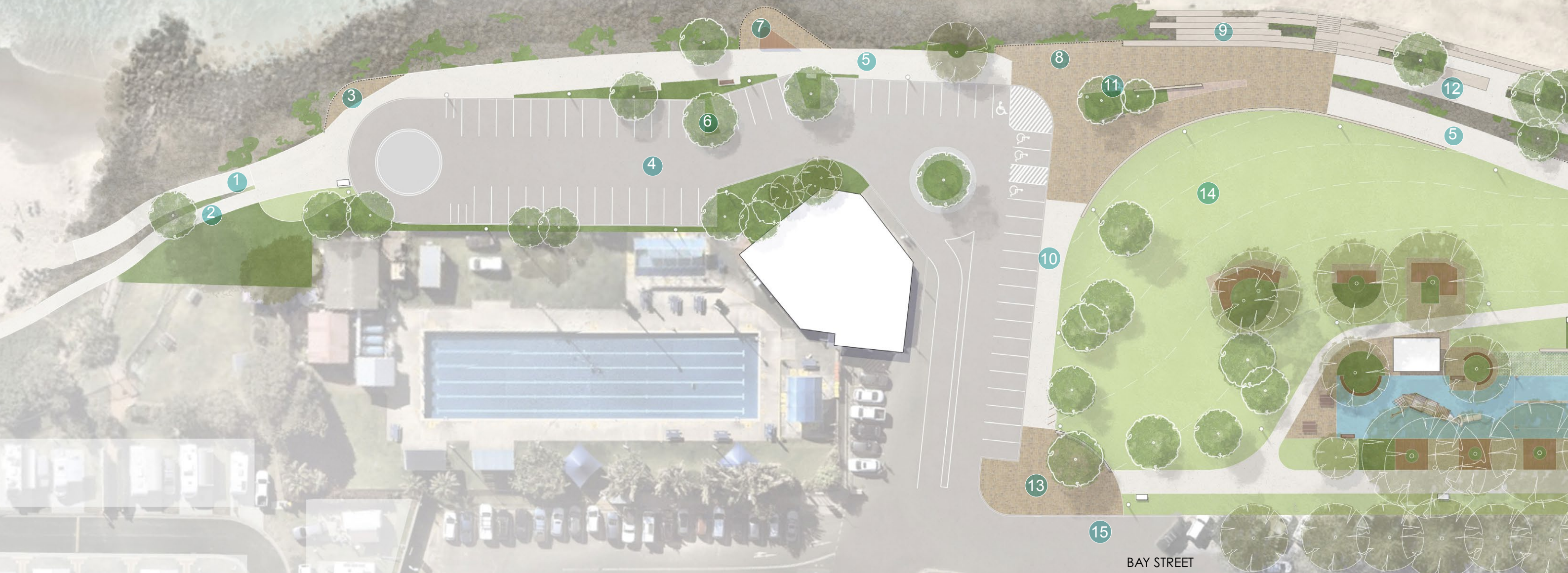


BYRON FOR SHORE

4
Proposals

4.1 Part 1- Main Beach Car Park Option 1

**ocean front car parking retained
but reduced and open space
extended**



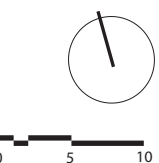
NOTES

1. Beach access (emergency vehicle)
2. Beach access path
3. Sunset / The Wreck viewing deck
4. Car park- redesigned to enable accessible promenade path and viewing decks and open space upgrades and extensions- minor reduction in numbers to be offset elsewhere in town centre / foreshore zone

5. Foreshore promenade path
6. New trees
7. Viewing deck
8. Main viewing deck and beach forecourt
9. Beach viewing and access terraces
10. New direct path to beach viewing and beach access forecourt

11. Beach showers
12. Accessible beach access path
13. Pedestrian entry space including feature paving, seating, natural shade and bike racks
14. Open space areas with views
15. Bus lay-by and 'drop and go'

-  New trees
-  Existing trees
-  Grass open space areas
-  Feature paving
-  Planting



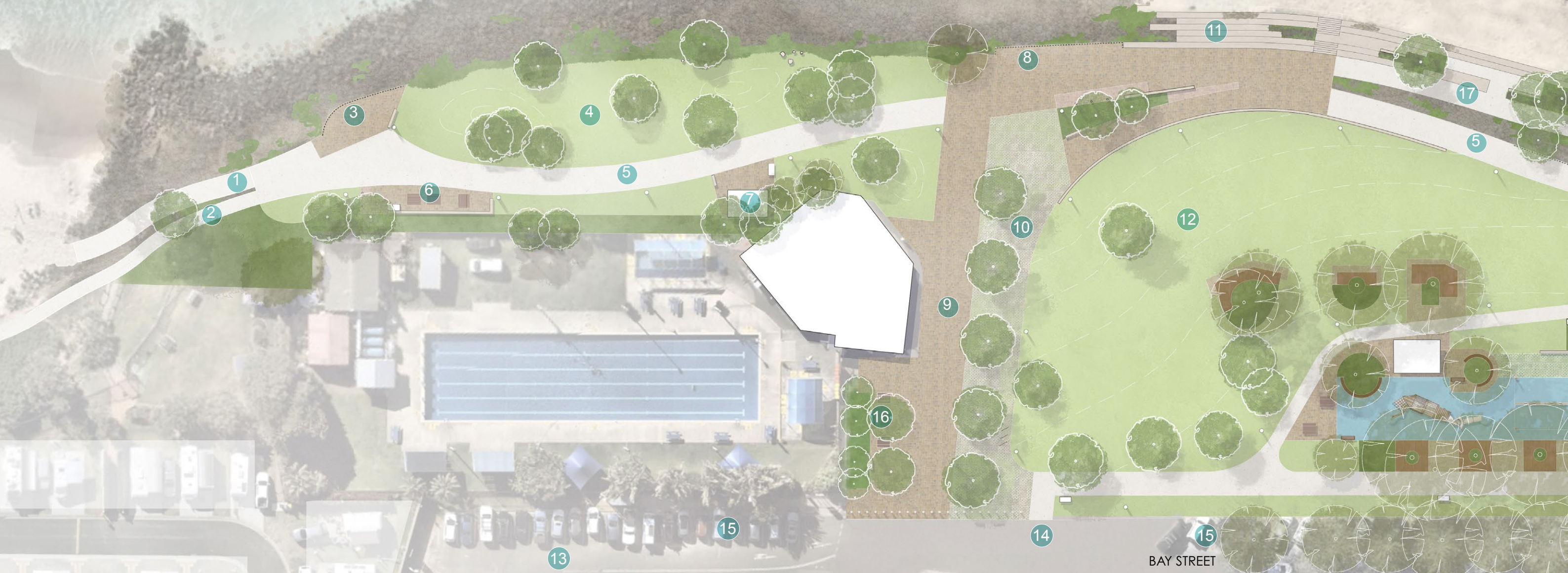
Main Beach Car Park Option 1- indicative perspective

view showing a redesigned foreshore car park that allows for viable accessible paths, beach viewing and extended Apex Park open space areas



4.2 Part 1- Main Beach Car Park Option 2

**ocean front car parking relocated
and open space extended**





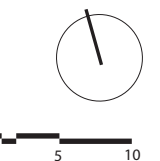
NOTES

1. Beach access (emergency vehicle)
2. Beach access path
3. Sunset / The Wreck viewing deck
4. Ocean front open space- grass and natural shade
5. Foreshore promenade path
6. Beach gathering space including beach showers, picnic tables, seating

7. Potential new accessible amenities
8. Main viewing deck and beach forecourt
9. Foreshore access spine- a combination of paved surfaces and permeable surfaces. Pedestrian access and emergency and service vehicle access
10. Permeable paving and grass
11. Beach access stairs and terraces
12. Open space areas with views

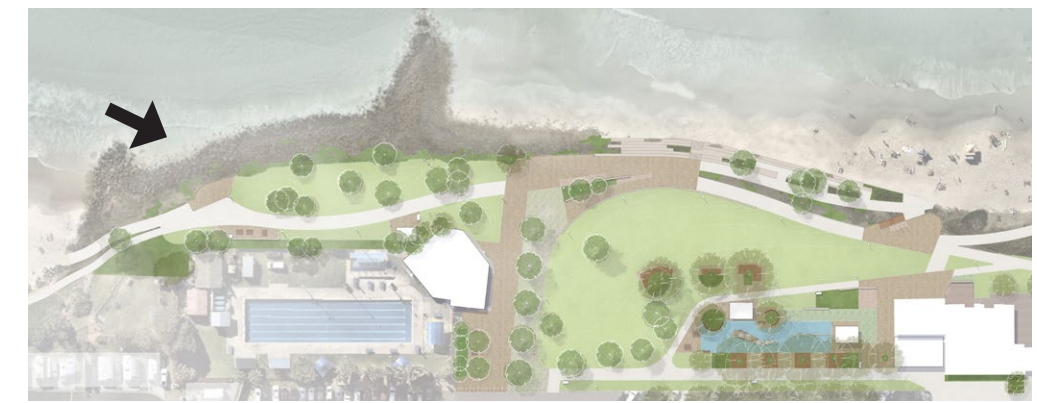
13. Construct multi-storey car park in Lawson Street North car park to service beachfront
14. Bus lay-by and 'drop and go'
15. Accessible and priority car parking spaces
16. Picnic tables, seating and natural shade
17. Accessible beach access path

-  New trees
-  Existing trees
-  Grass open space areas
-  Feature paving
-  Planting



Main Beach Car Park Option 2- indicative perspective

view showing the removal of the car park to allow for continuous and accessible ocean front public open space



4.3 Part 2- Apex Park

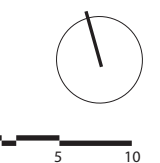
see section 4.1 and 4.2
for options 1 & 2 for
the Main Beach car park

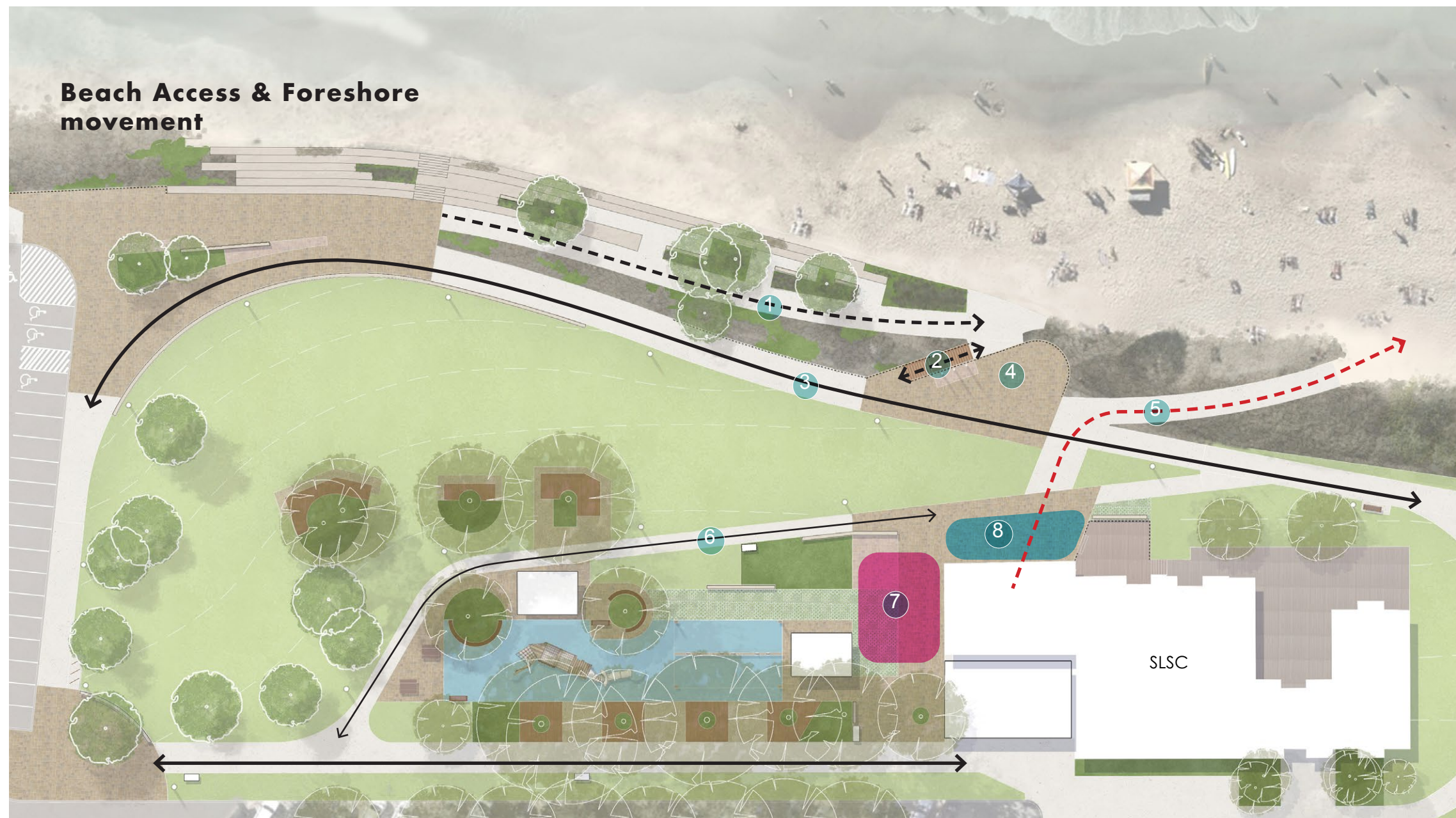


NOTES

1. Pedestrian entry space including feature paving, seating, natural shade and bike racks
2. Main viewing deck and beach forecourt
3. Foreshore promenade path
4. Accessible beach access path
5. Beach viewing and access terraces
6. Bio-filtration gardens and stormwater management
7. Beach showers
8. Open space areas with views
9. Concrete paths
10. Play activity zone- play structure and swings
11. Picnic shelter
12. Seating
13. Beach / patrol viewing and access deck
14. Stair access to beach
15. SLSC beach access for vehicles
16. SLSC forecourt space
17. New amenities
18. Seating decks in shaded areas under existing trees
19. Bus lay-by and 'drop and go'
20. Accessible and priority car parking spaces

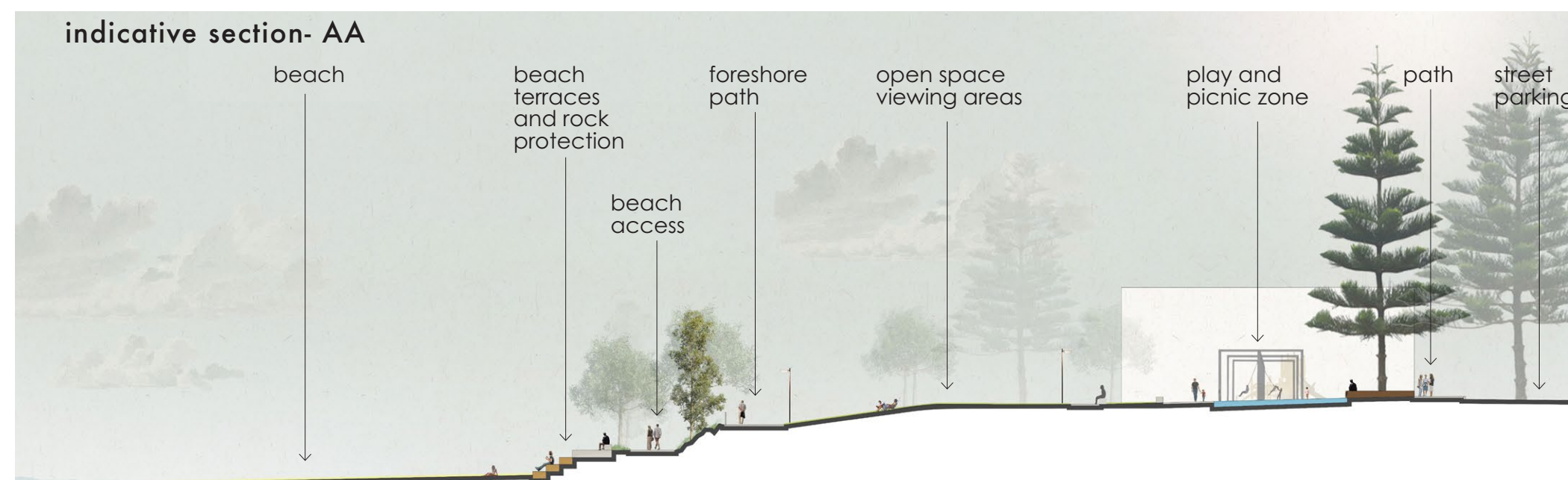
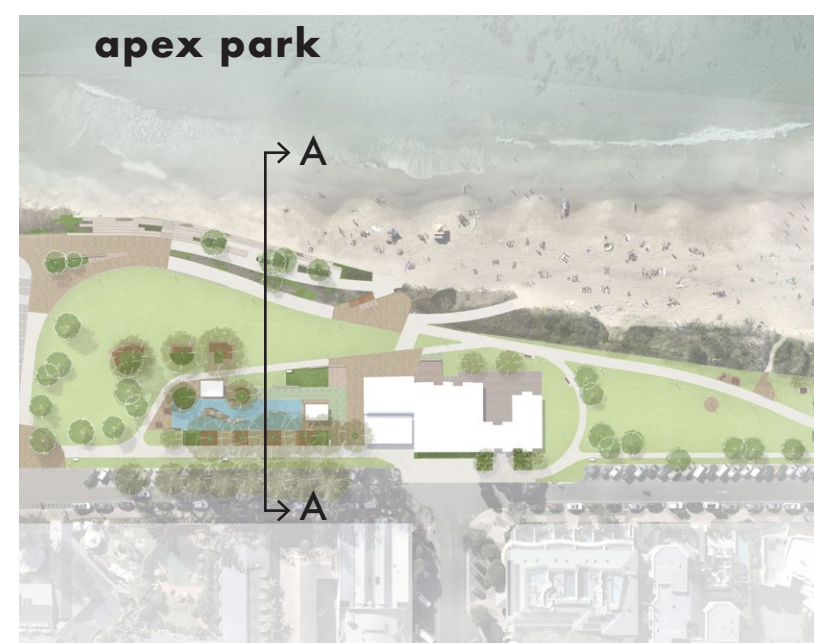
-  New trees
-  Existing trees
-  Grass open space areas
-  Feature paving
-  Planting





NOTES

1. Main accessible beach access path
2. Beach access stairs
3. Main foreshore path
4. Beach viewing deck (including beach showers)
5. Beach access ramp for SLSC vehicles
6. Secondary path
7. Gathering area- functional for Nippers gathering point and management of access to Nippers and SLSC storage
8. SLSC forecourt space



Apex Park- indicative perspective

view showing a realigned and accessible foreshore path along the ocean front of Apex Park, a secondary path along the activity zone of the park (play and picnic shelters), a new vehicle access for the SLSC, lighting improvements, and new beach viewing deck with beach access ramp and terracing beyond



Apex Park- indicative perspective

view showing the main beach forecourt area with seating, showers, and accessible paths, the beach access path and associated terracing, the extended Apex Park open space areas, and the new activity zone of the park including accessible paths, picnic facilities, seats and seating decks, and play



4.4 Part 3- Dening Park






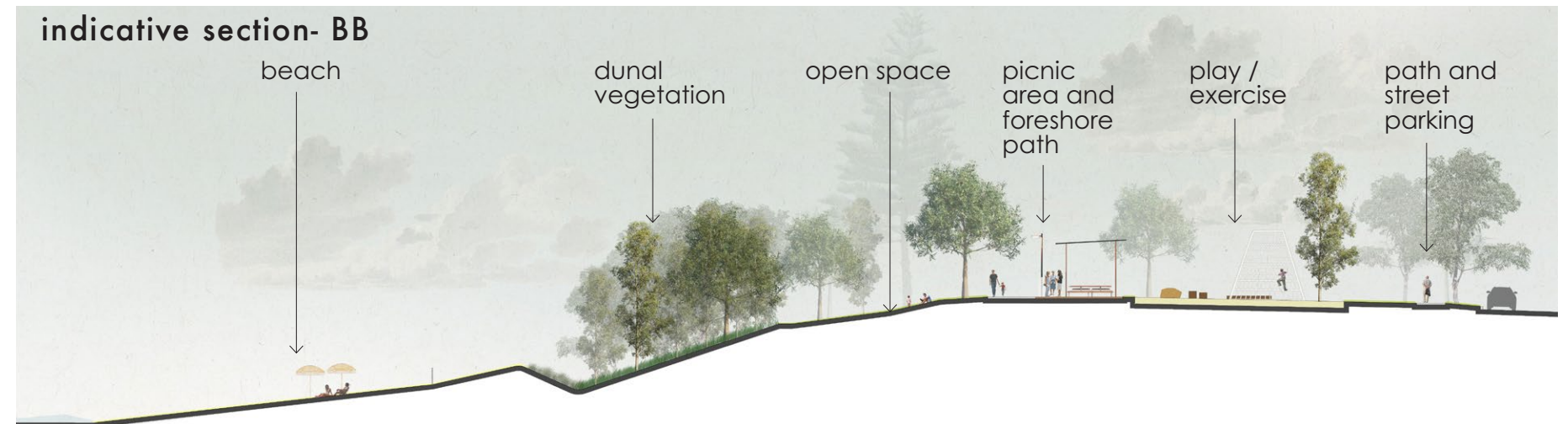
NOTES

1. 3m wide accessible foreshore path
2. Upgraded fence to existing beach viewing area
3. New path to car parking / road edge
4. Peace Pole with potential for small paving feature to base
5. Provision of accessible picnic tables and seats

6. Improved beach access and accessible beach shower area
7. New trees to compliment existing and establish succession planting
8. Existing car park
9. Event space- open space
10. Nature play and exercise pod zone
11. Picnic and BBQ shelters

12. Existing amenities block
13. New path connecting to beach access
14. Change current parking layout to gain additional carpark spaces
15. New planting areas
16. Dune revegetation and management areas
17. Existing trees to be retained

-  New trees
-  Existing trees
-  Grass open space areas
-  Feature paving
-  Planting







4.5 Part 4- Clarkes Beach



see following
page for
more detail

NOTES

1. 3m wide accessible foreshore path
2. New trees to compliment existing and to establish succession planting
3. Existing trees to be retained
4. Potential kayak storage facility
5. Picnic and BBQ shelters with equitable access
6. Existing car park retained
7. Picnic zone and beach entry gathering zone
8. New amenities building
9. Upgraded and realigned path
10. Reclaimed public space resulting from relocation of Beach Café
11. Building zone for Beach Cafe
12. Change current parking layout to gain additional carpark spaces
13. Additional picnic facilities under natural shade
14. Accessible beach shower with filtration planting to manage run off
15. Dune revegetation and management areas
16. Beach shower with filtration planting

-  New trees
-  Existing trees
-  Grass open space areas
-  Feature paving
-  Planting



NOTES

1. Circulation paths through and to public space
2. Beach access forecourt including seating, beach shower, amenities, gathering space
3. Picnic tables, gathering spaces and circulation space
4. New amenities building
5. Existing rock seating walls retained and repurposed in park setting
6. Small open space with natural shade, ocean views
7. Fig understory area- potential for minor nature play embellishments
8. Beach viewing and cultural interpretation forecourt with potential for small events- grass areas, paved areas, seating, interpretive and information signage
9. Existing verandah repurposed as boardwalk and viewing platform
10. Dune revegetation / stabilisation
11. Indicative building zone
12. Accessible beach shower with filtration planting to manage run off
13. Existing vegetation areas

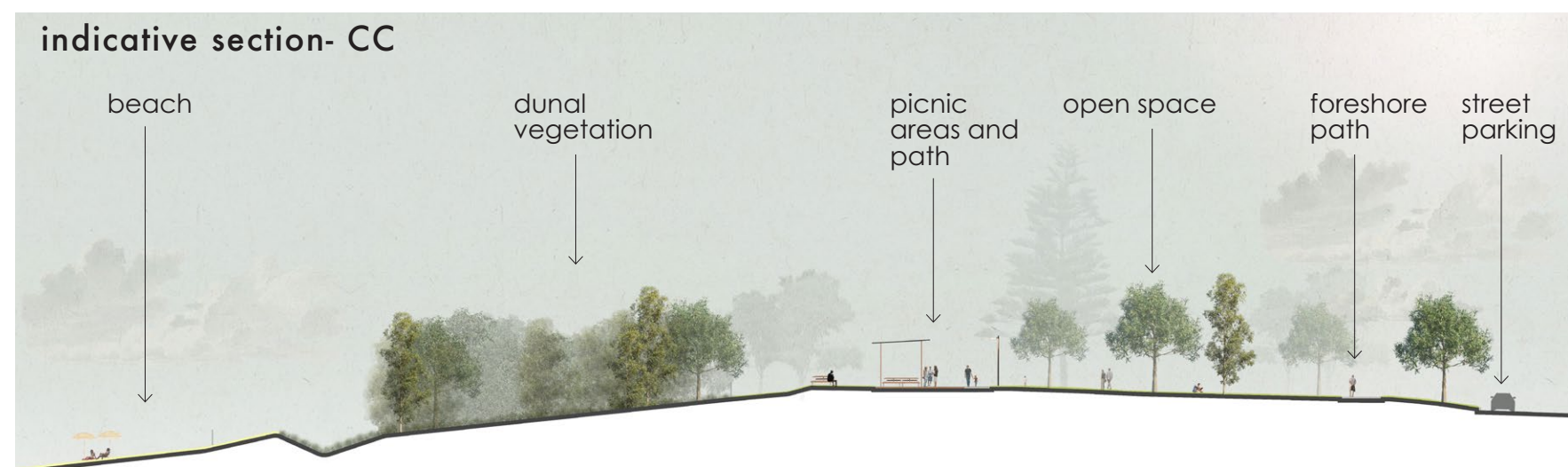
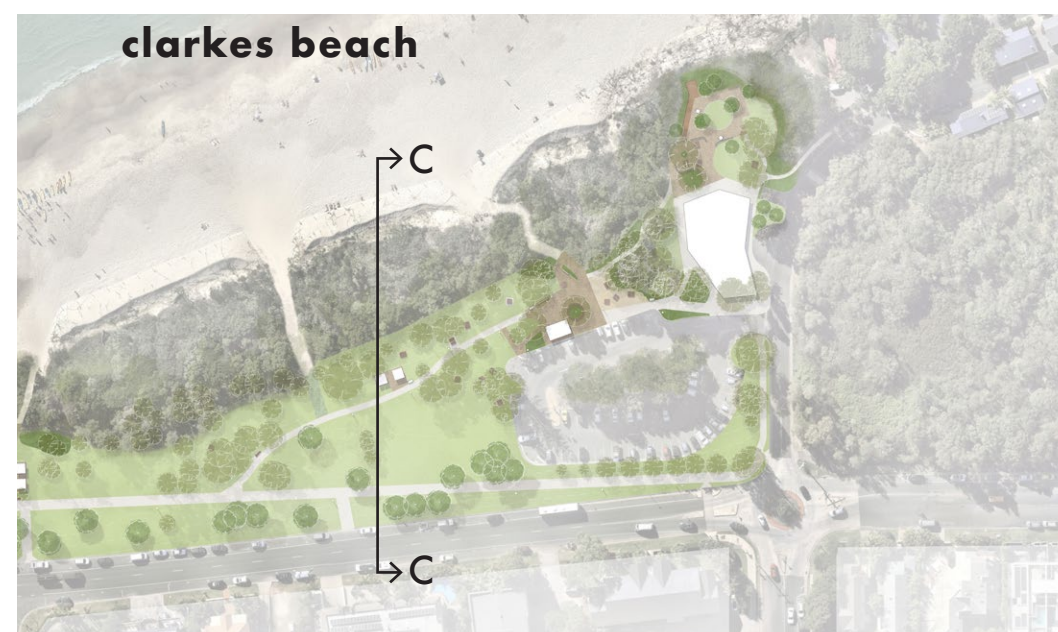
THE BEACH CAFÉ

The biggest change in this section is the relocation of the Beach Byron Bay café from its current site, and reconstruction further landward so it sits behind the 2050 coastal hazard line. Crown Lands, Council and key stakeholders have been working together on options for relocation and reconstruction of the building. The size and scale of the new building are under consideration by Crown Lands and the Beach café, and there will be further community consultation as plans progress. In the meantime, early concepts have been included in this foreshore design to:

- a. seek early community feedback on the proposal, and
- b. ensure the café relocation is considered in the broader context of the foreshore upgrades.

The area of the existing café building would be returned to open green space for community use, offering a unique ocean outlook and opportunities for small scale, bookable events such as weddings. This new public open space would include pathways connecting to the existing beach access, car park and Reflections Holiday Park.

It is proposed that the new café building would be similar in footprint to the current one, with casual, kiosk-style dining incorporated into the ground level. An additional, second storey would allow for catered functions and a more formal dining experience.



Clarkes Beach- indicative perspective

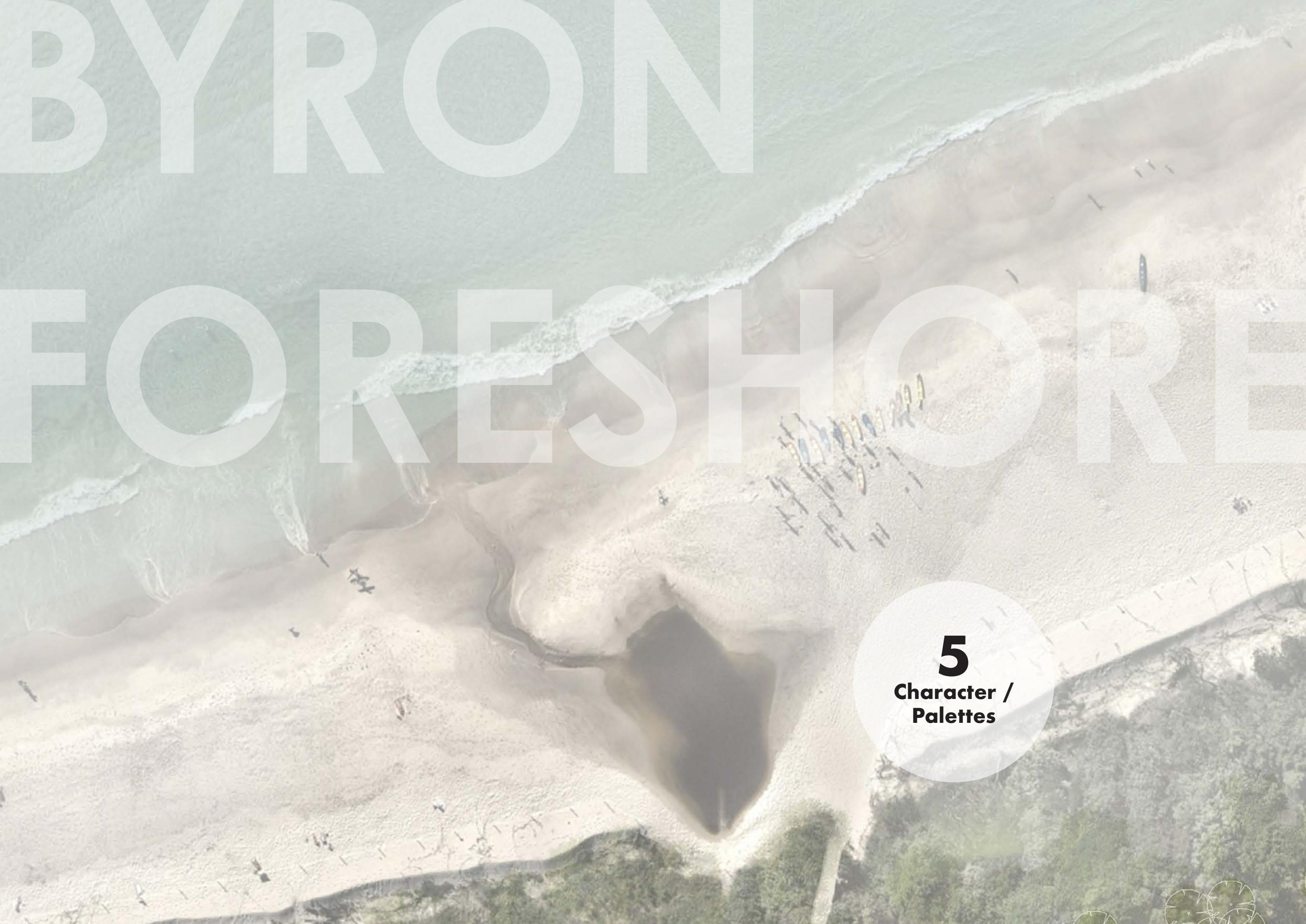
view showing the new beach front public space resulting from the relocation of the Beach Cafe, including picnic facilities, natural shade, circulation paths, and viewing decks



Clarkes Beach- indicative perspective

view showing the clarkes beach access zone including new amenities block, new seating and accessible beach shower, picnic facilities, lighting improvements, and paths connecting to the foreshore pathway network





BYRON

FORESHORE

5

**Character /
Palettes**

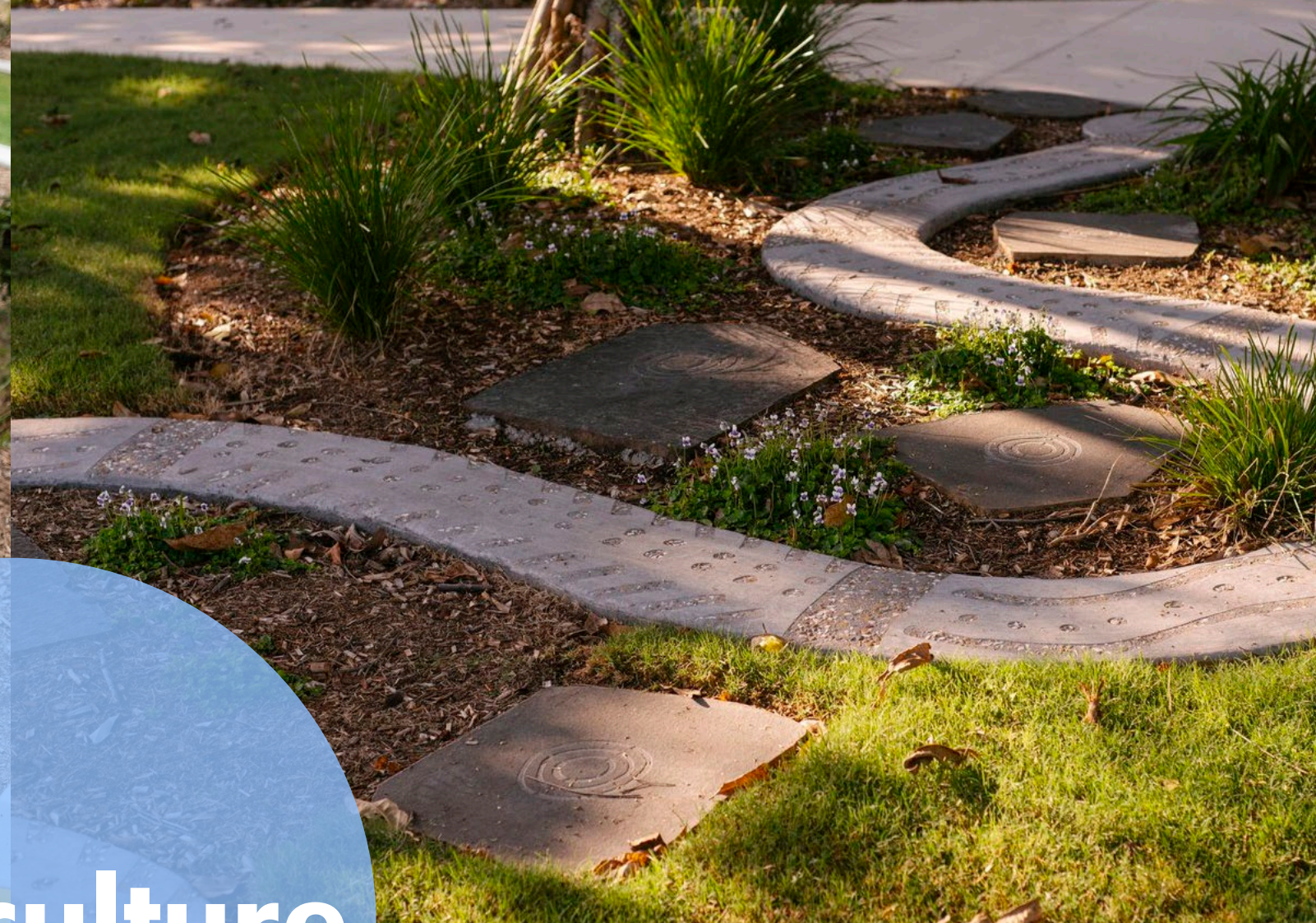
5.1 Landscape Character

landscape





play



art / culture



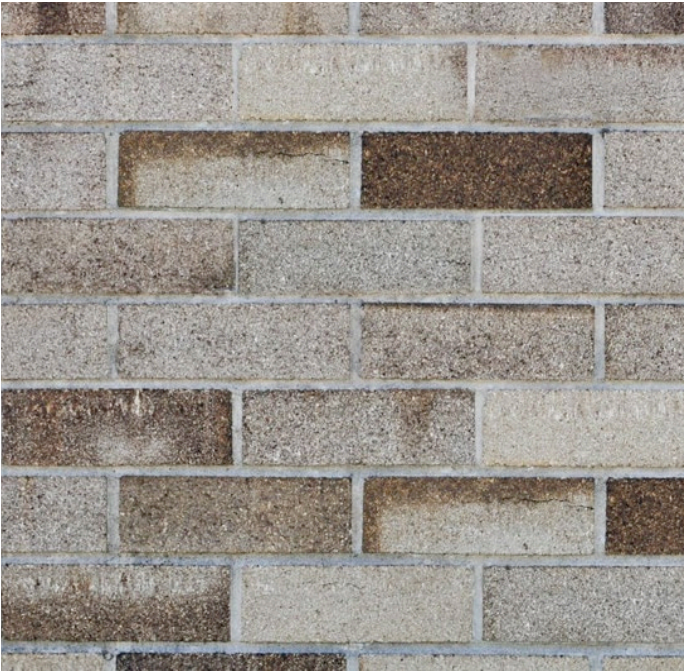
5.2 Materials



Concrete



Decomposed granite



Feature brick pavements



Grass paver



Granite stone setts



Terrace and boulder combination



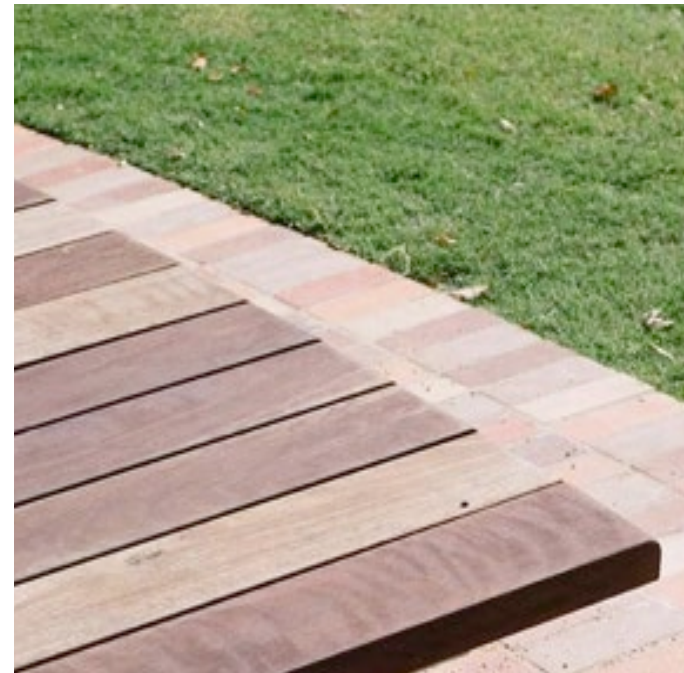
Stone terracing



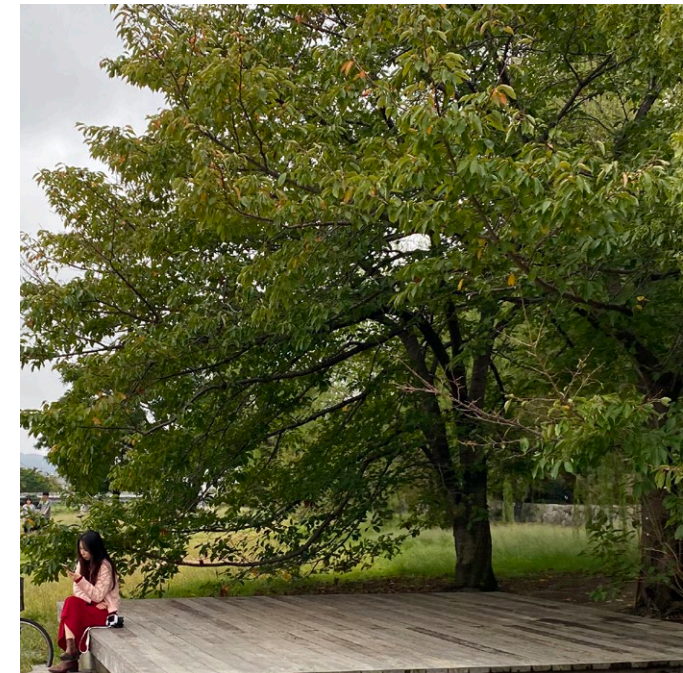
Basalt boulder infill



Potential feature treatments



Material features and textures



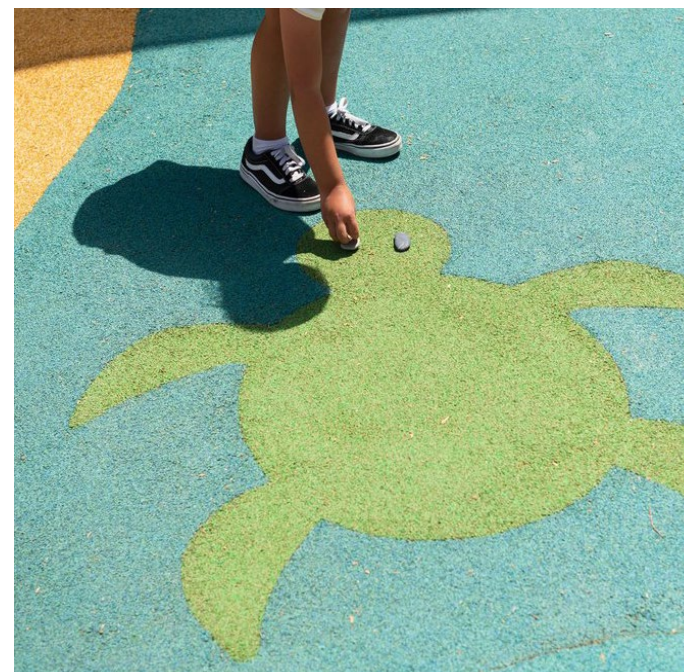
Platform seating / gathering under existing trees



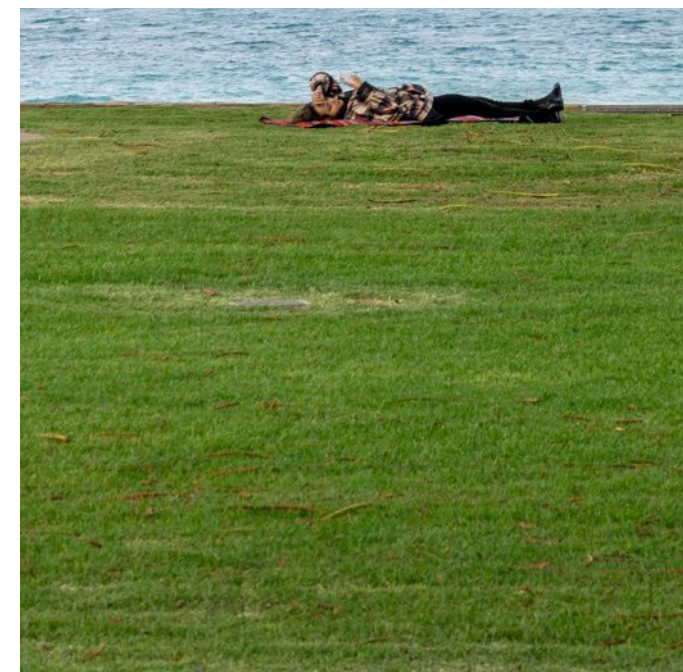
Planting and soft surfaces



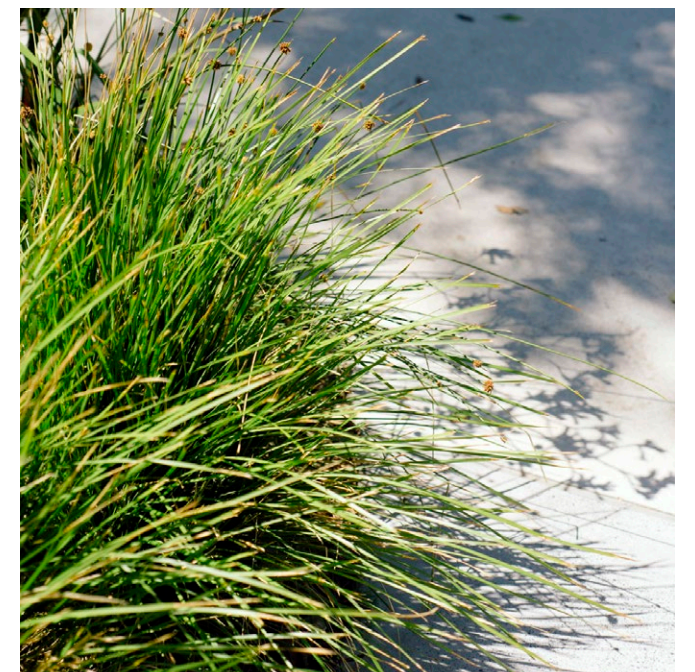
Plants and stone for stormwater gardens



Rubber softfall for some play zones



Grass open space



Planting and hard surfaces

5.3 Furniture



Backrest timber seat



Timber picnic table (under shelters)



Timber platform seat



Stainless steel accessible barbecue



Stainless steel bike racks



Lights



Bins



Shelters



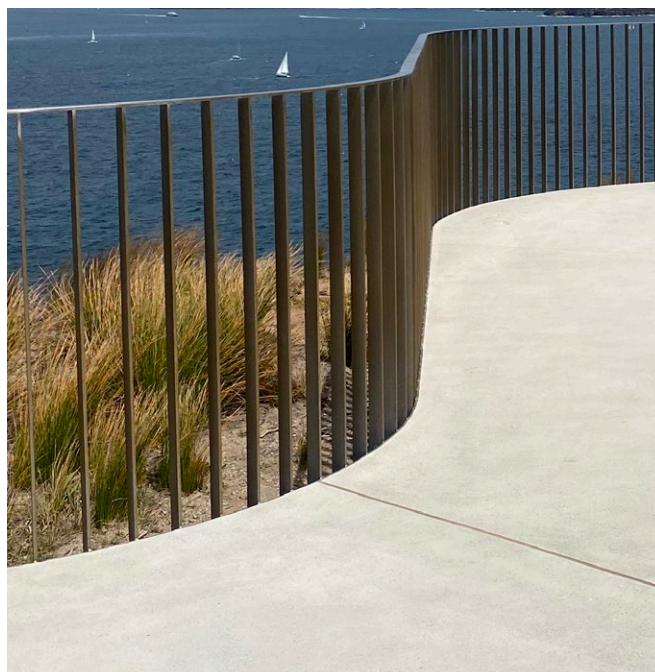
Sandstone seat



Stone wall to Apex Park open space edge



Potential for customised shelters in Apex Park



Stainless steel balustrade



Concrete seating walls



Timber picnic table (in park areas)

5.4 Plants

Trees

Blackwood	<i>Acacia melanoxylon</i>
Scented Wattle	<i>Acacia suaveolens</i>
Lilly Pilly	<i>Acmena smithii</i>
Beach Birds Eye	<i>Alectryon coriaceus</i>
Norfolk Island pine	<i>Araucaria heterophylla</i>
Coastal banksia	<i>Banksia integrifolia</i>
River Oak	<i>Casuarina cunninghamiana</i>
Swamp Sheoak	<i>Casuarina glauca</i>
Pink Bloodwood	<i>Corymbia intermedia</i>
Brown Kurrajong	<i>Commersonia bartramia</i>
Three-vein Laurel	<i>Cryptocarya triplinervis</i>
Tuckeroo	<i>Cupaniopsis anacardioides</i>
Blueberry Ash	<i>Elaeocarpus reticulatus</i>
Cottonwood	<i>Hibiscus tiliaceus</i>
Swamp Box	<i>Lophostemon suaveolens</i>
Macaranga	<i>Macaranga tanarius</i>
Broad-leaved Paperbark Tree	<i>Melaleuca quinquenervia</i>
Broad-leaved Lilly Pilly	<i>Syzygium hemilampra</i>

Shrubs / small trees

Long leaf wattle	<i>Acacia longifolia</i>
Fraser Island apple	<i>Acronychia imperforata</i>
Long leaf wattle	<i>Acacia longifolia</i>
Coast tea tree	<i>Leptospermum parviflorus</i>
Native current	<i>Leucopogon parviflorus</i>

Shrubs, grasses and ground covers

Midgem berry	<i>Austromyrtus dulcis</i>
Swamp Banksia	<i>Banksia robur</i>
Fern leaf banksia	<i>Banksia oblongifolia</i>
Coastal Cushion	<i>Banksia spinulosa 'coastal cushion'</i>
Swamp banksia	<i>Banksia robur</i>
Roller coaster	<i>Banksia integrifolia 'roller coaster'</i>
Tall sedge	<i>Carex appressa</i>
Pigface	<i>Carpobrotus glaucescens</i>
Yellow buttons	<i>Chrysocephalum apiculatum</i>
Clumping Cordyline	<i>Cordyline congesta</i>
Broad-leaved Cordyline	<i>Cordyline petiolaris</i>
Blue flax lily	<i>Dianella revoluta</i>
Knobby club-rush	<i>Ficinia nodosa</i>
Narrow-leaved Guinea Flower	<i>Hibbertia linearis</i>
Guinea Flower	<i>Hibbertia scandens</i>
Cogongrass	<i>Imperata cylindrica</i>
Goat's Foot	<i>Ipomoea pes caprae</i>
Matt rush	<i>Lomandra hystrix</i>
Verday	<i>Lomandra verday</i>
Lime tuff	<i>Lomandra 'lime tuff'</i>
Thyme Honey-Myrtle	<i>Melaleuca thymifolia</i>
Blue Tongue	<i>Melastoma affine</i>
Coastal Boobialla	<i>Myoporum insulare ssp. boninense</i>
Creeping Boobialla	<i>Myoporum parvifolium</i>
Rice paper flower	<i>Ozothamnus diosmifolius</i>
Native Iris	<i>Patersonia sericea</i>
Blue tussock grass	<i>Poa sieberiana</i>
Hairy Bush Pea	<i>Pultanea villosa</i>
Wedding Bush	<i>Ricinocarpus pinifolius</i>
Beach Fan Flower	<i>Scaevola calendulacea</i>
Spinifex	<i>Spinifex sericeus</i>
Warrigal Greens	<i>Tetragonia tetragonoides</i>
Fan Flower	<i>Scaevola albida</i>
Coastal rosemary	<i>Westringia fruticosa 'zena'</i>
Coastal rosemary	<i>Westringia fruticosa 'flat and fruity'</i>
Native Violet	<i>Viola hederaceae</i>
Bottlebrush Grass Tree	<i>Xanthorrhoea macronema</i>
Grass Tree	<i>Xanthorrhoea johnsonii</i>
Golden everlasting daisy	<i>Xerochrysum bracteatum</i>



Banksia integrifolia



Ficinia nodosa



Alectryon coriaceus



Spinifex sericeus

Appendix- plant community type summary

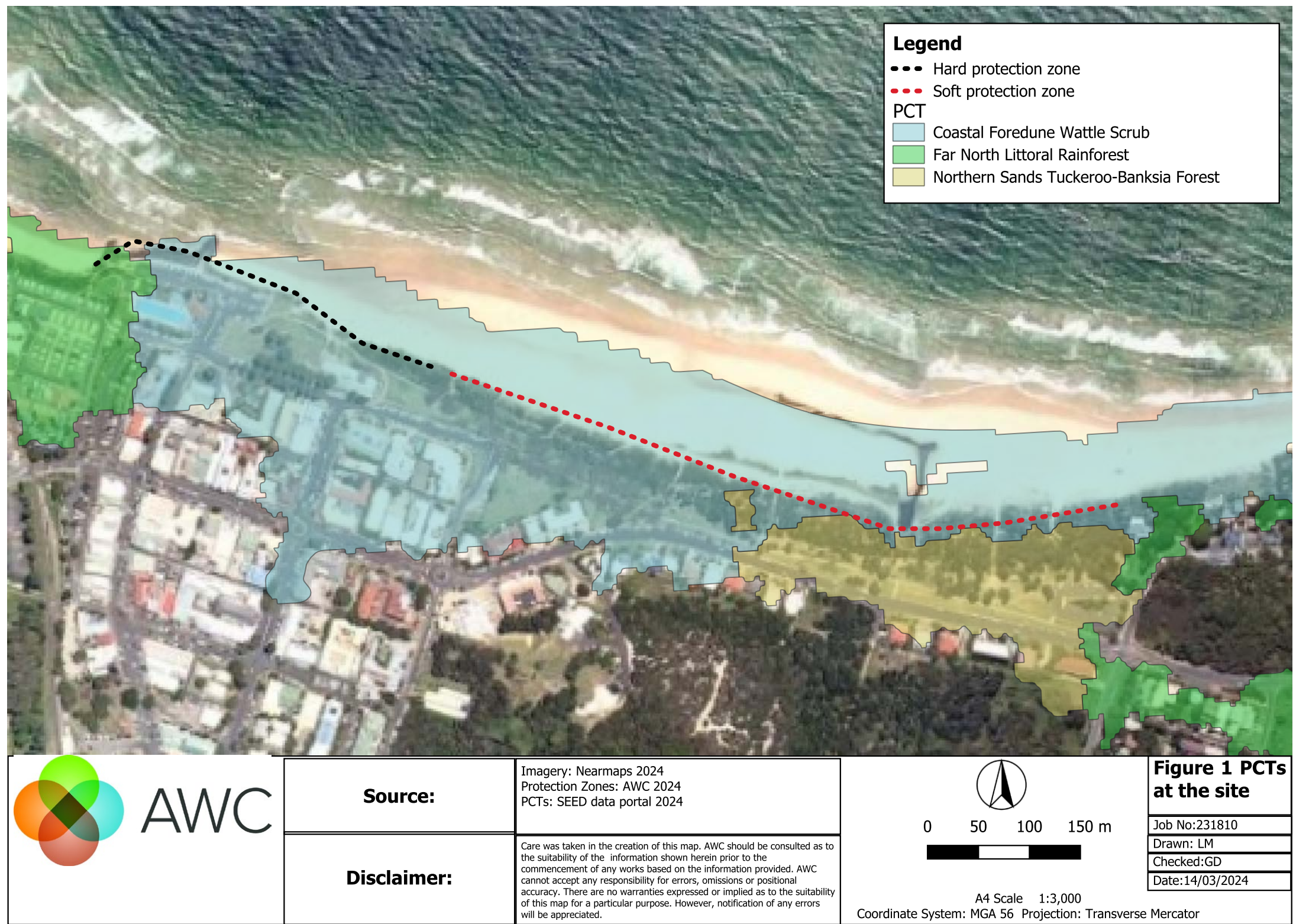




Table 1 PCT descriptions

PCT	Protection zone	Description
3788- <i>Coastal Foredune Wattle Scrub</i>	Hard, soft	<p>Tall to very tall open to closed shrubland found on coastal foredunes along the entire NSW coastline. The shrub layer is variable in height and cover however almost always includes a patchy cover of Long-leaved Wattle (<i>Acacia longifolia</i>) very frequently with Coast Tea Tree (<i>Leptospermum laevigatum</i>) and commonly a low cover of Coast Banksia (<i>Banksia integrifolia</i>). Other occasional shrub species include Native Currant (<i>Leucopogon parviflorus</i>) and Tree Broom Heath (<i>Monotoca elliptica</i>).</p> <p>The ground covers are also highly variable in composition however include salt tolerant grasses and forbs. Beach Spinifex (<i>Spinifex sericeus</i>), Pigface (<i>Carpobrotus glaucescens</i>), Knotted Club-rush (<i>Ficinia nodosa</i>) are occasionally recorded with hardy graminoids including Spiny Mat-rush (<i>Lomandra longifolia</i>) and rarely Blue Flax-lily (<i>Dianella caerulea</i>).</p>
3132- <i>Northern Sands Tuckeroo-Banksia Forest</i>	Soft	<p>Low to tall, mid-dense to dense, rainforest which occurs on littoral sand deposits, or sometimes sandy colluvium on headlands, north from Forster, north coast. The vegetation structure of this PCT is very variable, depending on exposure to sea spray and disturbance. The canopy almost always is comprised of Coast Banksia (<i>Banksia integrifolia</i>) and Tuckeroo (<i>Cupaniopsis anacardioides</i>), both often with high cover. Rarely, Brush Box (<i>Lophostemon confertus</i>) or eucalypts are present in the canopy and may have locally high cover, the most frequent eucalypt being Pink Bloodwood (<i>Corymbia intermedia</i>), much less frequently Flooded Gum (<i>Eucalyptus grandis</i>) or Forest Red Gum (<i>Eucalyptus tereticornis</i>). Small trees Fraser Island Apple (<i>Acronychia imperforata</i>) and Beach Bird's Eye (<i>Alectryon coriaceus</i>) are common, either in the canopy, or if the canopy is sparse, in the mid-stratum. Other trees which occur occasionally in the canopy or mid-stratum include Muttonwood (<i>Myrsine variabilis</i>), Lily Pily (<i>Acmena smithii</i>) and Three-veined Laurel (<i>Cryptocarya triplinervis</i>).</p> <p>The vine Sarsaparilla (<i>Smilax australis</i>) almost always occurs, usually in the mid-stratum or sometimes in the canopy, and is occasionally locally abundant, with a high cover. The shrub Coffee Bush (<i>Breynia oblongifolia</i>) is very frequently present in the mid-stratum and other mid-stratum species which occur commonly include vines Scrambling Lily (<i>Geitonoplesium cymosum</i>) and Snake vine (<i>Stephania japonica</i>).</p> <p>The ground cover very frequently includes Cogongrass (<i>Imperata cylindrica</i>) and commonly Spiny Mat-rush (<i>Lomandra longifolia</i>), Bracken Fern (<i>Pteridium esculentum</i>) and Basket Grass (<i>Oplismenus imbecillis</i>).</p>
3122- <i>Far North Littoral Rainforest</i>	Hard	<p>Mid-high to tall, dense rainforest, which occurs on metasediments in littoral areas at Byron Bay headland and Broken Head, within one kilometre of the coast. The canopy is dominated by three tree species, either singly or sometimes in combination. Brush Box (<i>Lophostemon confertus</i>) commonly occurs, often with the highest cover, and/or very frequently Three-veined Laurel (<i>Cryptocarya triplinervis</i>) and Tuckeroo (<i>Cupaniopsis anacardioides</i>). Other tree species which occur very frequently however rarely with high cover include Native Quince (<i>Guioa semiglauca</i>) and Coast Canthium (<i>Cyclophyllum longipetalum</i>). Tree species which are occasionally locally abundant include Grey Ebony (<i>Diospyros fasciculosa</i>) and Hard Quandong (<i>Elaeocarpus obovate</i>). The mid-stratum varies from sparse to mid-dense, commonly including Bangalow Palm (<i>Archontophoenix cunninghamiana</i>) and trees Scentless Rosewood (<i>Synoum glandulosum</i>) and Common Wilkiea (<i>Wilkiea huegeliana</i>), very frequently with vines Sarsaparilla (<i>Smilax australis</i>) and Pencil Yam (<i>Dioscorea transversa</i>). The distinctive climbing monocot Lawyer Vine (<i>Flagellaria indica</i>) is commonly present and conspicuous. Epiphytic fern Bird's Nest Fern (<i>Asplenium australasicum</i>) is very frequently present however rarely abundant. The ground layer is ferny, commonly including Gristle Fern (<i>Blechnum cartilagineum</i>) and occasionally Prickly Rasp Fern (<i>Doodia aspera</i>).</p>

Table 2 Planting list and specifications

Common name	Scientific name	Growth form	Planting specifications
Soft Protection Zone			
<i>PCT 3788- Coastal Fore dune Wattle Scrub</i>			
Long-leafed Wattle	<i>Acacia longifolia</i>	Shrub	1/4.5m ² on relatively flat foredunes
Coast Tea Tree	<i>Leptospermum laevigatum</i>	Shrub	1/9m ² on relatively flat foredunes
Coast Banksia	<i>Banksia integrifolia</i>	Tall Shrub	1/9m ² on relatively flat foredunes
Native Currant	<i>Leucopogon parviflorus</i>	Shrub	1/18m ² on relatively flat foredunes
Beach Spinifex	<i>Spinifex sericeus</i>	Grass-like	1/4.5m ²
Pigface	<i>Carpobrotus glaucescens</i>	Forb	3/m ² randomly clumped
Blue Flax-lily	<i>Dianella revoluta</i>	Forb	3/m ² randomly clumped
Cogongrass	<i>Imperata cylindrica</i>	Grass-like	3/m ² randomly clumped
Knotted Club-rush	<i>Ficinia nodosa</i>	Grass-like	1/4.5m ²
Spiny Mat-rush	<i>Lomandra longifolia</i>	Grass-like	1/4.5m ²
<i>3132- Northern Sands Tuckeroo-Banksia Forest</i>			
Coast Banksia	<i>Banksia integrifolia</i>	Tall Shrub	1/10m ²
Tuckeroo	<i>Cupaniopsis anarcardioides</i>	Tree	1/10m ²
Fraser Island Apple	<i>Acronychia imperforata</i>	Tall Shrub	1/20m ²
Beach Bird's Eye	<i>Alectryon coriaceus</i>	Tall Shrub	1/20m ²
Lily Pily	<i>Acmena smithii</i>	Tall Shrub	1/20m ²
Hard Protection Zone			
<i>PCT 3788- Coastal Fore dune Wattle Scrub</i>			
Long-leafed Wattle	<i>Acacia longifolia</i>	Shrub	1/4.5m ² on relatively flat foredunes

Common name	Scientific name	Growth form	Planting specifications
Coast Tea Tree	<i>Leptospermum laevigatum</i>	Shrub	1/9m ² on relatively flat foredunes
Coast Banksia	<i>Banksia integrifolia</i>	Tall Shrub	1/9m ² on relatively flat foredunes
Native Currant	<i>Leucopogon parviflorus</i>	Shrub	1/18m ² on relatively flat foredunes
Beach Spinifex	<i>Spinifex sericeus</i>	Grass-like	1/4.5m ²
Pigface	<i>Carpobrotus glaucescens</i>	Forb	3/m ² randomly clumped
Blue Flax-lily	<i>Dianella revoluta</i>	Forb	3/m ² randomly clumped
Knotted Club-rush	<i>Ficinia nodosa</i>	Grass-like	1/4.5m ²
Spiny Mat-rush	<i>Lomandra longifolia</i>	Grass-like	1/4.5m ²

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