

**SANDHILL'S ESTATE PRECINCT
LANDSCAPE LINKAGES PLAN**



PLUMMER & SMITH
landscape architecture / art / design
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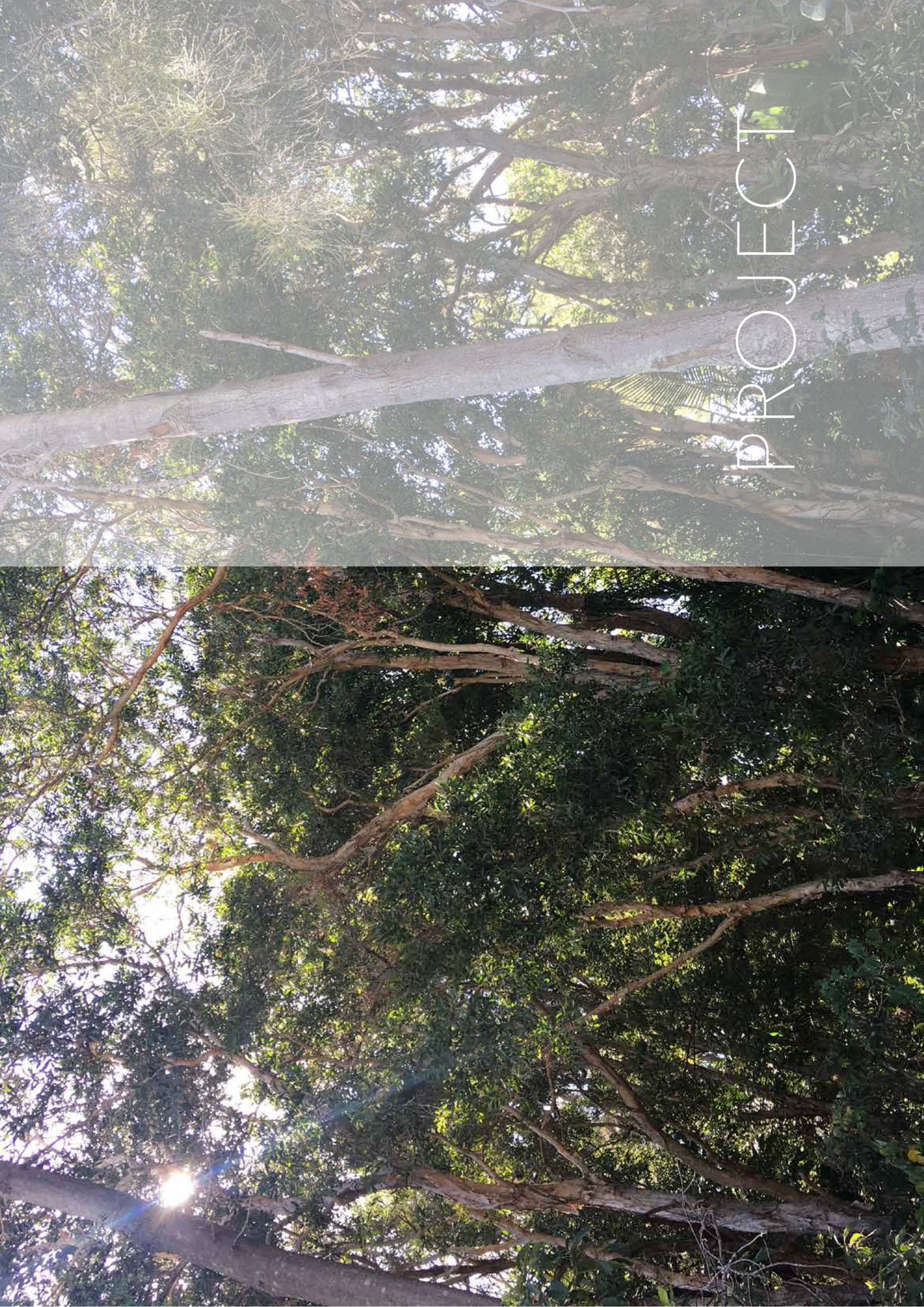
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Document Control

Date	Revision Number	Revision Details	Issued	Approved
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PROJECT

Overview

The Sandhill’s estate is the largest undeveloped parcel of land within the township of Byron Bay and falls under the ownership of Crown Lands. Areas of bushland within the estate are regarded as containing highly significant cultural and environmental values.

EXISTING PROPOSALS

(that should be read in association with this document)

The Byron Bay Town Centre Master Plan

The Byron Bay Town Centre Masterplan outlined a vision for this space of an intergenerational community hub featuring passive and active recreation, a connected pathways network, lighting and a focus on protecting and celebrating the natural environment.

Byron Bay Skate Space

In 2018, Council identified a portion of this site as its preferred location for a skate park. During 2018 a Concept Design for a proposed skate park was completed by specialist skate park design consultants- Convic. This plan included extensive consultation to ensure proposals delivered community desired outcomes.

Sandhills Estate Wetland and Rehabilitation Plan

Simultaneously, Council’s Utilities team have secured a licence to undertake environmental works in the western section of the Sandhill’s Estate and are developing concept plans for the ongoing environmental management and access improvement in this space. These plans propose a series of wetland areas to provide flood storage and improve water quality- particularly stormwater overflows to Clarkes beach. These plans are being completed by Australian Wetland Consultants.

Byron Shire Bike Plan and the Byron Shire Pedestrian Access and Mobility Plan

The reports, completed by PSA Consulting Australia, are strategic plans for the whole shire. This site, occupying an important parcel of land adjacent to the town centre contains several important circulation routes nominated in these reports.

THIS PROPOSAL

The purpose of this document is to provide an overarching Master Plan vision for the Sandhills Estate that manages and intergates these various projects and proposals into a cohesive whole. This will ensure that the various project components relevant across the site are working towards shared and complimentary outcomes for the whole site and all the stakeholders.

The key requirement of this document is to create a plan that not only links existing proposals for adjacent sites but that also links different programs- creating a complimentary blend of environment, culture, recreation and connectivity.

Despite the site’s current ‘back of house’ atmosphere it still experiences considerable use- informal passive and active recreation occurs in the open space areas south east of the Library and the existing Cowper Street linking path is a well used pedestrian and cycling connection.

It is a considerable asset for the town that an environmental and cultural space such as this exists so centrally. The sites ongoing management and use will be important for environmental and social health in the immediate and broader context.

VISION FOR SANDHILLS ESTATE

Provide a public space that combines ecological and cultural value with circulation and recreation activities

OBJECTIVES

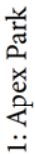
- To provide formalised access between key sites in the town centre- including the Rec Grounds, Main and Clarkes Beach, the Library, the YAC, and Tallows and the Arakwal Cultural Centre site
- The protection and enhancement of traditional owner cultural values of the area
- To encourage use of an underutilised and neglected space
- To discourage anti-social behaviour within the space
- To create a space at the centre of town that truly celebrates the natural environment
- To improve the environmental performance of the space- improved stormwater treatments and weed management
- To improve existing connections and provide new ones
- To provide a high quality recreation space connected to the town centre, environmental zones, and existing facilities such as the YAC and the Library
- To provide spaces that promote cross generational interaction and use
- To integrate recreation and circulation infrastructure
- To promote safe use of the overall site
- To allow for service access to critical infrastructure such as sewer lines etc.

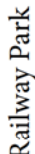
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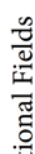
Byron Bay town centre
- 

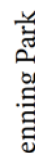
Arakwal Cultural Centre site
- 

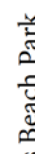
Public Open Spaces
- 

Foreshore Park
- 

1: Apex Park
- 

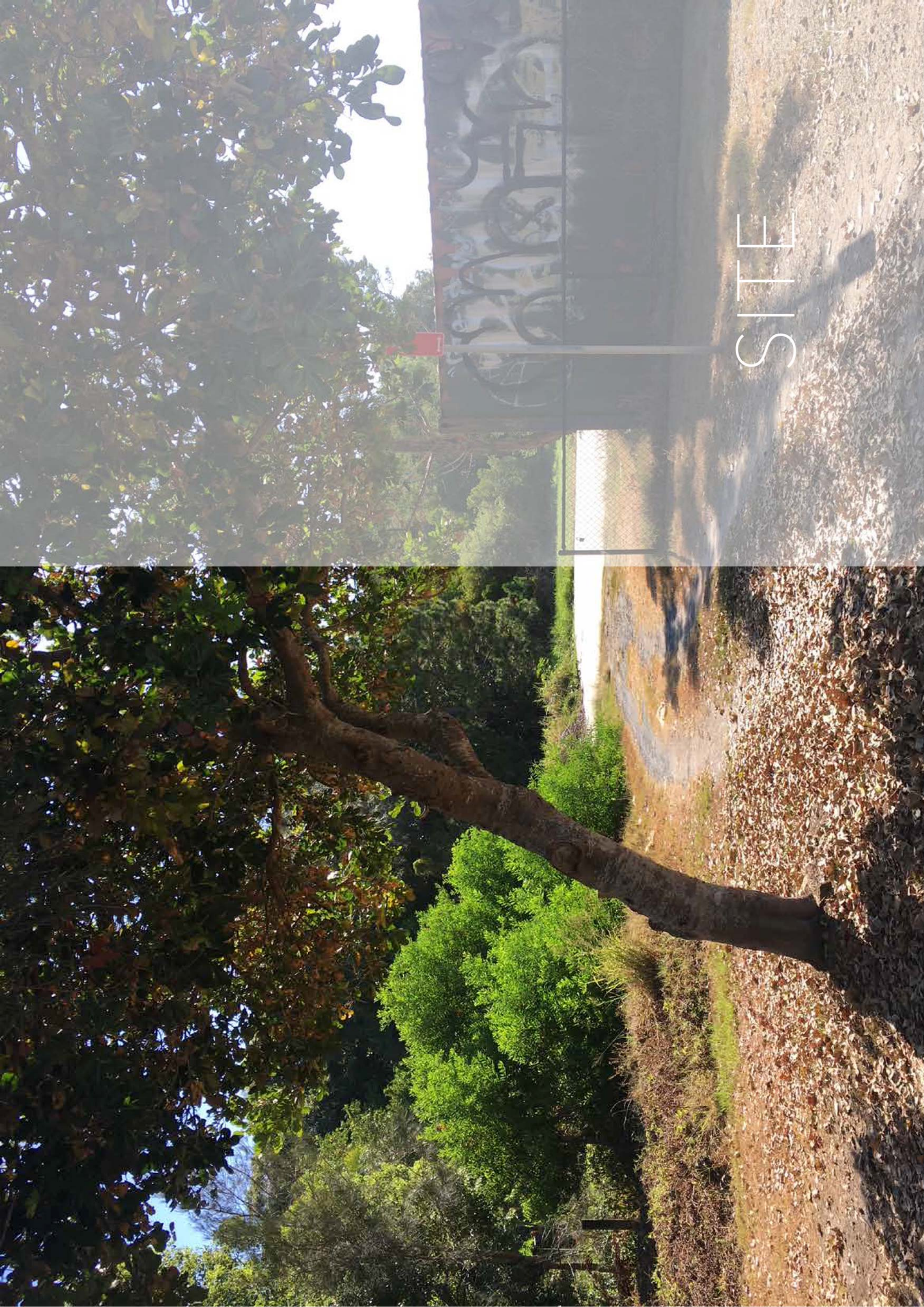
2: Railway Park
- 

3: Recreational Fields
- 

4: Denning Park
- 

5: Clarkes Beach Park

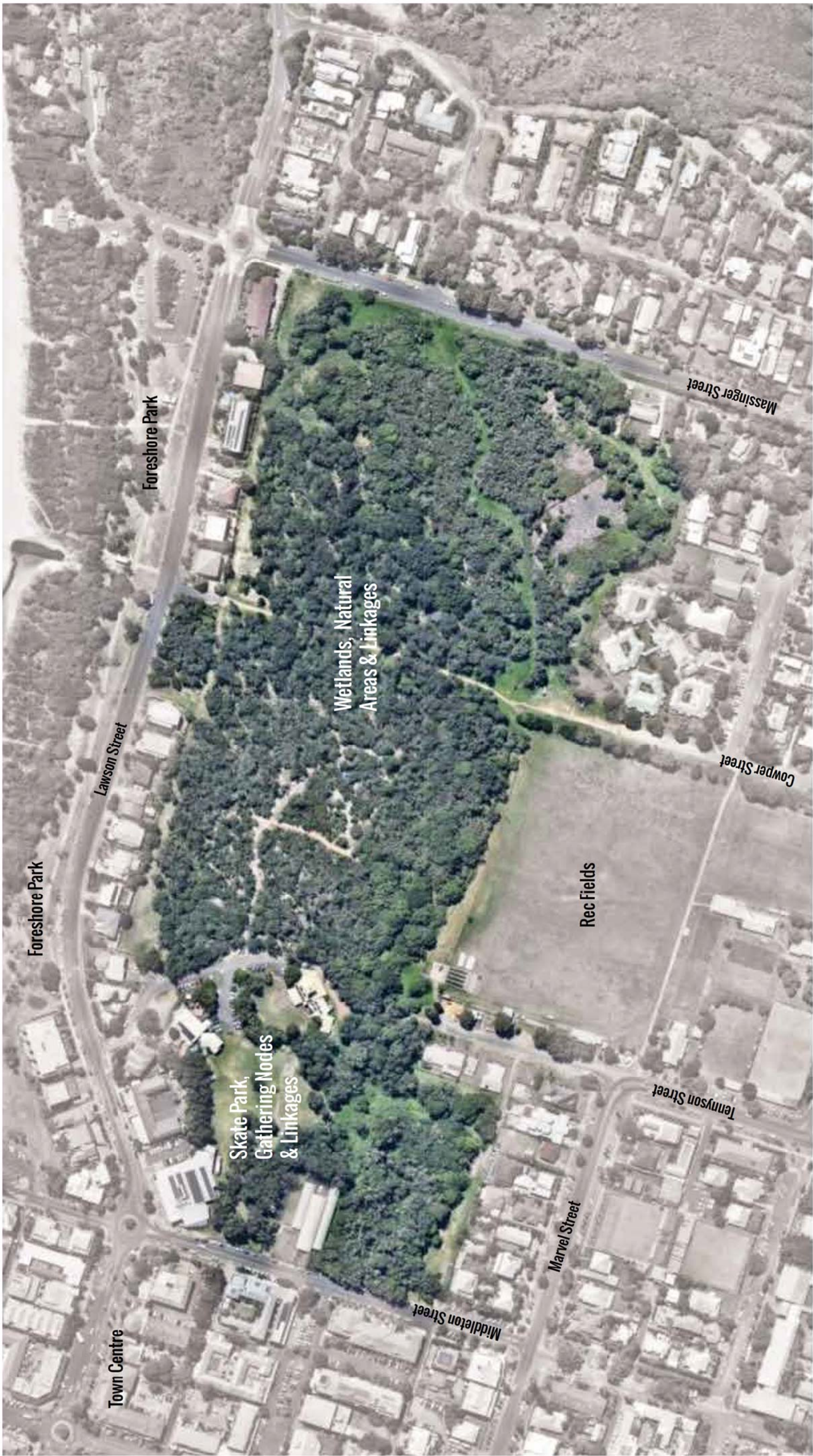




SITE

The Site- Sandhills Estate

The Sandhills Estate is a valuable natural area within the centre of Byron Bay. An asset for environmental and cultural connection.





CBD site entry- shadey and compressed between existing trees



Tennyson Street entry- limited visual connections



Entering the open space adjacent to the Child Care centre



CBD site entry moving towards open space- future skate park spaces



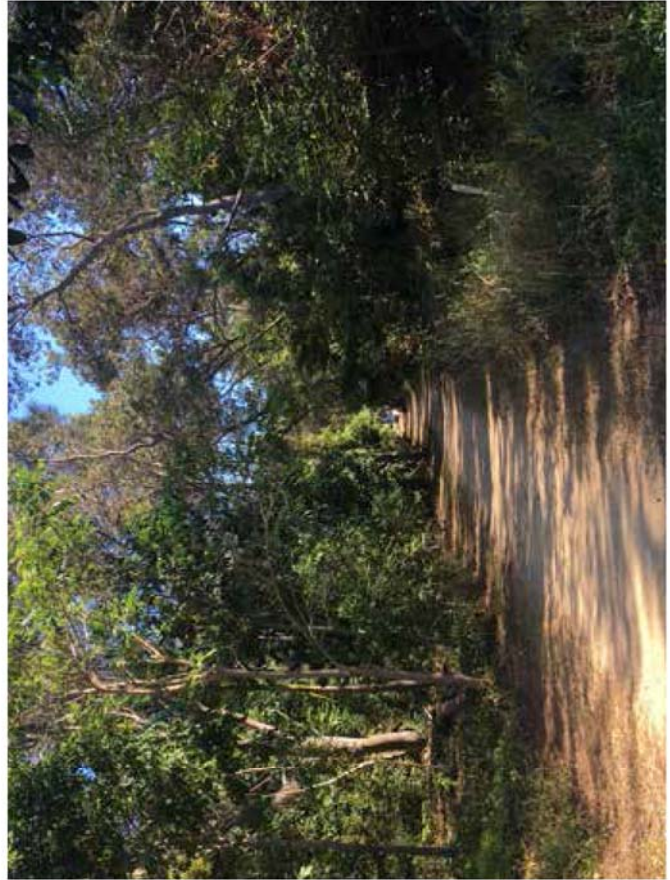
Tennyson Street entry area- opportunities for additional and formalised parking



Forested circulation zones with visual connection to Tennyson Street



Cowper Street entry point- a much used short cut to the beach



In the centre of the vegetation zone- on the Cowper Street alignment- the critical existing circulation route through the site



Existing grass circulation space along the rear of the Lawson Street residential lots



The transition point from the vegetation zone to Cowper Street and the openness of the Recreation Fields



Lawson Street end of the Cowper Street connection



Cowper Street connection (Lawson Street end)- the key point of connection to the foreshore park



Existing open grass areas with potential to improve linkages and viewlines into and out of the Sandhills Estate landscape zone



Existing condition in areas at the centre of the Sandhills landscape zone- considerable amount of weed species to be removed and managed



Existing small open space at the mid point of the Cowper Street connection- clearing of weed understory will increase openness



Existing kiosk addresses road and is isolated from the beach by the road



Existing conditions in areas at the centre of the Sandhills landscape zone- opportunities exist to increase existing openness



Alignment of connection from Cowper connection mid point to the Skate Park zone- clearing / management of weed understory required

Existing- Context Circulation

- 1

Foreshore Park Path
- 2

East / West Connection through Rec Fields
- 3

Cowper Street path



Existing Paths / Connections



Existing primary path through the site- critically the path connects continuously and directly from one side of the Sandhills Estate to the other



'Soft' path along rear of Lawson Street residential lots. A well maintained grass space- no pathway exists



Formalised path connecting Middleton Street to the existing skate bowl



Worn tracks into the zone- often not connecting to particular features and often not forming continuous connections



Landscape Zones

- 1 The Cowper Street connection- a movement corridor walled by vegetation
- 2 The open space 'easement' walled by vegetation and residential boundaries
- 3 Vegetated areas with worn tracking and transient camp sites- varying degrees of density and safety
- 4 The park entry from Middleton Street- compressed between the Library and vegetation- filtered views through tree trunks
- 5 Open space at the centre of the park- enclosed by vegetation and buildings- no real 'front'
- 6 Vehicular zone- potential for additional car parking
- 7 Drainage channel- considerable weed management issues



*Zones for Existing Proposals
Across the Site*

1

Skate Park

2

Wetland / Stormwater Treatment Works



Site Vegetation

The quality of existing vegetation on site is varied. There are significant quantities of locally native mature trees and also areas of weed infestation.

Bush Regeneration works have been undertaken and continue across a number of site areas. There remain areas of exotic weeds- including groundcover infestations and scattered under and mid storey as well as mature tree weed species.

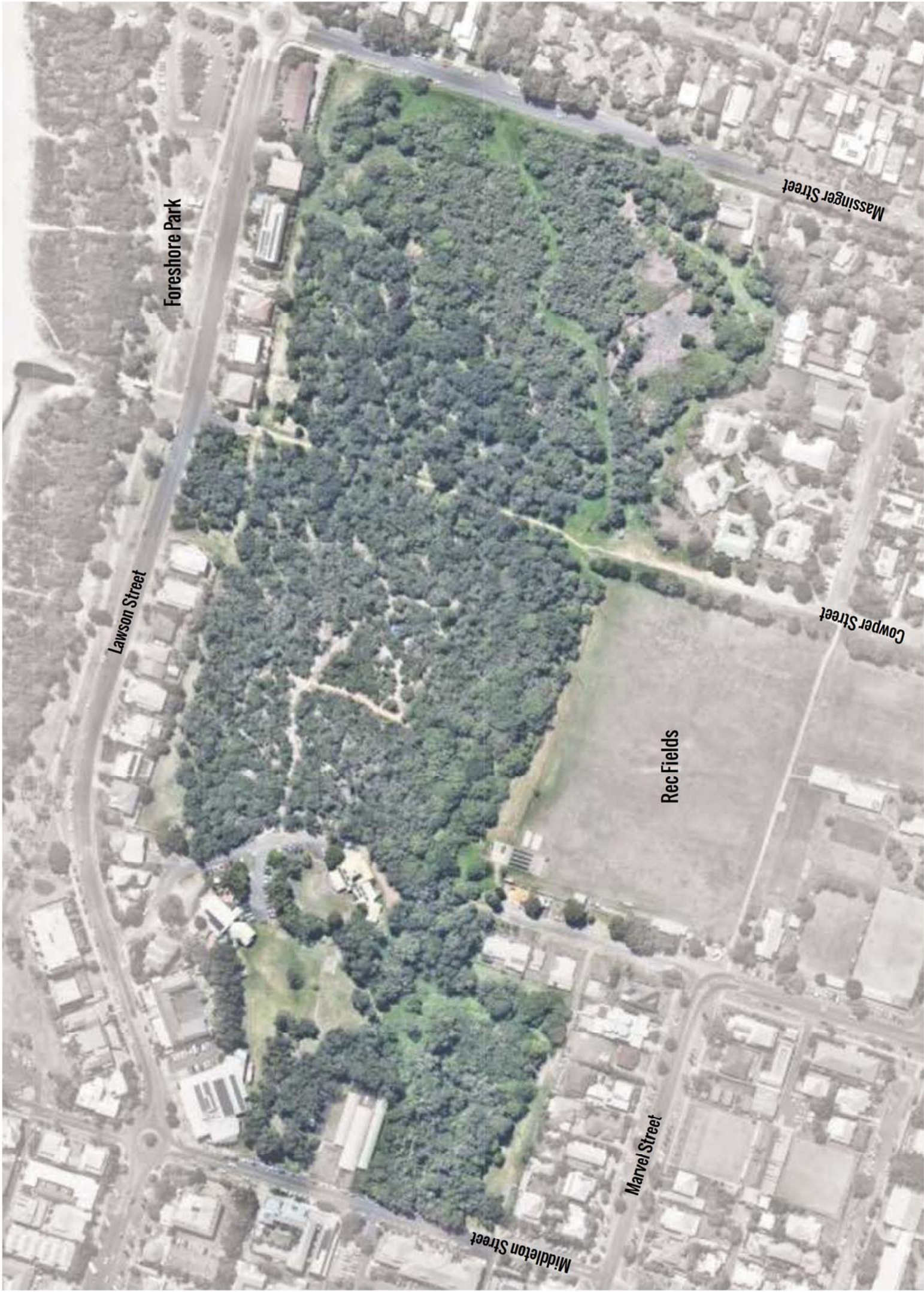
There is also a broad range of locally native species across the site- a non-exhaustive list including tree species such as:

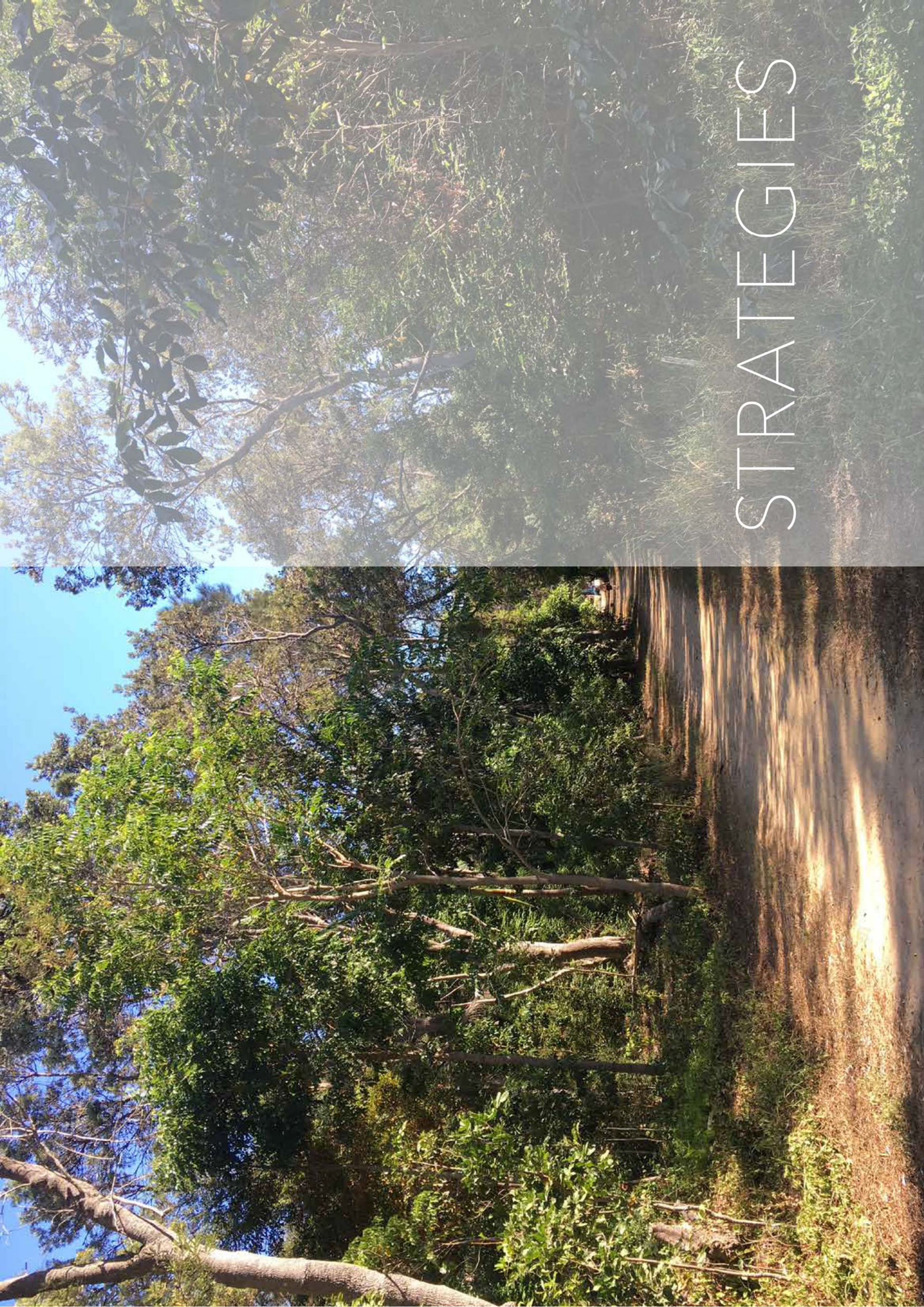
- *Melaleuca quinquenervia*
- *Banksia integrifolia*
- *Casuarina sp.*
- *Lophostemon sp.*
- *Cupaniopsis*
- *Hibiscus sp*
- *Pandanus*
- *Macaranga sp*

On-going regeneration and weed management works will be required across the site. In a number of cases this management will reduce under and mid storey density- this has the potential to positively impact sight lines and reduce CPTED concerns in some areas.

Detailed vegetation investigations should accompany any future work stages.

NOTE: A number of mature trees will require removal to achieve the stated wetland goals.





STRATEGIES

Zones / Functions



Active Recreation- skate and play



Active Recreation- sports fields



Passive Recreation- walking and picnicking



Environmental and Cultural



Linkages



Existing important north-south circulation route- continuing the north-south street grid through the site to provide convenient beach access



Primary east-west and north-south circulation route through the site



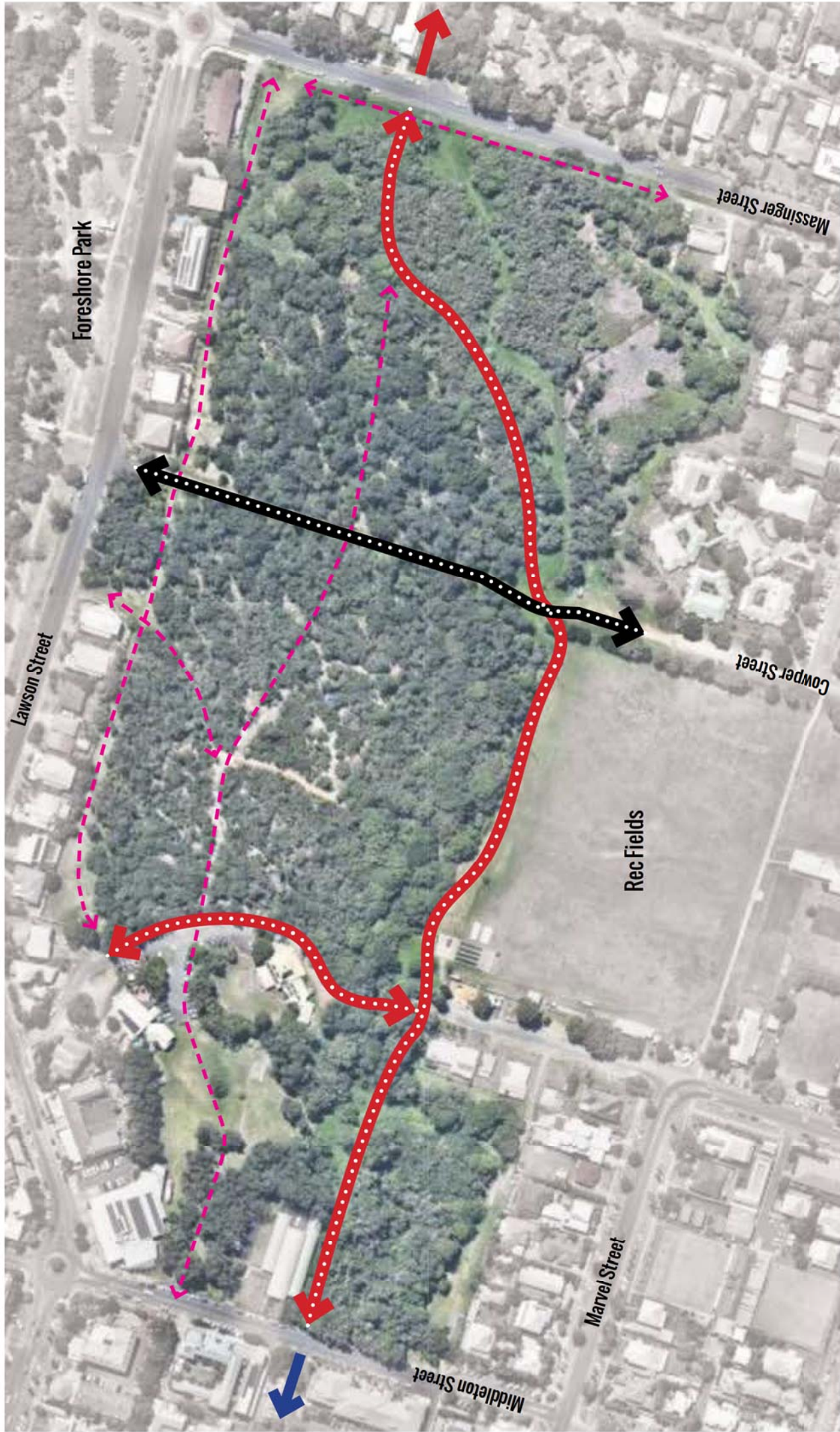
Secondary circulation routes- creating a sequence of sinuous path connections across the site. The east-west connections running along the southern and northern edges of the site are likely to be used as primary connections also as they do not require people to traverse the centre of the site



Connecting to town centre and east west circulation network

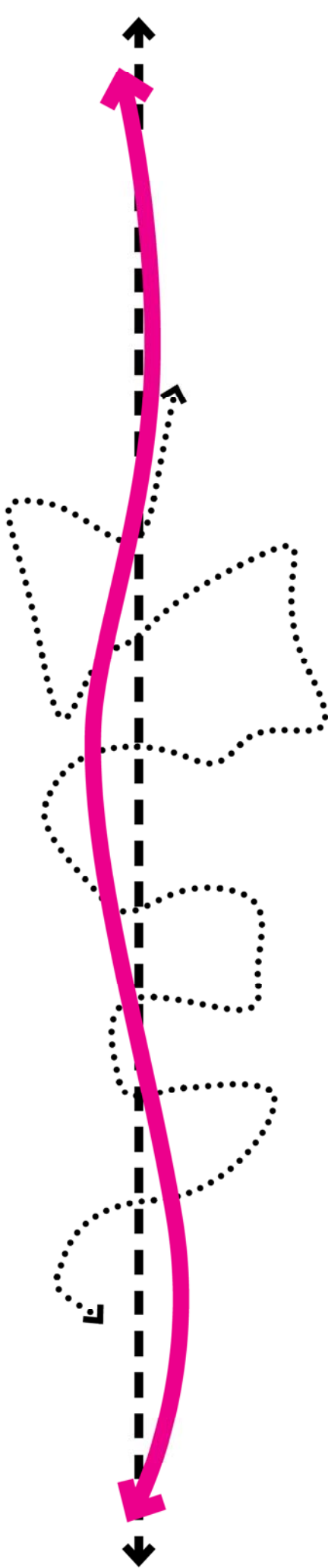


Connecting to Arakwal Cultural sites and Tallows



Circulation Flow

Finding realistic and comfortable flow paths that are neither too direct or unnecessarily tortuous

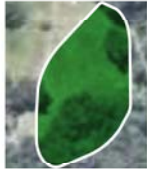


Open Space Patchwork /
Clearings

Creating a network of open spaces carved out of the density of urban and natural settings. Spaces are of graduating size and function.

The key space is the public park that provides the location for the skate park.

The purpose of the other clearings and the establishment of a patchwork of small open spaces is to provide moments of relief from the sense of enclosure that dominates site experience.



'Clearings'



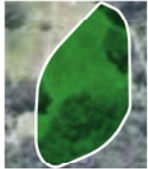
Circulation routes



Improving Site Safety

Improving site safety is an important part of any works within the site.

- Passive surveillance into and across the site will be improved in critical locations
- Crown Lands are undertaking a surveillance access track project to improve site surveillance through the heart of the vegetated zone.
- To improve CPTED principles across the site the clearing of overgrown understory areas adjacent to proposed paths will take place.
- The inclusion of CCTV surveillance through critical site areas will be investigated in future design phases



Areas where visual access is improved or capitalised on for safety improvements



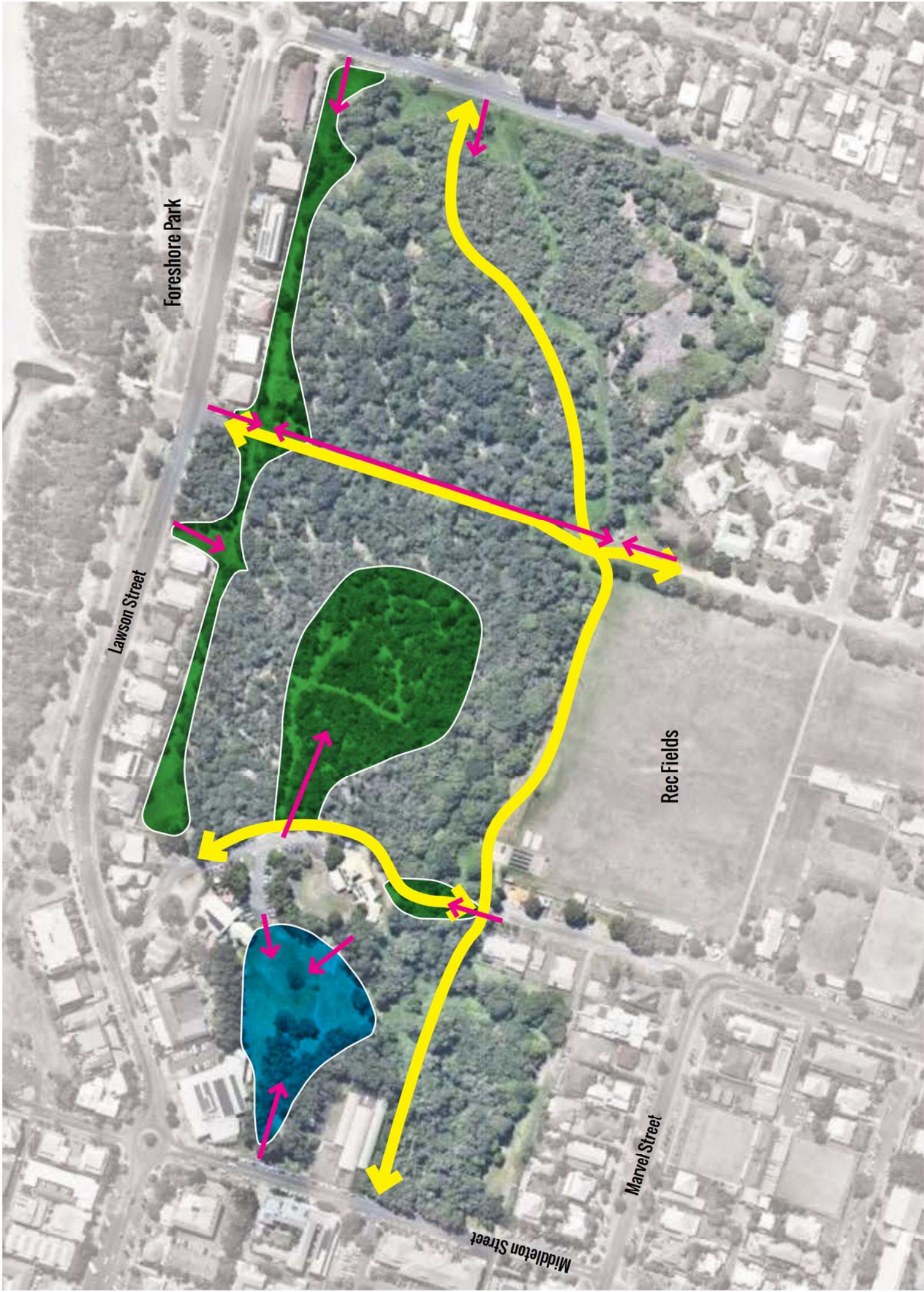
Skate Park area to have lighting improvements to public park standards



Primary paths- lighting of these paths to be investigated in future design phases



View lines into and across the site for improved passive surveillance



Access and Parking



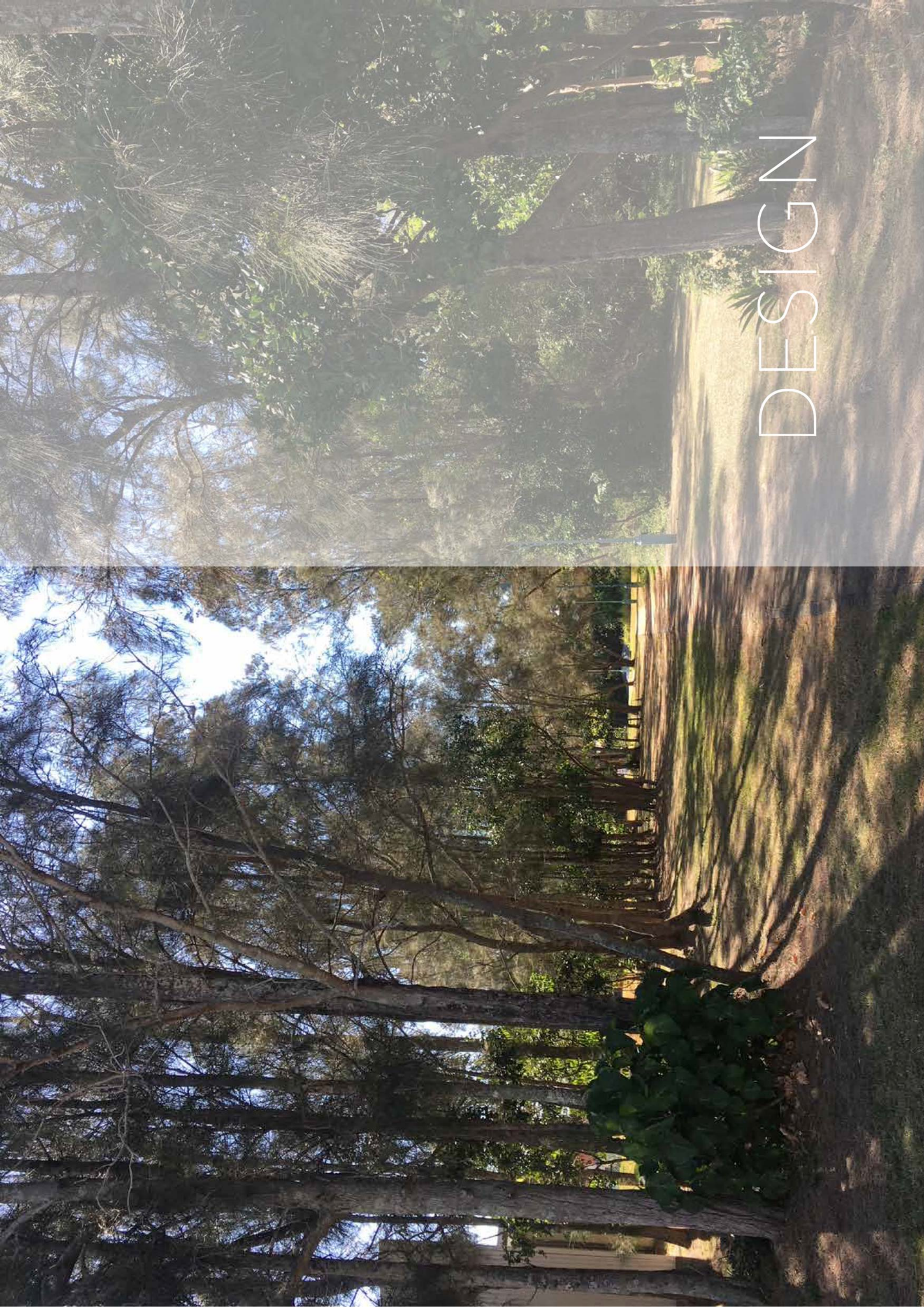
Areas proposed for car parking upgrades / additions



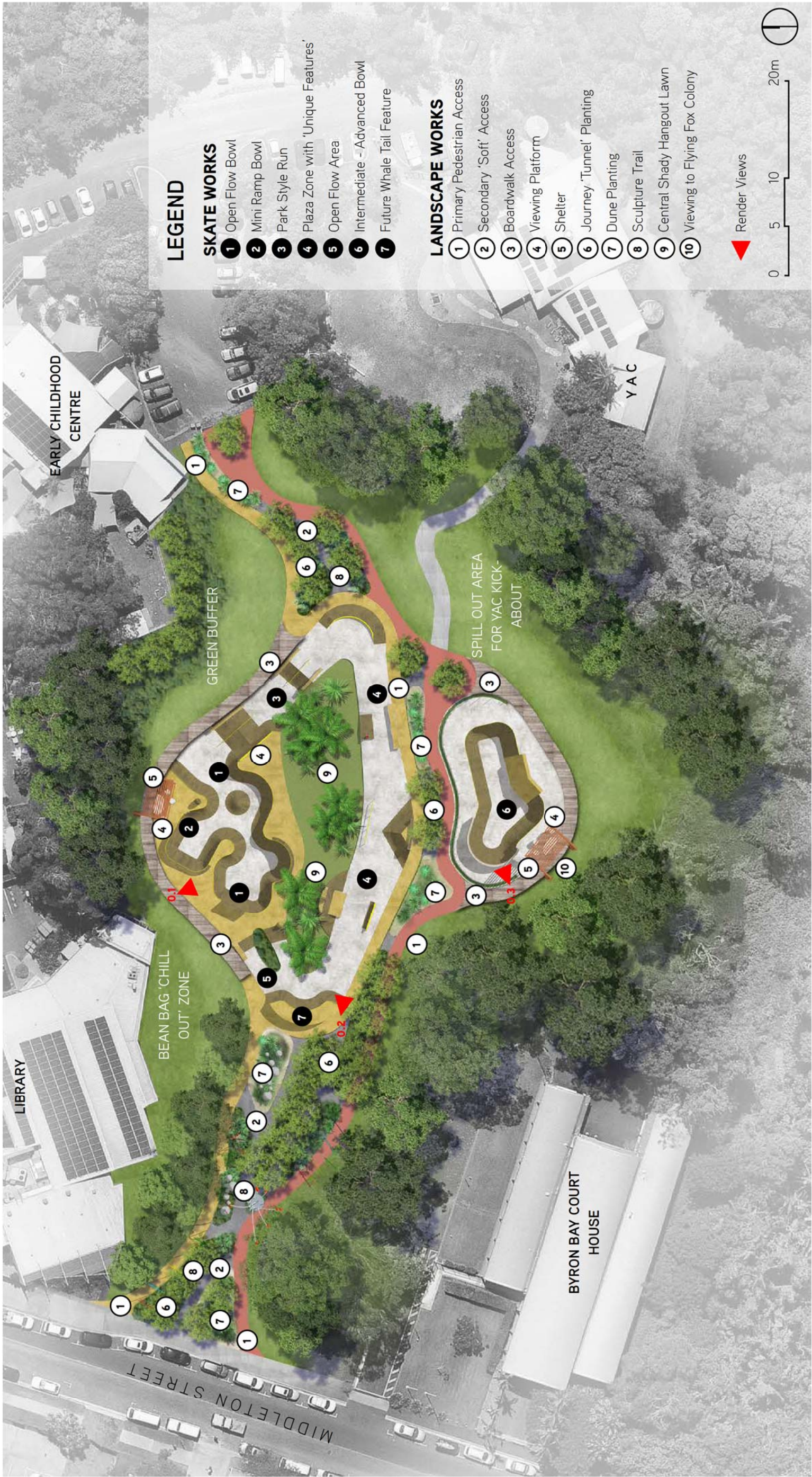
Formalised street edge parking



DESIGN



Skate Park Proposal (CONVIC)



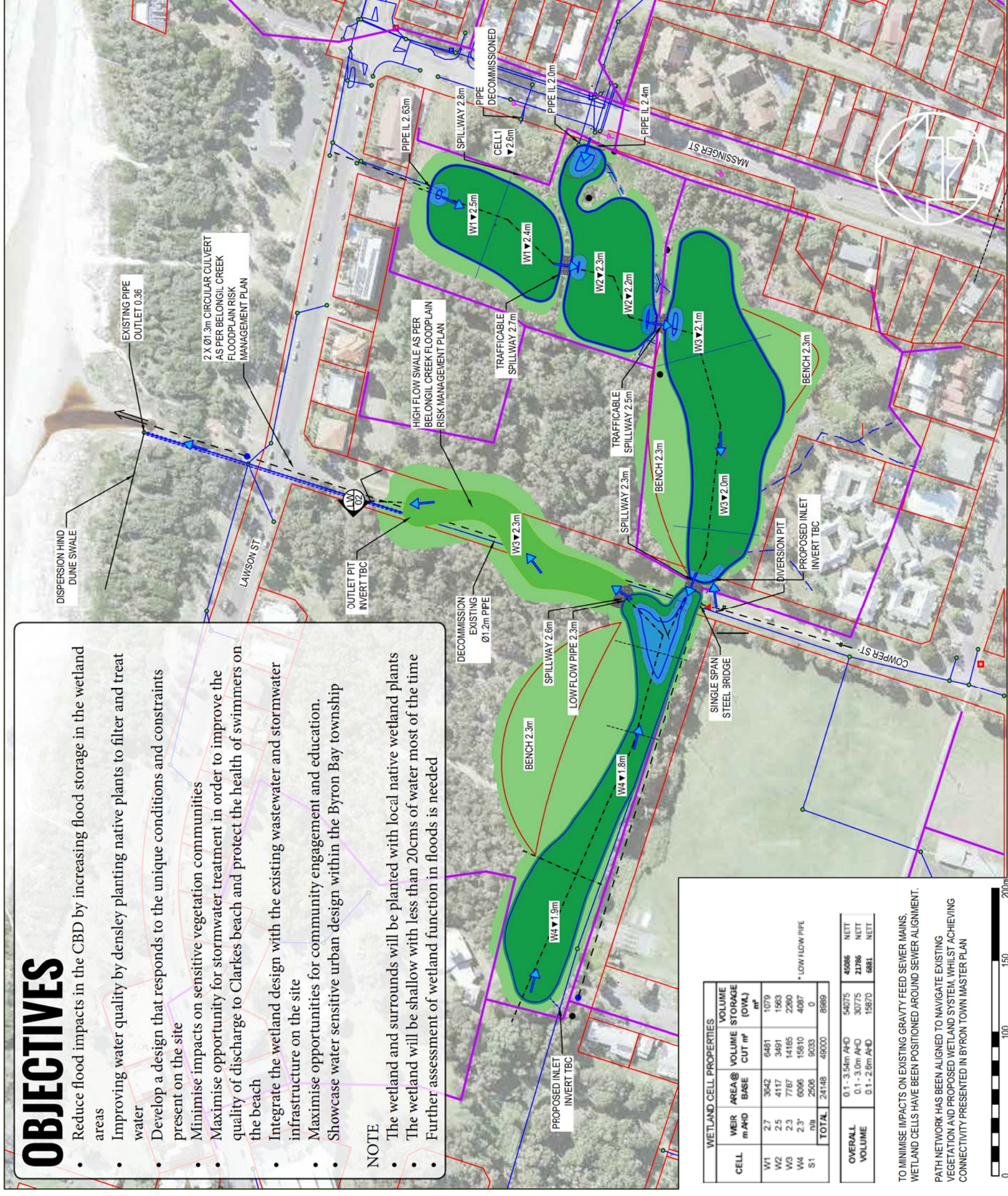
Wetland Proposal (AWC)

OBJECTIVES

- Reduce flood impacts in the CBD by increasing flood storage in the wetland areas
- Improving water quality by densley planting native plants to filter and treat water
- Develop a design that responds to the unique conditions and constraints present on the site
- Minimise impacts on sensitive vegetation communities
- Maximise opportunity for stormwater treatment in order to improve the quality of discharge to Clarkes beach and protect the health of swimmers on the beach
- Integrate the wetland design with the existing wastewater and stormwater infrastructure on the site
- Maximise opportunities for community engagement and education.
- Showcase water sensitive urban design within the Byron Bay township

NOTE

- The wetland and surrounds will be planted with local native wetland plants
- The wetland will be shallow with less than 20cms of water most of the time
- Further assessment of wetland function in floods is needed



CELL	WETLAND CELL PROPERTIES				VOLUME STORAGE (m ³)
	WEIR m AHD	AREA @ BASE	VOLUME CUT m ³	VOLUME (m ³)	
W1	2.7	3542	6481	1079	
W2	2.5	4117	3491	1563	
W3	2.3	7787	14185	2280	
W4	2.3*	6096	15810	4087	
S1	n/a	2508	9033	0	
TOTAL		21408	49000	8669	

OVERALL	0.1 - 3.54m AHD	54075	45086	NETT
VOLUME	0.1 - 3.0m AHD	30775	21786	NETT
	0.1 - 2.6m AHD	15870	6881	NETT

TO MINIMISE IMPACTS ON EXISTING GRAVITY FEED SEWER MAINS, WETLAND CELLS HAVE BEEN POSITIONED AROUND SEWER ALIGNMENT.

PATH NETWORK HAS BEEN ALIGNED TO NAVIGATE EXISTING VEGETATION AND PROPOSED WETLAND SYSTEM, WHILST ACHIEVING CONNECTIVITY PRESENTED IN BYRON TOWN MASTER PLAN



LEGEND  WETLAND (DEPTH 0.0 - 0.3m)  OPEN WATER ZONE (DEPTH 1.0 - 2.0m)  EPHEMERAL CREEK  EXTENT OF WETLAND DURING Q100 FLOOD EVENT  PROPOSED WALKING / ACCESS TRACK  EXISTING SEWER ALIGNMENT  EXISTING SEWER ALIGNMENT  SW PIPE HEADWALL  PROPOSED ROCK SPILLWAY  FLOW DIRECTION  EXISTING TRUNK DRAINAGE  EXISTING STORMWATER PIT  CADASTRAL BOUNDARIES  PROPOSED STORMWATER PIPE		PROJECT SANDHILLS WETLAND CONCEPT DESIGN AND WATERWAY REHABILITATION PLAN																		
CLIENT BYRON SHIRE COUNCIL		DRAWING GENERAL ARRANGEMENT PLAN																		
<table border="1"> <thead> <tr> <th>REV.</th> <th>ISSUE / AMENDMENTS</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>REHABILITATION PLAN</td> <td>17.12.2018</td> </tr> <tr> <td>B</td> <td>REHABILITATION PLAN</td> <td>14.02.2019</td> </tr> <tr> <td>C</td> <td>REHABILITATION PLAN</td> <td>12.08.2019</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>		REV.	ISSUE / AMENDMENTS	DATE	A	REHABILITATION PLAN	17.12.2018	B	REHABILITATION PLAN	14.02.2019	C	REHABILITATION PLAN	12.08.2019							AWC Australian Wetlands Consulting Pty Ltd 8 George St Bangalow NSW 2479 P (02) 6687 1550 F (02) 6680 9406 www.awconsult.com.au
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C	REHABILITATION PLAN	12.08.2019																		
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Site Master Plan



1. Skate Park entry node	through this area)				
2. Skate Park- refer to detail plan	8. Vegetated shallow wetland areas allowing for flood storage and water filtration (water depth: 0.0-0.3 metres)- (bush regeneration works are on-going through this area)	11. New concrete path along the existing grass easement south of the Lawson Street residences	management and to improve visual aesthetics in areas of high visual access (water depth: 1-2 metres)- (bush regeneration works are on-going through this area)	18. Boardwalk through areas of flood storage overflow (see 'in flood' plan)	
3. Existing YAC	9. Surveillance access track (Note: this is a Crown Lands project)	12. Secondary (informal) access paths- gravel	16. Cowper Street circulation entry space- nodal point of multiple paths	19. Primary east-west circulation path through site- connecting to Arakwal cultural site	
4. Tennyson Street circulation path	10. Proposed central clearing zone improving safety and surveillance in the centre of the site	13. Existing vegetation areas- weed management-on-going	17. Cowper Street alignment circulation path, existing alignment alters to allow for overland flow management swale	20. YAC expansion zone- proposed expansion strengthens the purposes of this zone as a youth activity space. Expansion also provides important passive surveillance over the skate park zone	
5. New car parking on Tennyson Street and bike path		14. Stormwater overflow swale- filtration of run-off to improve water quality being discharged to the beach		21. Additional potential informal connections	
6. Additional formalised car parking and associated path		15. Permanent water pools for water flow			
7. Primary east-west circulation path through site (bush regeneration works are on-going					

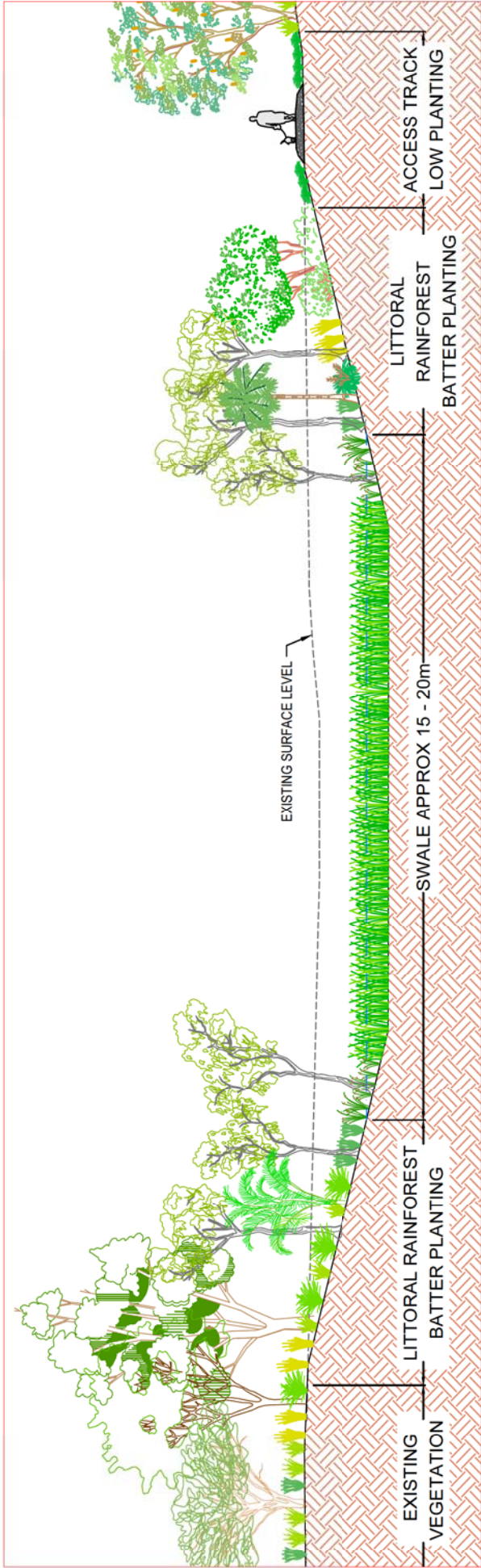
Site Master Plan (in flood / wet)



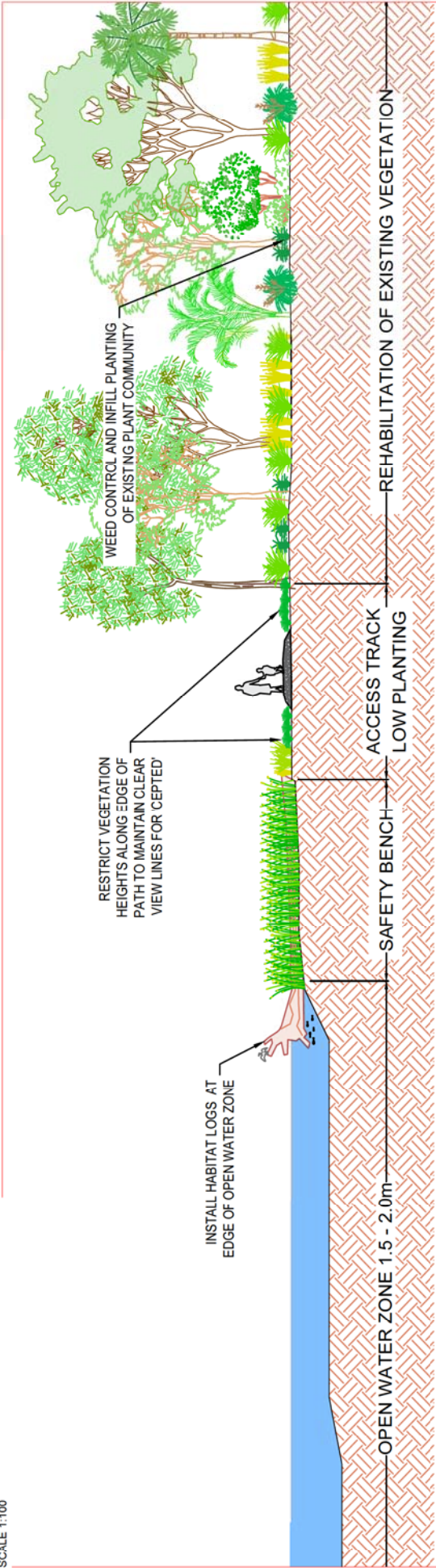
- 1. Temporal wetland areas full to improve flood storage
- 2. Flood overflow areas allow for additional flood storage
- 3. Stormwater overflow swale- filtration of run-off to improve water quality being discharged to the beach
- 4. Permanent water pools for water flow management and to improve visual aesthetics in areas of high visual access
- 5. Boardwalk areas of path through areas of flood storage overflow



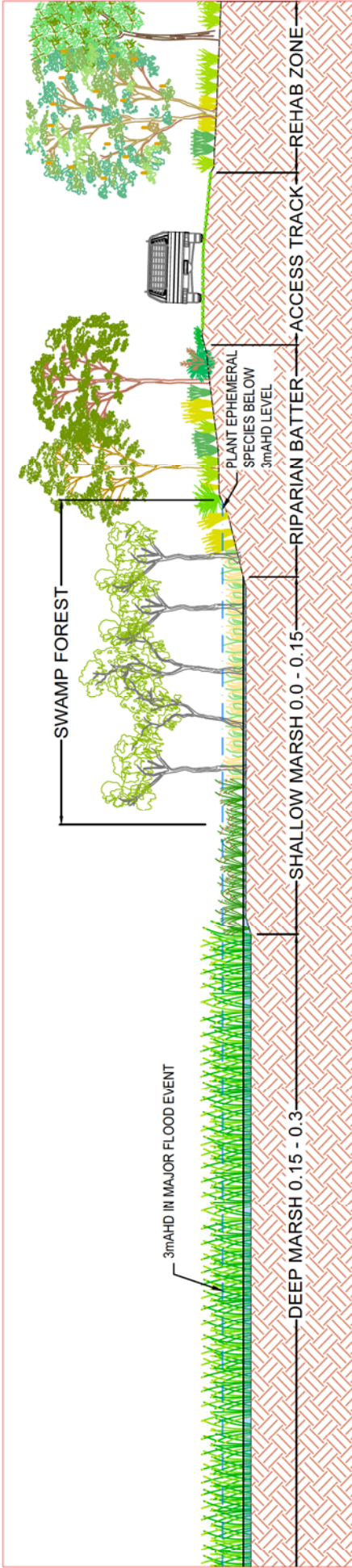
Sections- Wetlands Zone



VEGETATED SWALE - TYPICAL CROSS SECTION
SCALE 1:100



OPEN WATER EDGE - TYPICAL CROSS SECTION
SCALE 1:100



WETLAND BATTER INTERFACE - TYPICAL CROSS SECTION
SCALE 1:100

PROJECT

SANDHILLS WETLAND CONCEPT DESIGN
AND WATERWAY REHABILITATION PLAN

DRAWING

TYPICAL PLANTING SECTIONS

CLIENT

BYRON SHIRE COUNCIL

REV.	ISSUE / AMENDMENTS	DATE
A	50% CONCEPT DESIGN	12.11.2018
A	90% CONCEPT DESIGN	07.12.2018



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	1-181030_06

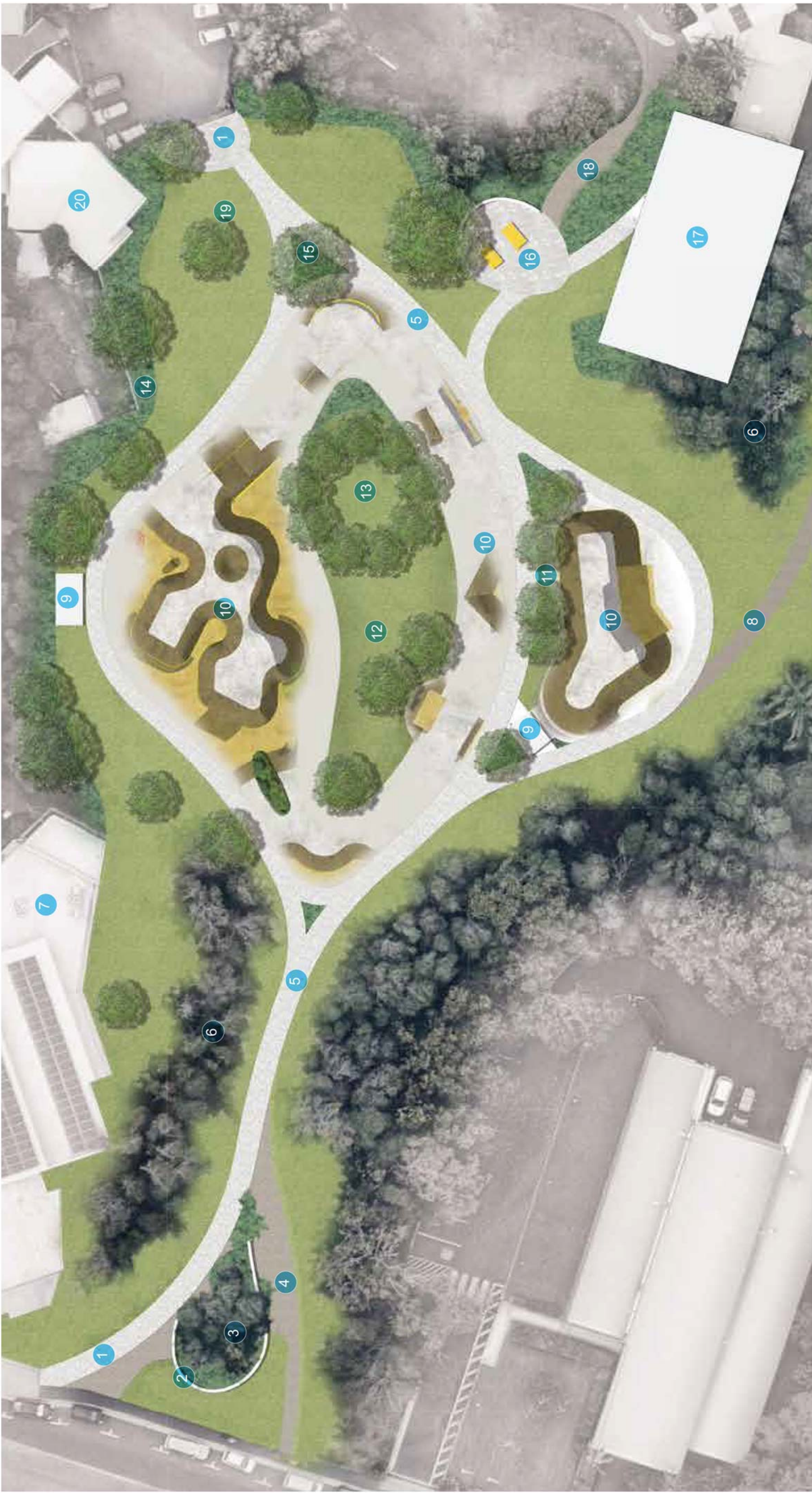
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	SS/RBS	1-181030.dwg

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Skate Park Zone



- | | | |
|---|---|--|
| 1. Skate Park entry zone- path, signage and informal gathering | 7. Byron Bay Library | 17. YAC proposed expansion zone- proposed expansion strengthens the purposes of this zone as a youth activity space. Expansion also provides important passive surveillance over the skate park zone |
| 2. Seating and signage wall | 8. Informal circulation path (compressed gravel) | 18. Planting and groundplane treatments connecting to existing YAC outdoor features |
| 3. Existing vegetation grouping to be retained | 9. Shelter including seating and tables | 19. Open space areas with informal shade |
| 4. Secondary connector path- compressed gravel (including planting) | 10. Skate Park zones- refer to Convic plans | 20. Existing childcare |
| 5. Primary circulation path through the park | 11. Turf and planting mounding areas separating skate areas and path | |
| 6. Existing vegetation areas to be retained | 12. Central turf and informal shade tree open space | |
| | 13. Small open space contained by earthworks mounding and shade tree circle- shaded 'chill-out' space | |
| | 14. Planting- buffer planting to the existing childcare boundary | |
| | 15. Planting areas, including feature tree, to circulation path 'islands' | |
| | 16. Quiet gathering space as a transitional space between the skate park and the YAC outdoor areas- natural shade, seating, and table tennis tables | |

0 1 2 3



Perspectives

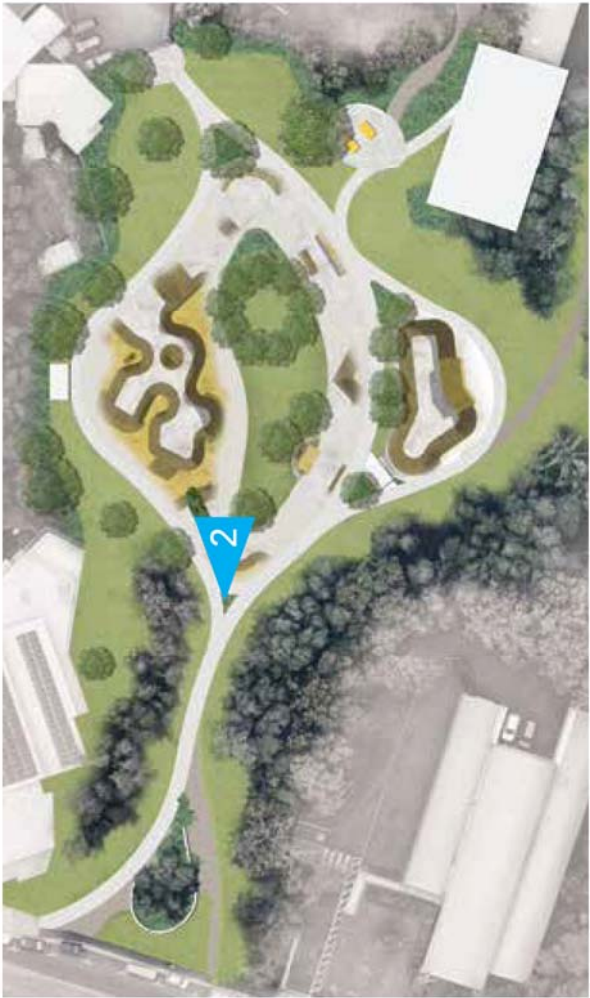


Entry point to the Skate Park from Middleton Street. New circulation paths through stands of existing trees. A seating wall with potential for signage defines and protects an area of existing vegetation. New lighting proposed along path





Circulation paths and informal parkland settings at the edge of the formalised skating areas



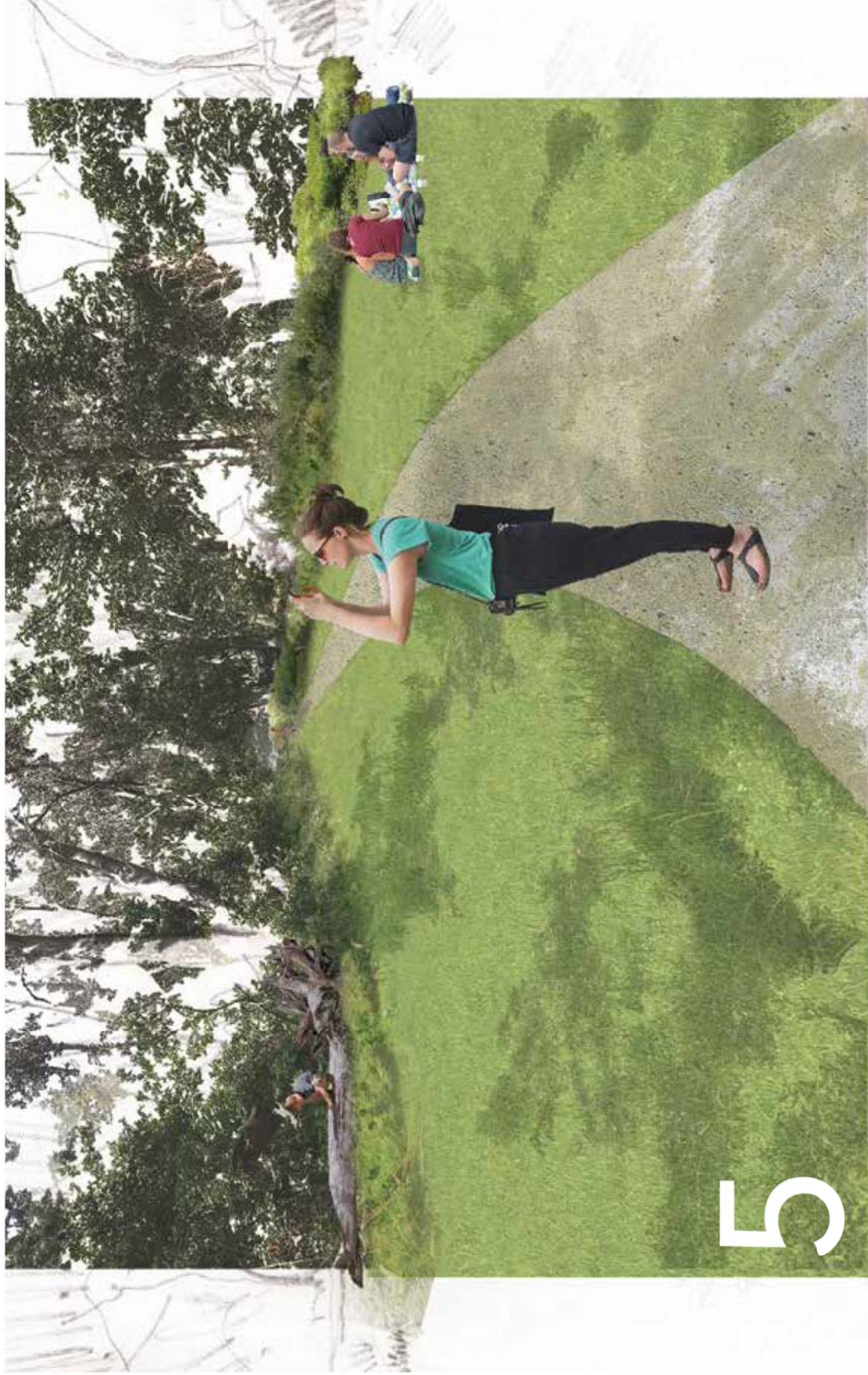


A gathering space that operates a transition space between the YAC and the primary skate park areas- increasing the recreation activities available and broadening the appeal and use of the overall park space

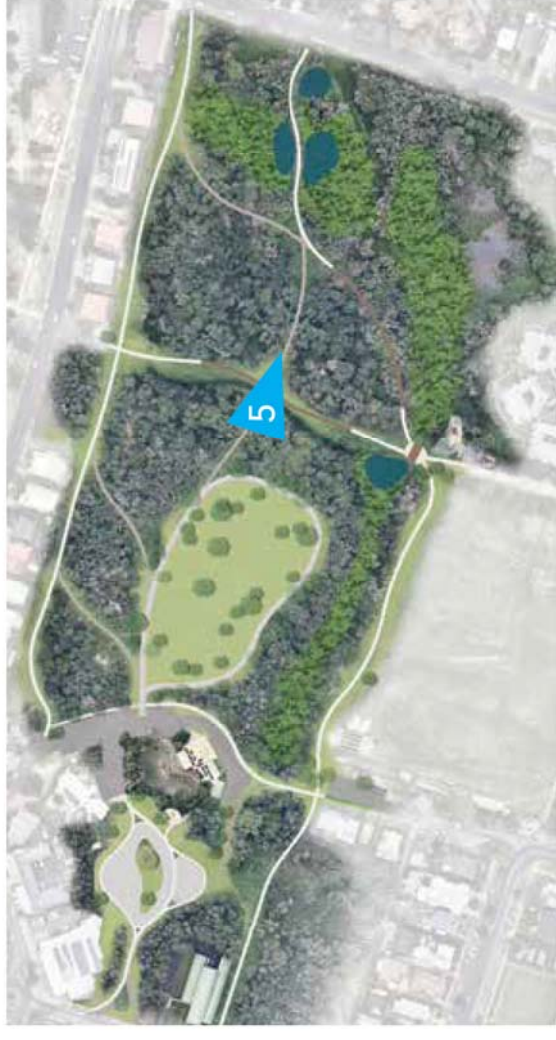




A central clearing zone within the environmental areas of the Sandhills Estate. Area and access track allow for surveillance of the space and informal open areas of passive recreation use. NOTE: the extent of openness in this area will be better known after the Crown Lands project completion

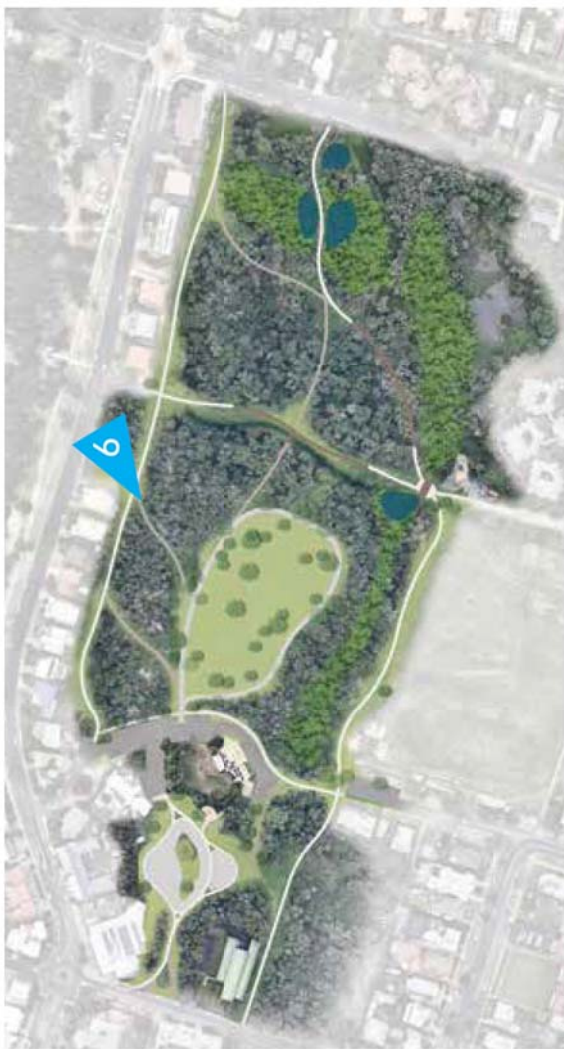


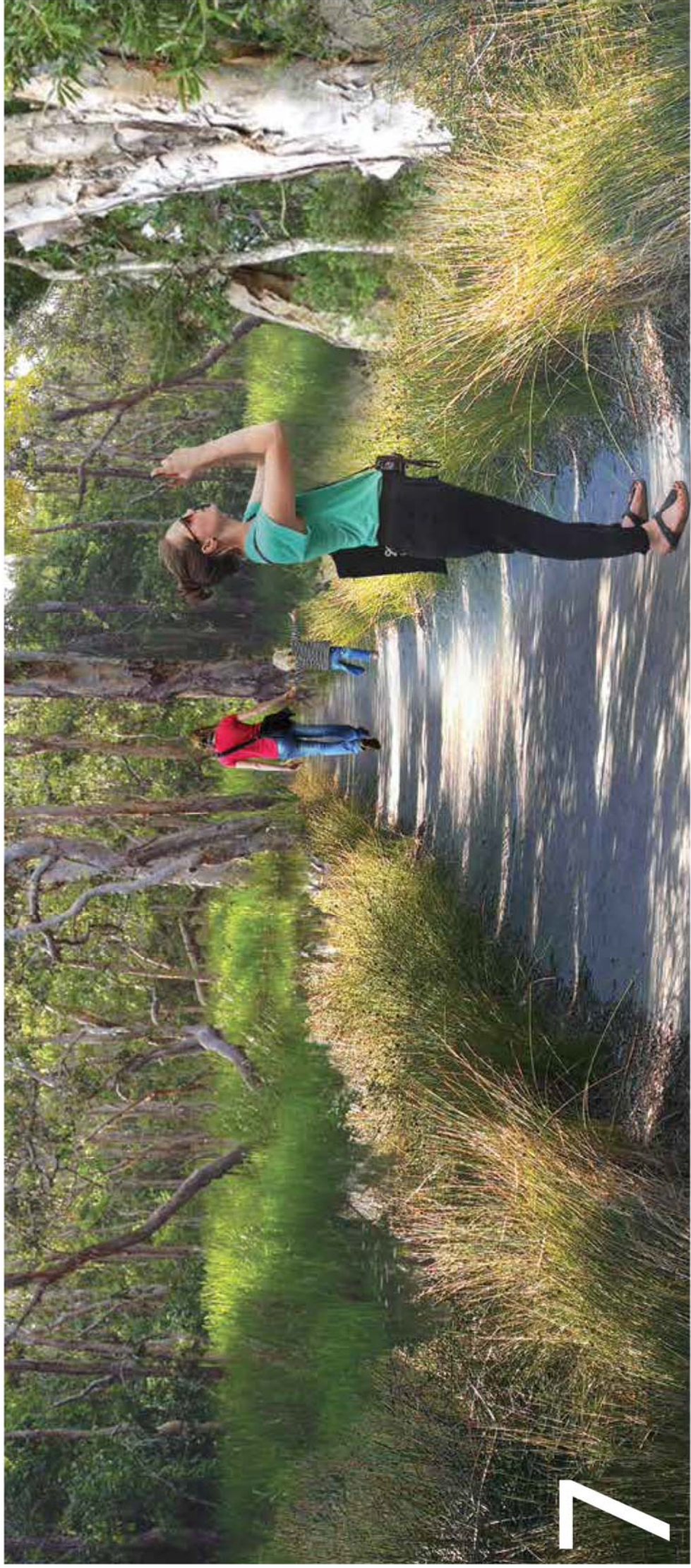
Access paths across the site allow for circulation and service access. Where-ever possible vegetation should be kept low and open adjacent to paths





Access paths across the site allow for circulation and service access. Management of understory weeds and grass growth will assist in maintaining comfortable circulation paths



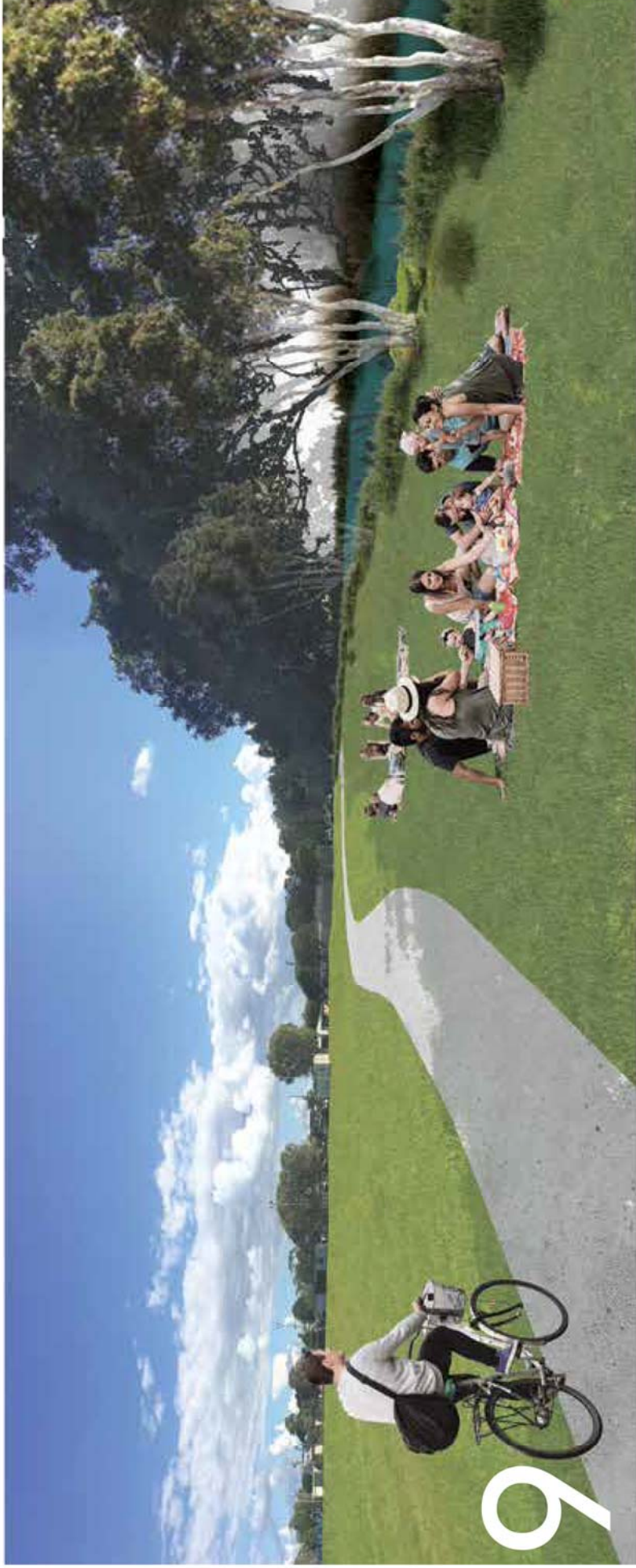
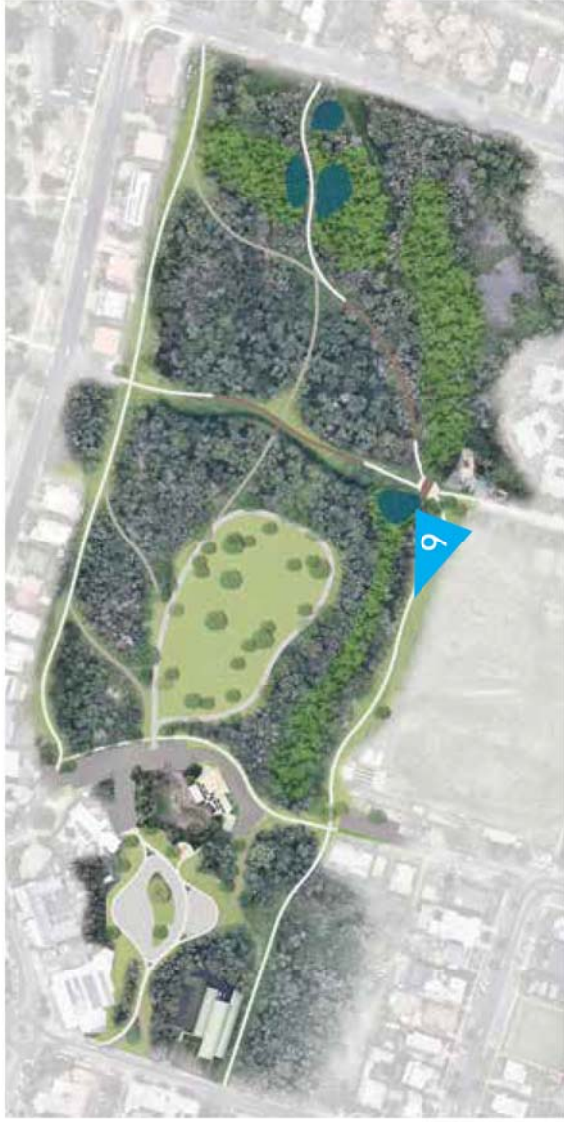


Paths through wetland zones can provide a natural trail like experience. Bush tucker plantings and interpretive signage could promote environmental and cultural awareness across the site

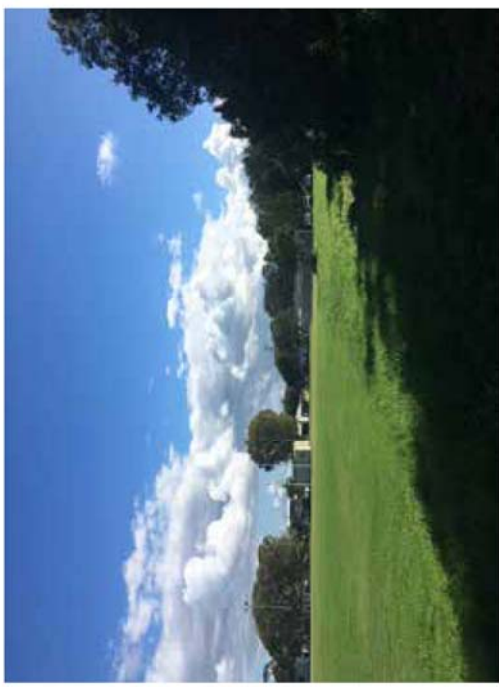


Paths and nodal point at the southern end of the Cowper Street path- a transition space between the environmental areas of the Sandhills Estate and the adjacent street network and sports fields



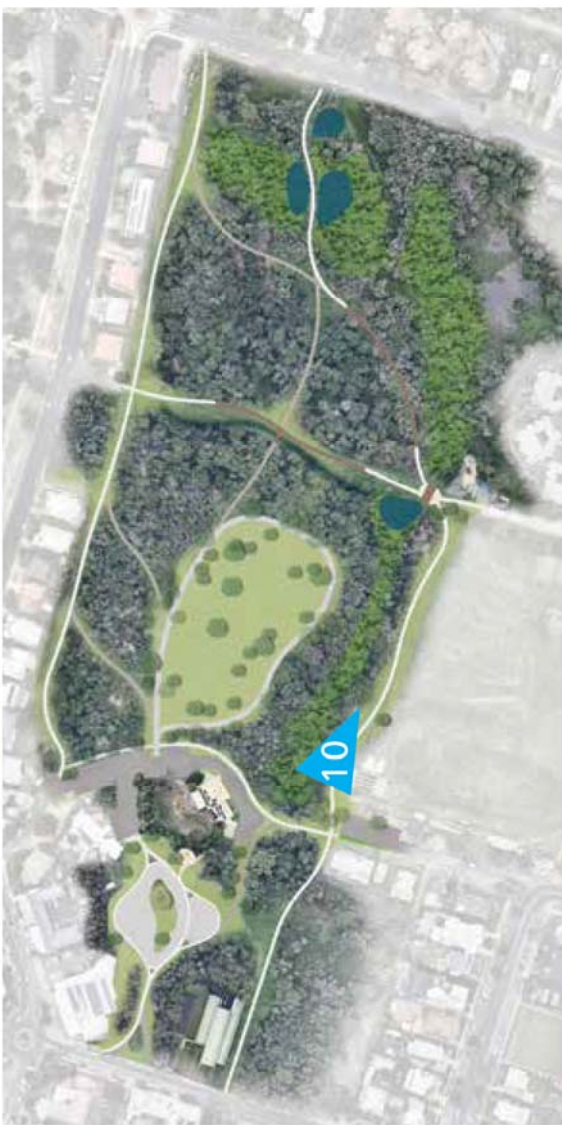


The primary east-west circulation path skirting the edges of both the Sandhills Estate environmental areas and the sports fields. Potential to promote informal parkland uses adjacent to the sporting fields zone. *NOTE: a potential option includes the establishment of a large berm / earth mound between the circulation path and the environmental zones to reduce wetland encroachment onto the sporting zone and to also provide a landscaped sports viewing and picnicing terrace.*





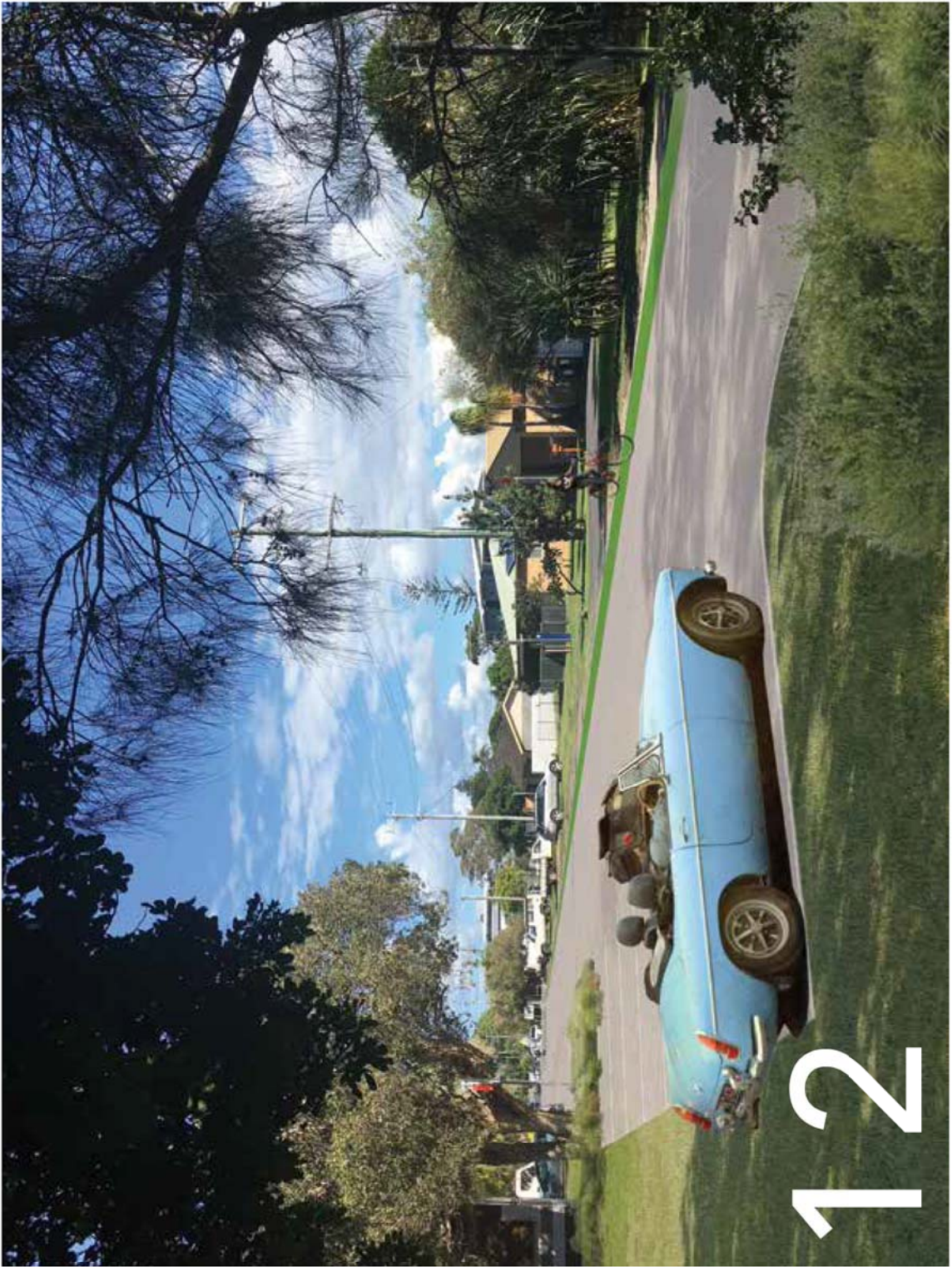
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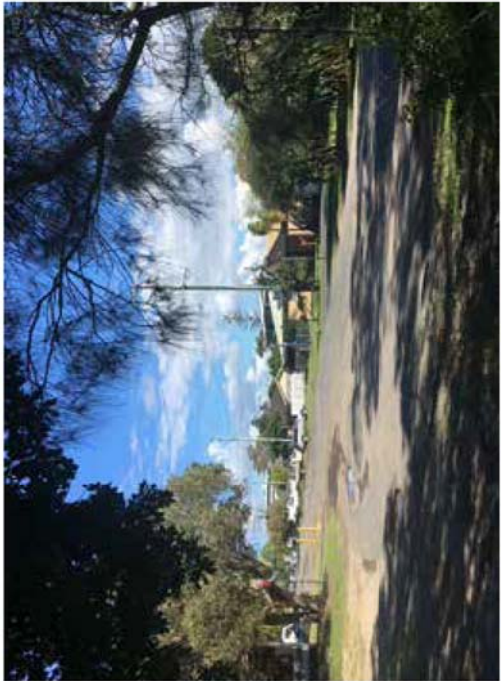


The Tennyson Street entry point to the site- formalising circulation networks through the street network and extending them into and through the site. Formalised parking provides for accessibility to the park perimeter





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6 Cultural Landscape

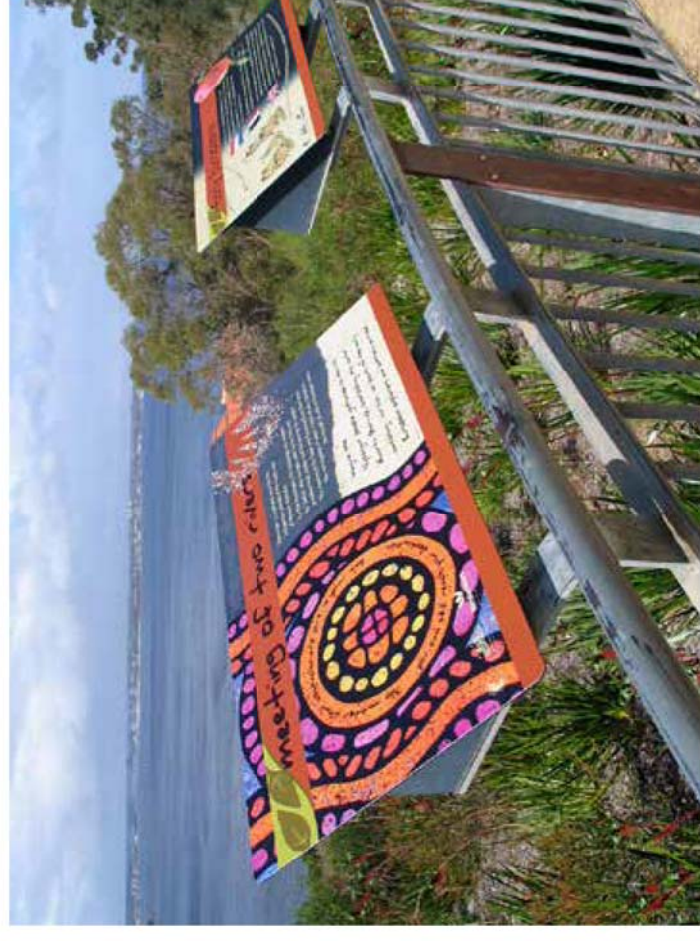
Cultural Landscape- potential for environmental and cultural representation and education

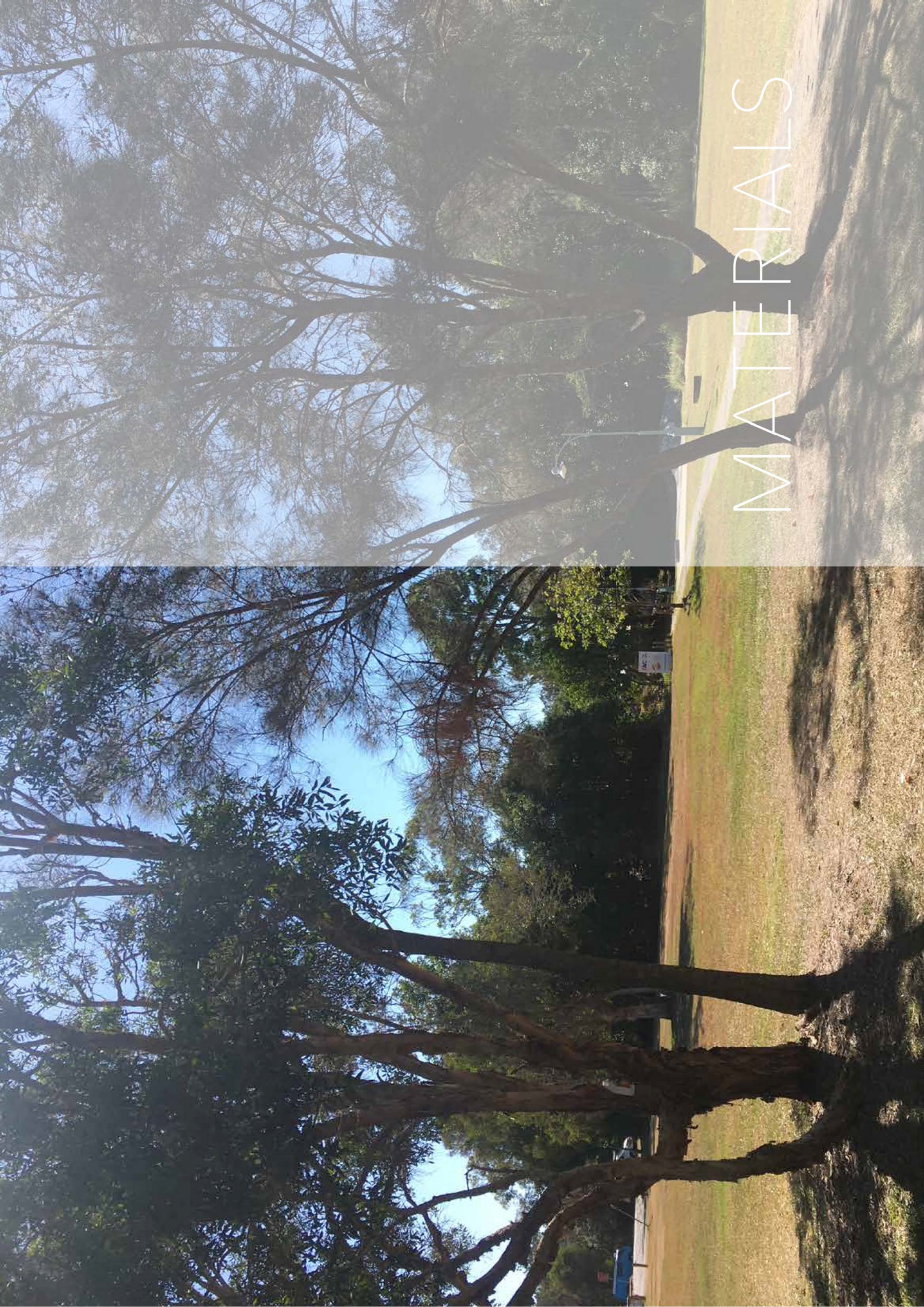
During consultation across the various components of this project the potential of cultural and environmental interpretation has been raised.

Where-ever possible planting as part of rehabilitation, wetland, and parkland works should contain examples of local bush tucker species.

Interpretive signage, along with other potential treatments, should be investigated during any future detailed design phases of the various project components likely to occur across the site. There are opportunities for cultural and environmental education across the site. This would provide valuable links to nearby Arakwal Cultural sites and offer an informative cultural and environmental experience adjacent to the heart of the town centre.

As well as the bush tucker and WSUD educational opportunities there is also the potential for the telling of appropriate cultural stories, or the inclusion of relevant local language- both with the necessary involvement and approvals of Arakwal representatives.





MATERIALS

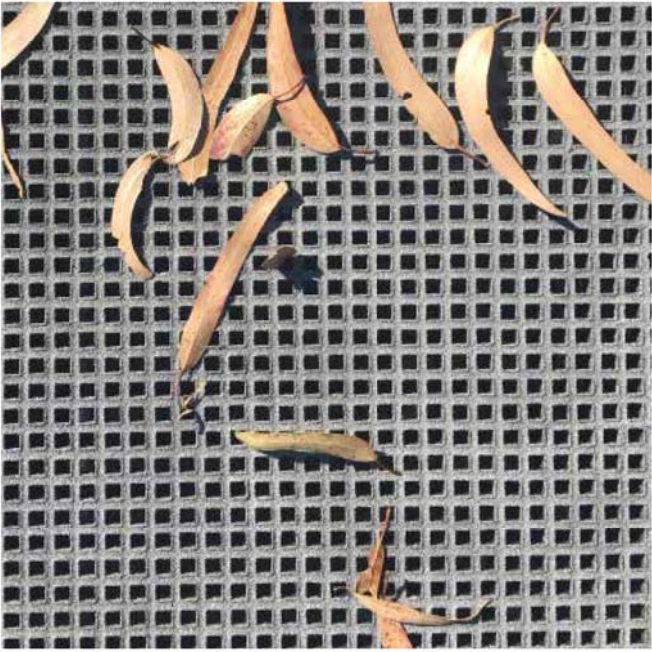
Material and Design References



Example of timber boardwalk



Custom timber elements- utilizing BSC recycled bridge timbers where appropriate



Decking mesh- potential boardwalk material.
Example: Wagners 'Mini-Mesh'



Example of a concrete seating wall - hard waering and simple finishes



Gravel paths- vegetation with open understorey



Raised boardwalk paths allow overland flow and vegetation growth



Seats set back from the path flow

Wayfinding / Environmental Signage

The scale of the site means that wayfinding will be an important inclusion in any detailed design phases of potential future projects. As per the site analysis and design strategy sections above there are a number of existing and proposed circulation links that interact with this site. Due to scale and site type visual connections across the site are at best difficult and in most cases impossible. This places considerable importance on the location and content of future wayfinding signage and elements.

 Indicative locations for Wayfinding signage





Example pole mounted light



Example of outdoor table tennis



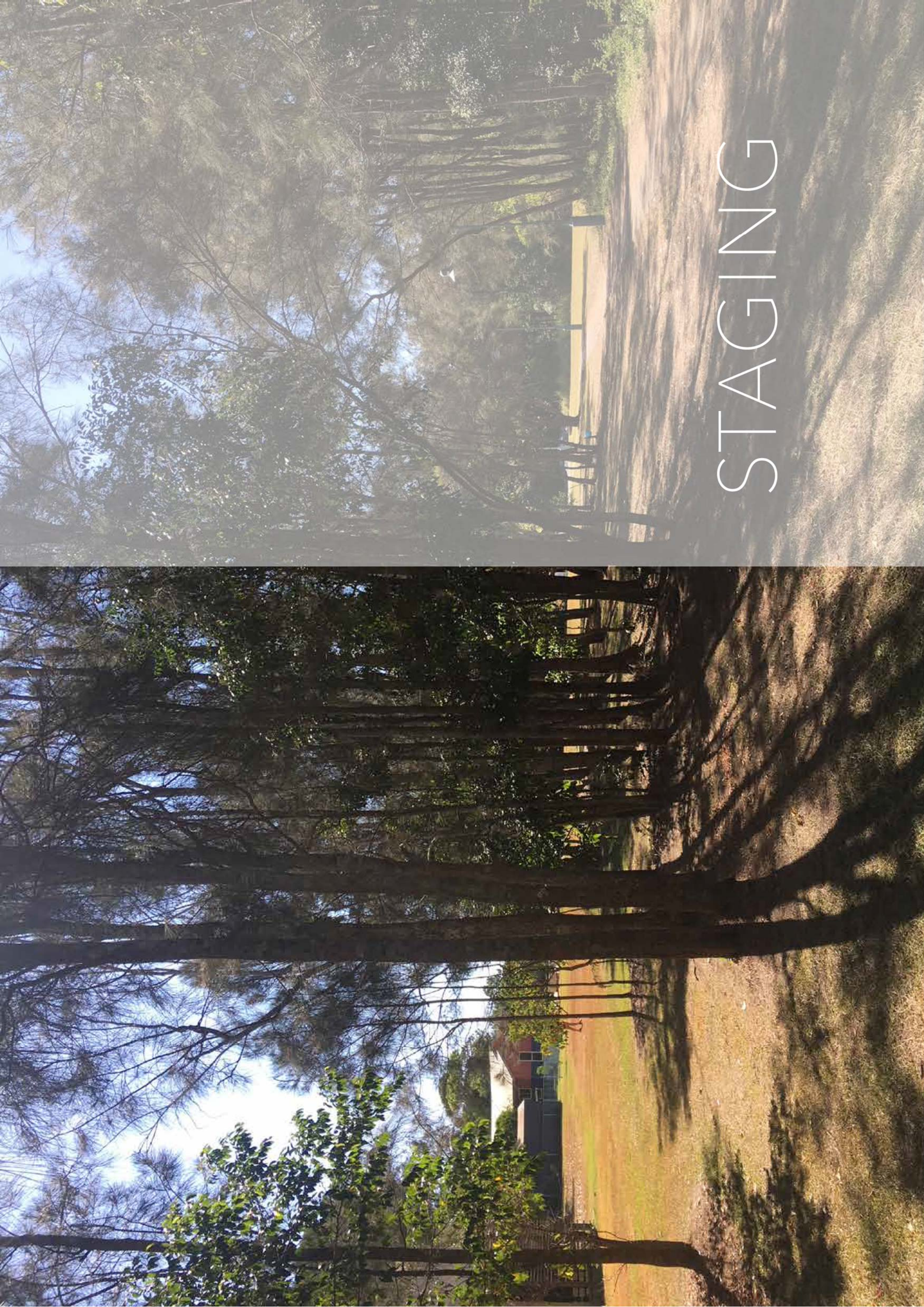
Example of outdoor table tennis



Example feature tree uplighting



Example bins



STAGING

Master Plan Staging



1

STAGE 1

2

STAGE 2

C

CROWN LANDS PROJECT

Thank you for reading this proposal

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