



Pacific Bay western lands

Landscape Masterplan Report

prepared for Thakral Pty Ltd
November 2008



jackie amos landscape architect

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Acknowledgements

Introduction

This landscape masterplan has been prepared as part of the Concept Plan for the proposed subdivision of land, including approximately 150 dwellings at Pacific Bay Resort (western lands), Pacific Highway, Korora, Coffs Harbour. The landscape masterplan, and Concept Plan, have been prepared in response to the Director General's Environmental Assessment Requirements (DGRs) for the project.

The Landscape Masterplan includes two sections. The first considers the existing site and its surrounds. This includes an assessment of existing views to the site from public locations, site analysis studies, identification of the character of the surrounding land uses and an analysis of the existing site character. The second section details the landscape proposals for the development. The landscape masterplan is to be reviewed in conjunction with the Concept Plan prepared by PTW, Sydney.

Section One

Site Analysis

1.1 Site Location

The Pacific Bay western lands are located north of Coffs Harbour, at Korora. The site is west of the Pacific Highway and north of West Korora Road. The northeast portion of the site is adjacent to Bruxner Park Road. The existing Pacific Bay Resort is located on the opposite side of the highway. The coastline beyond the resort includes Charlesworth Bay and Diggers Head.

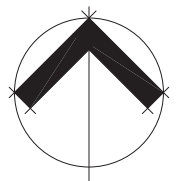
The project site is currently a combination of 1a rural agricultural land, 7a environmental protection habitat and catchment and 7b environmental protection scenic buffer. Part of the 1a land currently features an existing rugby field that has been utilised as the Wallabies rugby team training facility. The site has an undulating topography overlooking Jordans Creek to the south and the highway to the east. The topography ranges from an RL 85.00 in the northwest corner of the site to RL 15.00 in the southeast corner of the site. To the northwest of the site, Sealy Lookout represents the highest peak in the immediate vicinity. The surrounding properties include residential properties, banana plantations and the existing Bananacoast Caravan Park.



Illustration 1 - Site Location

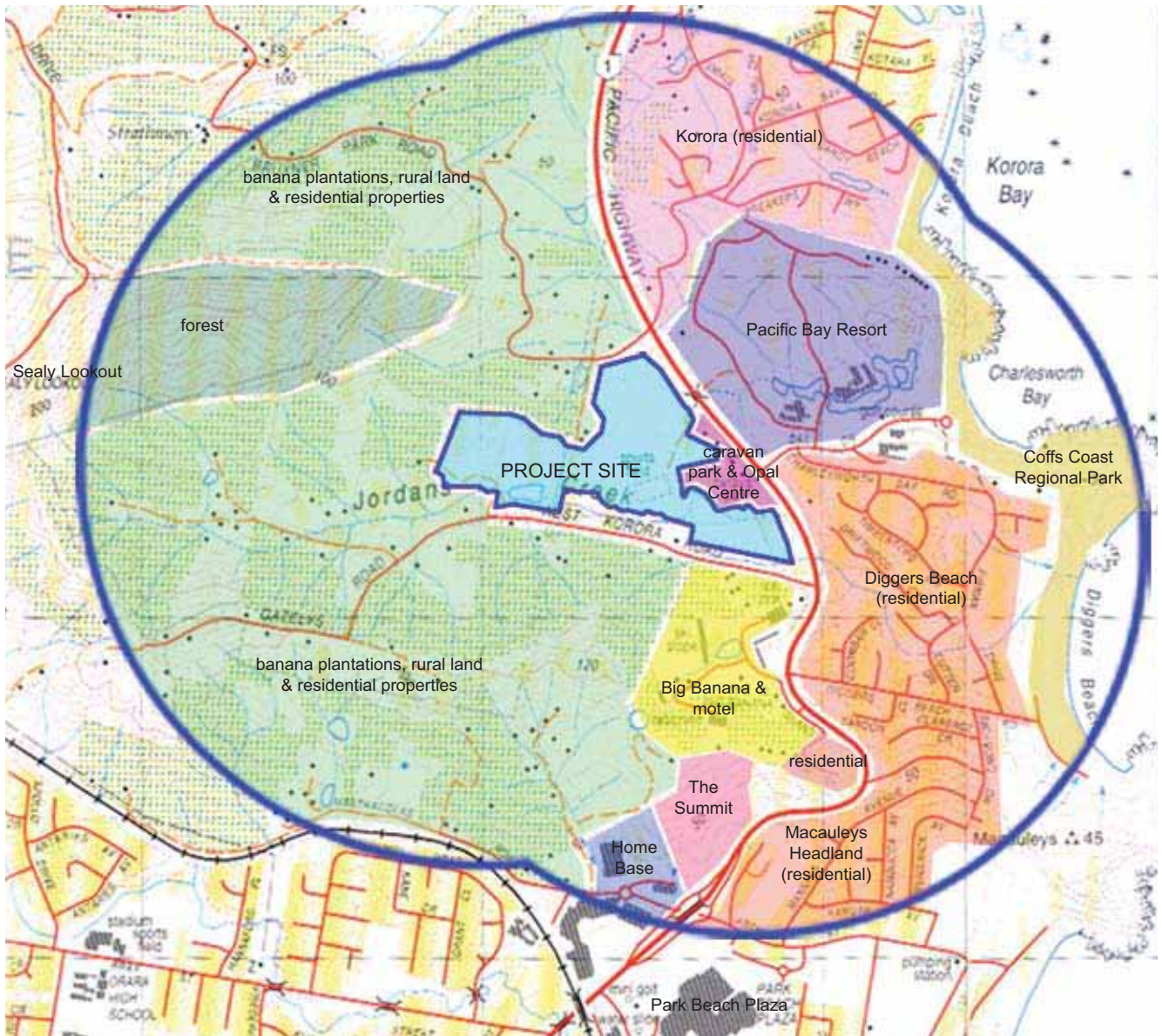


Illustration 2 - Site Location



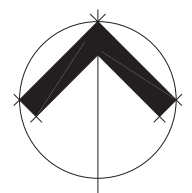
1.2 Site Context

The proposed development of the Pacific Bay western lands is seeking to establish a new residential development at the project site. As part of site planning, the character of the site context has been considered. This process will assist in developing a character to the proposed development that is relevant and appropriate to the site surrounds. The following illustration provides an impression of the visual character of the land uses within an 1km radius of the project site. The extent of each character area is general only and does not reflect exact boundaries or zoning. The analysis is intended as a visual overview of the site context.



NOTE: extent of area is indicative only of visual character for area & does not relate to actual property boundaries or zoned land uses.

Illustration 3 - Site Context



The locality to the proposed residential development includes:

- Korora;
- Pacific Bay Resort;
- Diggers Beach and Macauleys Headland;
- tourist facilities including the Big Banana, Coffs Harbour International Motel, Bananacoast Caravan Park and Opal Centre;
- Island View Close residences;
- The Summit residential development;
- Home Base;
- banana plantations, rural land and residential properties (West Korora & Bruxner Park);
- forest (Bruxner Park); and
- Coffs Coast Regional Park.

The following is a brief description of the character of these locations within the Pacific Bay western lands site context.

1.2.1 Korora

The southern extent of the residential area of Korora is approximately 1km to the north of the project site. Korora is located on the eastern side of the Pacific Highway between the highway and Korora Beach. It is accessed from James Small Drive off the Pacific Highway. James Small Drive meets the highway at the southern and northern extents of Korora. It is the main through road within the settlement.

Korora represents part of the continuous development between the Pacific Highway and the coastline north of Coffs Harbour to Sapphire. The settlement retains its identity as a separate settlement by being accessed from the highway at only two locations. Korora is also separated from other residential areas by the Pacific Bay Resort to the south and the Opal Cove Resort to the north.

Most of Korora represents an established residential area, however, there is some recent residential development immediately to the east of the highway. The street layout is organic in form with road locations determined by the undulating, and often steep topography. There are many mature garden and street trees and areas of reserves located along a series of lagoons. There is also a large area of park on the beach front. The overall character is of a leafy, attractive suburb. The road verges are grassed and are generally without kerb and gutter.

The topography at Korora is undulating but in general falls from the highway to the coastline. The settlement is located between the northern headland of Charlesworth Bay and the rocky point north of Korora Beach. The undulating landscape falls to two main drainage lines. The southern, drains to the ocean at the southern end of Korora Beach and the northern, drains to the southern end of Opal Cove Beach.

The majority of lots appear to have been established at approximately the same time, and are generally in the range of 600 to 800m². Housing styles are varied, reflecting different eras of construction. Materials include brick, masonry and timber. New homes in the area tend to be of rendered blockwork with contemporary detailing.

West of James Small Drive, there are some remnant rural and banana properties. There is also a new subdivision which includes new homes and houses currently under construction. These newer homes tend to be of rendered blockwork with tile roofs. The street layout in the new residential area is organic in format culminating in a number of cul-de-sacs. There are no street trees in this newer residential area.

At the southern extent of Korora a number of new large homes are currently under construction along Breakers Way. These homes are contemporary in style and feature rendered, painted blockwork, contemporary roof lines and timber detailing. These homes are located on the northern slope of the ridgeline between Korora and the Pacific Bay Resort.

Korora includes a local school located on James Small Drive and a number of small resort facilities. There is a carpark and public access to the beach at the end of Sandy Beach Road. The Hills Beach Reserve is accessed by Norman Hill Road.



James Small Drive



Korora public school



holiday units, Korora Bay



new residences east of highway



residences on Breakers Way



Opal Cove Beach looking north



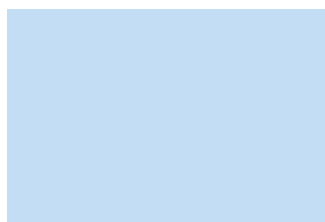
Opal Cove Beach looking south



parkland on foreshore



Norman Hill Drive



sportsfields



James Hill Drive

1.2.2 Pacific Bay Resort

The Pacific Bay Resort is located to the east of the project site, between the Pacific Highway and Charlesworth Bay. The resort is accessed from Charlesworth Bay Drive. The main resort facilities and buildings are located at the southern part of the site overlooking a series of lagoons. This area includes the existing resort buildings, internal access roads and carparking, pedestrian walkways, recreational facilities, community facilities, grassed open spaces, gardens, water courses and feature lagoons. The area presents a highly manicured and maintained character. Plant species included in the resort landscape include exotic and indigenous species.

The resort includes a golf course that covers a corridor running initially parallel with the highway and then traversing the lower part of the site in an west to east direction. This is a highly maintained landscape, characterised by open green spaces. The golf course is set along a natural drainage line. It includes pockets of groundcover planting, tree groves and sand bunkers. In many locations the course fits in and around the waterbodies that are a feature of the resort landscape.

The resort also includes a number of open grassed, undulating areas mostly surrounded by remnant vegetation. These areas represent proposed development sites within the resort.

There are a number of pockets of remnant vegetation located to the north of the main resort facilities. Some remnant vegetation is located along natural drainage lines within the site. The vegetation varies from wet sclerophyll forest to rainforest. These areas have a high visual amenity, separate the development sites and represent a large proportion of the limited remnant vegetation in the broader surrounds.

An internal access runs up through the middle of the resort. This provides access to a relatively new residential development at the highest part of the resort site. These new residences are located along a ridgeline and overlook Korora Bay.



resort buildings & accommodation



lagoon adjacent to main facilities



lagoon and golf course



pathway & resort gardens



looking north from resort to lagoon, golf course and development sites



grassed areas & remnant vegetation

1.2.3 Diggers Beach & Macauleys Headland

The settlement of Diggers Beach is located to the east of the Pacific Highway between Diggers Head and Macauleys Headland. This settlement is part of the continuous development existing between Coffs Harbour and Sapphire. The main access to Diggers Beach is from Diggers Beach Road off the Pacific Highway, opposite the “Big Banana”. Diggers Beach can also be accessed, from the north, by Charlesworth Bay Road and, from the south, by Richmond Drive.

The settlement at Diggers Beach is located between two headlands. Subsequently, much of the development is set below the ridgelines leading to the headlands. The settlement is largely defined by the site topography.

Diggers Beach Road provides access to a public carpark and foreshore parkland behind Diggers Beach. This is an older road within the settlement and is straight in nature, providing a direct link between the highway and the beach. North of Diggers Beach Road, the street layout is organic in form giving access to newer residential areas. There are a number of cul-de-sacs at this location. South of Diggers Beach Road the land rises to Macauleys Headland. A number of streets leave Richmond Drive and run roughly parallel with the contours. Homes along these streets have good views to the coast.

The older residential areas in Diggers Beach appear to be along Diggers Beach Road, on Macauleys Headland and just behind Diggers Head. Homes in these locations tend to be of varying styles and materials with well established gardens. Newer residential areas are located to the north of Diggers Beach. The most recent development appears to be the Pacific Terraces located along Charlesworth Bay Road at the northern extent of Diggers Beach.

The majority of lots within Diggers Beach appear to be in the range of 600 to 800m². Streets include kerb and channel and are well maintained. There is a mixture of young and mature street trees.

Diggers Beach is a popular coastline destination for locals and tourists. There is easy public access to the beach with two beach accesses and two public carparks. The beach itself is approximately 600 metres in length and there are timber steps and a paved walkway at its southern end providing access to Macauleys Headland. This is a popular walking route to Park Beach. There is a corridor of remnant vegetation behind the dunes to Diggers Beach. There are also large areas of remnant vegetation on Diggers Head and Macauleys Headland at either end of the beach.

At the eastern end of Diggers Beach Road and located between Firman Drive and Diggers Beach is the large established Anuka Resort. The buildings of this resort are well screened by dense lush planting along the western boundary. Planting to the resort focuses on palm and exotic sub tropical species.

To the south of Diggers Beach is further residential settlement. This area is between the Pacific Highway, Macauleys Headland and Arthur Street. Residences in this area are accessed from Diggers Beach Road and Richmond Drive or from Park Beach using Arthur Street. There is also access off the Pacific Highway to Macauleys Headland Drive. This road runs along the ridgeline at the top of the headland and residences in this location have views both up and down the coastline.

The settlement pattern here is largely dictated by the sloping topography. Whilst Diggers Beach Road and Arthur Street provide a fairly direct route from west to east, the road layout between, tends to be organic running with the natural contours. Richmond Drive provides direct access up and over the headland. There are a number of short cul-de-sacs at this location.

The area is an older residential area, however, there has been redevelopment of some properties as residential units and new large homes. At the southern end of the precinct, there is a number of older units. Older style units are generally of brick and tile construction. New units and homes tend to be rendered and painted blockwork with detailing in contemporary materials. Streets include kerb and channel and there is a mixture of young and mature street trees.



Diggers Beach Road (looking west)



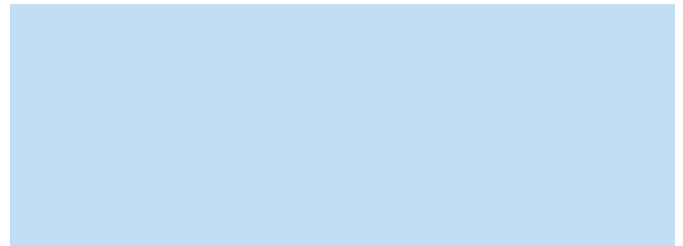
residences behind Diggers Head



newer residential properties north of Diggers Beach Road



Anuka Resort



residences on Macauleys Headland



residential units at the southern end of the Macauley Head precinct



1.2.4 Tourist Facilities

There are a number of tourist facilities located within the site context. These are the Big Banana and Coffs Harbour International Motel located south of the project site on the Pacific Highway and the Bananacoast Caravan Park and the Opal Centre located east of the project site. The caravan park and Opal Centre share their rear boundaries with the project site.

The Big Banana is a famous local attraction. It is situated just to the south of the intersection of the highway and Diggers Beach Road on the western side of the highway. It is accessed by Island View Close. The facility includes a number of public attractions located on steep ground that was previously used for banana farming. Remnants of banana fields are retained and are utilised as part of the attraction. The facility includes a public car park, the “Big Banana”, cafe, an indoor ski slope and an ice rink. The most recently constructed facilities include a theatre and a children’s water park with large inflatable waterslides. The buildings are painted a bright green and are distributed up the slope behind the “Big Banana”. The entry to the facility includes a large, white painted steel structure. This structure, the bright green buildings and the “Big Banana” are all very visible from the highway and the immediate surrounds. The “Big Banana” is a distinct local landmark and popular tourist destination.

Immediately to the north of the “Big Banana” is the Coffs Harbour International Motel. This includes brick buildings, signage, a pool, tennis court, carparking and gardens.

The Bananacoast Caravan Park and Opal Centre are located north of the intersection of the highway and West Korora Road. The facilities are both accessed from the highway and include extensive signage, a range of built elements and gardens of exotic plant species. The visual character of all these tourist facilities is typical of tourist facilities often found along the Pacific Highway at coastal settlements.



the “Big Banana”



Coffs Harbour International Motel



Bananacoast Caravan Park entry



on site caravans at the caravan park



Opal Centre

1.2.5 Island View Close residences

South of the Big Banana and west of the Pacific Highway, there is another small residential precinct. This is accessed by Island View Close. This is a short residential street ending in a cul-de-sac. Residences along this close are elevated above the highway with views to the coastline. Homes in this precinct are approximately of the same era as the original Macauley Headland homes. Construction is predominantly brick and tile. There are a number of large mature street and garden trees.



the northern end of Island View Close



residences along Island View Close

1.2.6 The Summit

“The Summit” is a newly established residential development located on vacant land between the Big Banana and the Home Base shopping precinct. The development is on the southeast facing side of a hill with access from Mastracolas Road. A main internal road provides access up the slope to individual unit accesses. A number of unit buildings have already been established with two and three level buildings. Building materials include rendered, painted blockwork, glass and timber. Colour selection for the established units tends to be dark and subtle so that the buildings are not too visually prominent on the hillside. Rock gabion walls have been used to achieve building platforms and retaining. The works constructed to date, including the entry, access road and a number of units are landscaped with indigenous species. There is revegetation planting at the eastern extent of the site.



“The Summit”

1.2.7 Home Base

The northern part of the shopping precinct called “Home Base” falls within a 1km radius from the project site. Home Base is a bulky good centre with a focus on products for the household including furniture, white goods, electrical items, pet supplies, car supplies and office goods. The northern part of Home Base is accessed from Mastracolas Road. This particular area includes two separate large carparks. Each location has a series of attached businesses. The most obvious visual features of this location is the extensive hard pavement for carparking, the large building forms and signage. There is some tree planting to the carparking area.



carparking areas and businesses in the northern area of Home Base

1.2.8 West Korora & Bruxner Park

Much of the site surrounds to the south, west and north of the project site consist of rural land, residential properties, banana plantations and areas of remnant forest. Bruxner Park is located to the north and northwest of the site on the western side of the highway. The area is accessed by Bruxner Park Road off the Pacific Highway. The area includes plantations of bananas and other crops and residential properties. There are some new homes constructed, and under construction, on the slopes of Bruxner Park.

Bruxner Park Road is a windy road that makes its way up the steep slopes to Bruxner Gap. Bruxner Park Road gives access to a large area of remnant forest in the hinterland to the north of Coffs Harbour. This vegetation includes the Orara East State Forest and Ulidarra National Park. Bruxner Park Road culminates at Sealy Point Lookout where views are possible south to Coffs Harbour.

West Korora Road, to the south of the project site, provides access to West Korora. This area also includes banana plantations, residential properties, pockets of remnant forest and plantations of other crops. The country is undulating and a variety of views are possible, back to the coastline and to the ridgeline of Sealy Lookout and associated peaks. Both West Korora and Bruxner Park are picturesque locations.



banana plantations at Bruxner Park



Bruxner Park Road



banana plantation, residence & remnant forest in West Korora



looking from West Korora to coastline



remnant forest in West Korora

1.2.9 Coffs Coast Regional Park

The Coffs Coast Regional Park (CCRP) is a joint initiative of the NSW National Parks and Wildlife Service (NPWS) and Coffs Harbour City Council (Council). Management of the Regional Park is shared in order to protect the areas significant natural and cultural values and to provide high quality recreational opportunities and facilities. The park consists of 26 kilometres of coastal dune systems, rainforests, heathlands, headlands, coastal lakes and parklands linking coastal towns and villages with the Solitary Islands Marine Park north from Coffs Harbour. The southern section of the park is a continuous coastal strip from Macauleys Headland to Green Bluff at Sapphire. Part of this section of the CCRP falls in the 1km site context of the project site. The includes an area from Macauleys Headland to Korora Bay.

There are a number of accesses to the CCRP within this stretch. Access to Diggers Beach and Macauleys Headland is via Diggers Beach Road. Access to Charlesworth Bay is via Bay Drive and the main access to Korora Bay is via Sandy Beach Road. This portion of the CCRP includes the vegetated headlands of Macauleys Headland, Diggers Head and the headland at the northern end of Charlesworth Bay. Walking tracks provide access over the headland.



Charlesworth Bay



Diggers Head

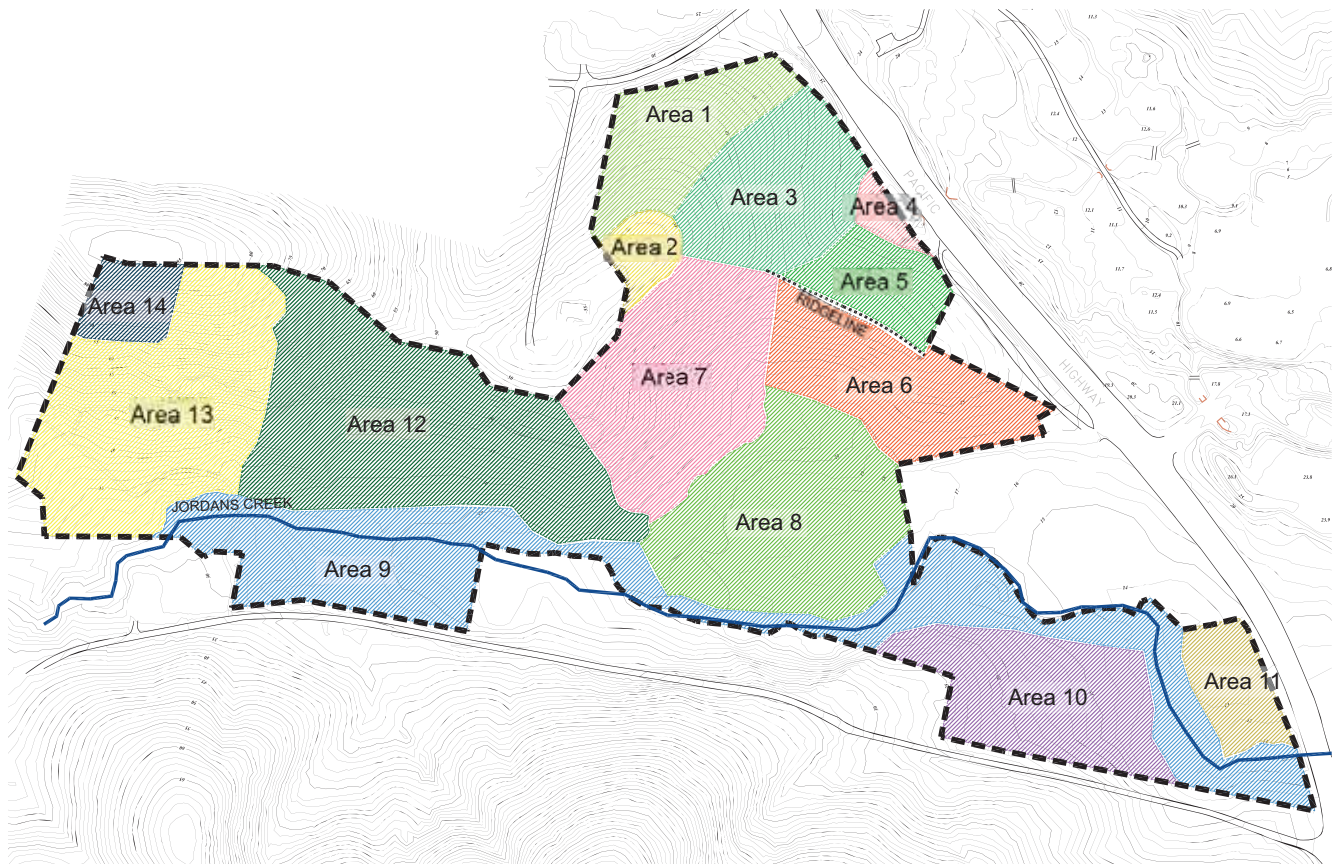


Diggers Beach

1.3 Site Analysis

1.3.1 Topographical Analysis

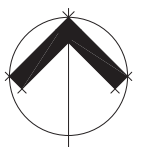
The project site is located on undulating topography to the west of the Pacific Highway with a fall of 85.00 at the northwest corner of the site to 11.00 on Jordans Creek at the southeastern extent of the site. The majority of the site is sloping, however there are two relatively level areas close to the creek in the southeast portion of the site. The following illustration provides an overview of the topography of the site with an indication of the average gradient for each area.



LEGEND

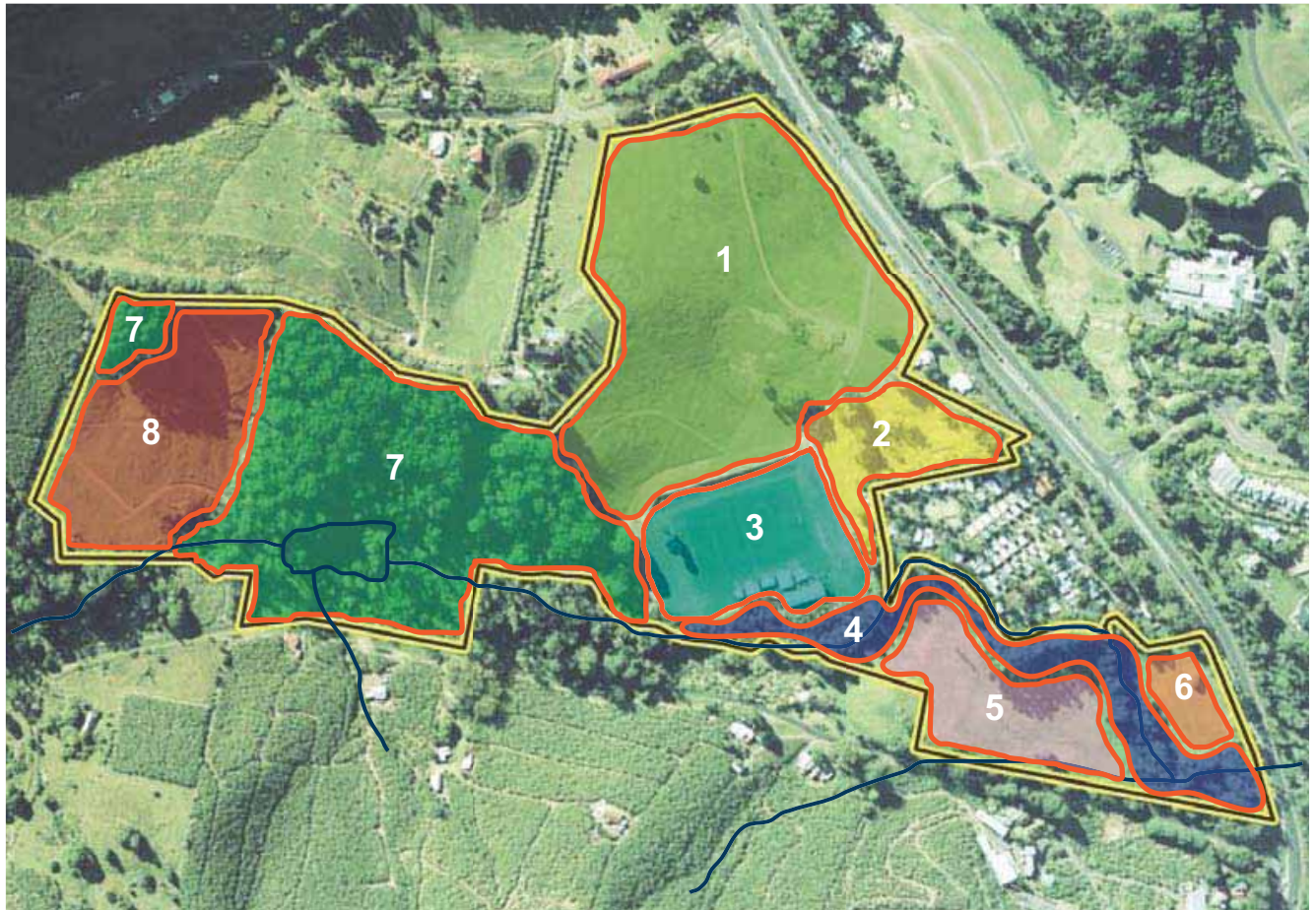
- Area 1 sloping from 30.00 to 55.00, average gradient 1:7
- Area 2 high point at 58.00
- Area 3 sloping from 24.00 to 55.00, average gradient 1:5
- Area 4 low point
- Area 5 sloping from 23.00 to 35.00, average gradient 1:7
- Area 6 sloping from 20.00 to 35.00, average gradient 1:6
- Area 7 sloping from 23.00 to 49.00, average gradient 1:5
- Area 8 relatively level area including existing rugby field
- Area 9 banks of Jordans Creek, invert ranges from 29.00 to 11.00 at eastern extent
- Area 10 sloping from 13.00 to 24.00, average gradient 1:10
- Area 11 relatively level, average gradient 1:30
- Area 12 7a vegetation, slopes from 24.00 to 79.00, average gradient 1:5
- Area 13 open grassed area, slopes from 31.00 to 65.00, average gradient 1:3 on steeper parts & 1:10 closer to creek
- Area 14 7a vegetation, slopes from 65.00 to 85.00m average gradient 1:4

Illustration 4 - Topographical Analysis











1.4 Site Character

The following illustration identifies key site character areas and provides a description of each of the character area types.



LEGEND

not to scale

-  character area type 1
-  character area type 2
-  character area type 3
-  character area type 4
-  character area type 5
-  character area type 6
-  character area type 7
-  character area type 8



Jordans Creek



Illustration 6 - Site Character Analysis

1.4.1 Character Area Type 1 *sloping grassland*

This character area is located at the northeastern extent of the site and represents one of the larger character areas within the site. The area is sloping grassland with a limited number of isolated remnant trees (less than 10 across the entire area). The grasses include Paspalum grass, Parramatta Grass and Rat Tail Grass. The two main slopes include a southeast facing slope and a northeast facing slope. The lower part of this area overlooks the Pacific Highway to the east and is visible from the highway. This area includes an existing underpass to the highway, providing a link with the Pacific Bay Resort. Much of the area has views to the Pacific Ocean.



looking northeast across the character area with the vegetated peak of Sealy Lookout in the background



looking southeast across the character area with the Pacific Highway, Pacific Bay Resort and Diggers Head in the background



the Pacific Highway, at the eastern extent of the character area



the existing underpass providing a link to the Pacific Bay Resort

1.4.2 Character Area Type 2 *grassland & remnant trees*

Character area type 2 is located between the open grassland, the rugby field and the adjacent properties of the caravan park and the opal store. It is similar to character area type 1 in that it includes grassland with Paspalum grass, Parramatta Grass and Rat Tail Grass, however, it also includes a number of mature remnant trees. These trees represent a visual feature in the otherwise broad open grassland. The area includes two main stands of trees. The first is to the northeast of the existing rugby field and includes specimens of Hoop Pines (*Araucaria cunninghamii*) and Tallowwood (*Eucalyptus microcorys*). The second stand of trees is located west of the caravan park and includes Blackbutt (*Eucalyptus pilularis*).



stand of remnant trees including Hoop Pines and Tallowwoods



looking through trees towards existing rugby field



Hoop Pines



second stand of trees behind the caravan park, dominated by Blackbutt specimens

1.4.3 Character Area Type 3 *Wallaby Training Field*

Character area type 3 represents the rugby field that was used as the Wallaby training field. It also includes the buildings to the south of the field that were part of the training facility. The site has sentimental and cultural significance to the local community having been used by the Wallabies. The area represents a highly cultivated and maintained part of the site, with the field irrigated and mowed. In addition to being a significant recreational site, the green field is a visually attractive facility. The area represents one of the lower locations within the site being located on the banks of Jordans Creek. The site is currently linked to the Pacific Bay Resort by a gravel track and an asphalt road at the highway underpass.



looking south from the grassed hill to the rugby field and associated facilities



looking north across the rugby field to the grassland with Sealy Lookout in the distance



the existing gravel road to the field

1.4.4 Character Area Type 4

Jordans Creek, east of the 7a vegetation

Jordans Creek traverses the southern extent of the site, including parts of the 7a vegetation. Character Area type 4 is the stretch of Jordans Creek east of the 7a vegetation area. This portion of Jordans Creek has been separated out as it represents a highly modified and impacted on section of the creek. Jordans Creek runs to the south of the rugby training facilities. It then meanders behind the caravan park and dissects the very southeastern extent of the site. The creek corridor, within this character area, is vegetated and there are some remnant riparian trees and plants. The vegetation, however, is highly weed infested. Camphor laurel has become established along this stretch of creek. Immediately behind the caravan park, the vegetated corridor is very narrow and there are obvious signs of human impact with fencing backing onto the creek and signs of rubbish disposal. Despite this, the creek does represent an attractive natural feature to this part of the site. There is an existing gap in the creek corridor just beyond the rugby facilities.



Jordans Creek behind the rugby facilities



the vegetated corridor of Jordans Creek traversing the southeast corner of the site



existing gap in the creek corridor currently used as an informal creek crossing



view of creek at crossing



creek narrows behind the caravan park

1.4.5 Character Area Type 5 *grassed area between Jordans Creek & West Korora Road*

Character Area type 5 is located between Jordans Creek and West Korora Road and represents another of the cleared grassed areas within the site. The area slopes from Jordans Creek to an approximate RL 24.00. The area is bounded by the vegetated creek corridor to the north and by vegetation along West Korora Road to the south. There is an existing residence immediately west of the area. The area is attractive with a sense of privacy created by the remnant creek and road side vegetation. A number of mature Eucalypts add to the visual amenity.



looking across the character area to the east and the vegetated corridor of Jordans Creek



looking from West Korora Road through the road side vegetation to the character area with the existing adjacent residence at the left of the photo

1.4.6 Character Area Type 6 *grassed area between Jordans Creek & highway*

Character Area type 6 is located between Jordans Creek and the Pacific Highway at the southeastern corner of the site. This area is flood prone and represents one of the not developable locations within the site. It appears relatively level between the highway and the creek bank. Due to the density of vegetation along the creek corridor it is only possible to access the area from the Pacific Highway.



looking from the southeastern corner of the site across the character area with the Pacific Highway visible at the right

1.4.7 Character Area Type 7

7a vegetation

Character Area type 7 includes two areas of 7a vegetation. The largest is located approximately in the middle of the site and is bounded by the northern and southern site boundaries. The second, and much smaller area, is located in the northwest corner of the site. Both areas are sloping. The largest area commences at Jordans Creek and slopes to an approximate RL 70.00. The second area is the highest location within the site and slopes from RL 65.00 to RL 85.00. The areas include primary and secondary koala habitat. The vegetation includes a range of types, detailed in the Flora & Fauna survey. At a glance, the area appears as dense Eucalypt dominated forest with a bushy understorey. The large area is divided by a powerline easement. At the southern extent of the larger 7a area, Jordans Creek runs from west to east. This stretch of creek includes a large freshwater lagoon and a series of small waterfalls. There is some weed infestation, particularly of lantana, along the creek. An existing vehicular track runs through the large area of 7a vegetation. Both areas, and Jordans Creek, are natural features to the site.



the eastern edge of the larger area of 7a vegetation



interface between the 7a vegetation and power easement



existing track through large area of 7a vegetation



freshwater lagoon on Jordans Creek



Jordans Creek



area of 7a vegetation at northwest corner of site

1.4.8 Character Area Type 8

western grassed area

Character Area type 8 is a large area of grassland located at the western extent of the site. The area is separated from the balance of the site by the large area of 7a vegetation. It represents one of the steeper open areas of the site sloping from Jordans Creek up to an approximate RL 80.00. Existing grasses include Paspalum Grass, Parramatta Grass and Rat Tail Grass. There is an existing banana plantation on the adjacent property to the west. This is an attractive, secluded location with good views to both areas of 7a vegetation and Jordans Creek.



looking across the character area uphill to the small area of 7a vegetation



looking west across the lower part of the grassed slope

1.5 Views to Site from Public Locations

The Pacific Bay western lands are approximately 4.5km north of Coffs Harbour. The site is located west of the Pacific Highway and to the north of West Korora Road. The site is undulating and is traversed by Jordans Creek. It includes an area of 7a vegetation, undulating grasslands and sports fields. The bulk of the grasslands are on the eastern and southeastern facing slopes of a hill. This is referred to as the 'large grassed area' in the view analysis photos. The second distinct clearing is located west of the 7a vegetation on a south facing slope.

A key issue in developing the site will be the consideration of how the development is viewed from the surrounds. Consideration has been given to the views to the site from public locations within 1km of the site. There are a number of factors that affect how the site can, or cannot, be seen from public locations in this vicinity. The undulating nature of the site and its surrounds contributes to both limiting and, in some instances, allowing views to potential development areas. In many cases, views to the site are interrupted by the surrounding landscape. For example, it is not possible to see the site either from Diggers Head or Macauleys Headland because of the topography between these locations and the project site. Occasionally, the elevated nature of the site does allow potential development sites to be seen. This is most obviously the case when viewed from the Pacific Highway. Another factor that has a positive impact on limiting views to potential development sites is the existing site 7a vegetation. This vegetation will be retained as part of any development.

There are a number of public sites from which the development site can be viewed. These include locations along the Pacific Highway, a limited number of locations on Bruxner Park Road, locations on West Korora Road and Gately Road and from the water immediately offshore from Charlesworth Bay. The most extensive views are from the Pacific Highway directly opposite the site (viewing location 6). The amount of traffic on the highway, the proximity of the site and the elevation of the site all contribute to this view being likely to have the greatest visual impact. The second most extensive view is from a location on Bruxner Park Road (viewing location 5). This view sees a large portion of the site and the view is against the skyline. However, it needs to be taken into consideration that there is not heavy traffic on Bruxner Park Road and that the road is particularly windy and this view, therefore, is available for a very short time. The largest portion of the site visible from any one location is approximately 25% of the entire site.

The following map indicates the views that are possible to the project site from public locations within a 1km radius of the site.



View 1 - Pacific Highway, 500m north of site

This view is from the Pacific Highway, 500m north of the project site. The northern most extent of the site is visible travelling south along the highway. This area is part of the larger grassed area of the site and it is approximately 10% of the entire site area. The balance of the site is concealed by topography or vegetation along the highway corridor.



View 2 - Pacific Highway, 300m north of site

This view is from the Pacific Highway, 300m north of the project site. Views are possible to the lower, east facing slope of the larger grassed area. This view takes in approximately 12% of the entire site area. The balance of the site is concealed by the site topography.



View 3 - corner of Bruxner Park Road and Pacific Highway

This view is from the eastern end of Bruxner Park Road at its junction with the Pacific Highway. It is immediately to the north of the project site. The very northern extent of the site is visible from this location. Due to the viewing location being lower than the site, the view only takes in the very edge of the site, a relatively small proportion of the overall site.



View 4 - Bruxner Park Road, 100m from the northwestern extent of the site

This view is from Bruxner Park Road. This road provides access from the Pacific Highway to numerous residential properties, to Bruxner Park lookout and is an alternative route to Central Bucca. From this location, part of the larger grassed area is visible. The visible area equates to approximately 6% of the project site. This is one of the limited locations at which potential development may be viewed with the sky as a backdrop.



View 5 - Bruxner Park Road, 300m from the northwestern extent of the site

This view is also from Bruxner Park Road. It takes in the north facing slope of the larger grassed area. This represents approximately 16% of the project site. Given the windy nature of Bruxner Park Road, whilst this particular view does take in a significant portion of the site, the view is brief when seen from a car travelling along the road.



View 6 - Pacific Highway, 500m north of northern extent of site

These views are from the Pacific Highway, immediately to the east of the project site. The views take in the eastern extent of the site, excluding the area to the south of the caravan park. Each view represents approximately 20 to 25% of the overall site. The site is visible travelling in either direction along the highway. Moving along this section of highway, the site is seen against the backdrop of a minor peak, the skyline and then Sealy Lookout.



View 7 - Pacific Highway, 100m east of site

This view is from the western end of Charlesworth Bay Road at its junction with the Pacific Highway. The closest part of the site is 100m away, however, this part of the site is concealed by other development along the highway. A small part of the larger grassed area is visible looking north along the highway. This represents a very small portion of the overall site area. It is seen again the backdrop of Sealy Lookout and the lower slopes of this peak.



View 8 - Pacific Highway, southeastern extent of site

This viewing location is at the southeastern extent of the site on the Pacific Highway. This small area of the site, approximately 5% of the overall site area, is separated from the balance of the site by the dense corridor of vegetation at the rear of the photo.



View 9 - West Korora Road

This view is from West Korora Road, south of the project site. West Korora Road provides access from the Pacific Highway to numerous residential properties along this road and Gately Road. This view takes in the portion of the site located between this road and Jordans Creek at the southeastern extent of the site. The area equates to approximately 14% of the overall site. The view takes in the site with the vegetated corridor of Jordans Creek as the backdrop.



View 10 - West Korora Road

These views are from West Korora Road, at the most elevated location on the road where it is still running roughly parallel within the southern boundary of the project site. Only very limited views of the site are available from this location. Views are mostly screened by existing vegetation, residential gardens and banana crops.





View 11 - West Korora Road

This view is from West Korora Road, to the southwest of the project site. The topography and the large area of 7a vegetation (at the right of the photo) means most of the site is not visible from this location. The area that is visible represents approximately 12% of the site. The view is seen with either the hill or remnant vegetation as a backdrop. It is only possible to see the site for a short length of road and there is limited traffic along the road due to the scattered residences in the vicinity and the route not being a through road.



View 12 - West Korora Road

This view is from the southern end of West Korora Road at its junction with Gately Road. The view takes in the most western extent of the site, with the balance being screened by the topography and the 7a vegetation on the site. The area is about 12% of the project site. The viewing location is approximately 700m from the site. The view is seen against the backdrop of site vegetation.



View 13 - West Korora Road

This view is from Gately Road, to the southwest of the project site. Gately Road is not a through road and it provides access to a limited number of residential properties. Those properties are elevated and takes in very broad views either of Coffs Harbour or Korora to the north. The site is approximately 1km away and although approximately 12% of the site is visible, it is viewed within a broad site context. The topography and the large area of 7a site vegetation screen the balance of the site.



View 14 - Charlesworth Bay

This view is approximately 500m offshore from Charlesworth Bay. The view takes in the eastern extent of the site which is part of the large grassed area. This area represents approximately 10% of the overall site area. The view is seen against the backdrop of Sealy Lookout and its lower slopes. The existing buildings of Pacific Bay Resort are also visible.

Section Two

Landscape Proposals

2.1 Landscape Masterplan Principles

The landscape masterplan for the proposed residential development of the Pacific Bay Resort western lands is based on the following principles.

- to retain, enhance and protect the 7(a) vegetation, koala habitat and riparian corridor to Jordans Creek;
- to reflect the setting including the proximity to the coast, the remnant bushland, Jordans Creek and the undulating topography;
- to incorporate Water Sensitive Urban Design principles;
- to integrate stormwater management into landscape approaches for the site;
- to create a landscape of a high visual amenity that is both legible and has a distinct landscape character;
- to consider the broader site setting;
- to provide links to the site surrounds;
- to provide internal circulation and to maximise opportunities to create walking/cycle networks that take in key landscape/natural features;
- to provide for interaction with natural features in a restricted manner that also protects those features;
- to provide for appropriate bushfire protection and management areas as required by the NSW Rural Fire Service;
- to retain the rugby training field as a historic feature and to incorporate the field as a key community facility;
- to create corridors of koala habitat trees that provide for the safe passage of koalas and other wildlife through the site;
- to provide opportunities for outdoor passive and active recreation; and
- to utilise indigenous plant species.

2.2 Landscape Masterplan Strategies

The landscape masterplan includes a number of landscape strategies. These strategies are as follows.

2.2.1 7(a) Vegetation and Koala Habitat

The 7(a) Environmental Protection Zone and Koala habitat will be retained. Revegetation and parkland planting and the planting of trees to individual allotments will seek to establish safe corridors for the movement of wildlife, in particular, koalas. The revegetation buffer to Jordans Creek will also contribute to establishing a corridor for wildlife movement. Refer to the proposed plant species list for trees to be planted in parks, streets, revegetation areas and allotments. Where development areas occur adjacent to 7(a) vegetation areas, appropriate bushfire measures will be incorporated. Tree planting will be spaced to maintain Asset Protection Zones with a maintained grassed understorey. Tree species will be selected to be bushfire retardant.

2.2.2 Jordans Creek

Jordans Creek traverses the site from west to east. A large portion of the creek is within the 7(a) vegetation zone. Where the creek emerges into open grassland the vegetated creek corridor has been more susceptible to human impacts. At this location, a buffer zone of an average of 30m will be revegetated as per strategies included in the Bushfire Safe Vegetation Management Plan. At some

locations, it is proposed the 30m revegetation buffer be reduced in order to maximise opportunities for creekside parkland. Revegetation areas will be widened at other locations to compensate. This is particularly the case at the proposed play park. It is anticipated that the revegetation zone and rehabilitated riparian vegetation will still be adequate to prevent informal access to Jordans Creek. Other parkland, e.g. at the creekside precinct, will be located on the creek bank outside of the 30m buffer zone. At some locations the pedestrian pathway meanders through the revegetation zone, however, human access will be limited to this pathway. At the creekside parks, park planting will be restricted to indigenous riparian species to limit the potential for exotic plant species to spread into the riparian habitat. Park facilities will be located to maximise views to the creek corridor. Revegetation and park planting will feature koala habitat trees to provide for the movement of koalas.

2.2.3 Stormwater Treatment

The development will incorporate Water Sensitive Urban Design strategies and traditional pit and pipe drainage system where topography restricts the use of open drainage swales. The 12m road providing access to lots 1 to 5 will incorporate a swale on the lower side of the road. This will be mass planted with indigenous grasses and macrophytes to act as a sediment trap and to extract nutrients from overland run off. Bollards will be included to limit parking to the edge of the swale.

The “central parkland” will also act as a stormwater treatment area. Two swales will drain into the parkland and will feature boulders and indigenous groundcover and macrophyte planting. The parkland will include a terrace with picnic shelters and seating. The lower part of the parkland will be grassed and will provide for stormwater treatment in addition to being an open grassed area for play. Existing Hoop Pines will be retained with their understorey mass planted with shade tolerant groundcovers.

The existing rugby field will be retained and will also provide for the treatment of stormwater.

A grassed swale will be incorporated into the scenic buffer, adjacent to the collector road. This will have an organic alignment to contribute to the parkland character for this location. The swale will drain to a grassed stormwater treatment area at the southern end of the scenic buffer.

2.2.4 Streetscapes

The main collector road will be landscaped to establish the road as the main access and thoroughfare for the community. Street trees will be arranged in a formal avenue. At three intervals along the road, the road will be narrowed for a length of 6 metres to provide for a widened road verge. At these locations, additional feature trees, with an understorey of low planting, will provide visual features along the route. The eastern side of the collector road will include a 2 metre wide bikeway. The western side of the road will include a 1.2 metre wide pedestrian pathway. Cross over locations will be provided at key locations. It is proposed the area between the pathway and the lot boundary be planted out to reinforce this as the most significant road and to create high visual amenity. Locations would be left unplanted for future lot driveways. This planting would vary from groundcover planting to low shrubs with a focus on achieving colourful contrast and patterning.

The scenic buffer is located between the collector road and the existing highway corridor. This would be treated to provide a visual buffer to the existing highway and to create a park like setting for this part of the collector road. Buffer planting along the eastern extent of the scenic buffer would include mounding and layered tree and shrub planting. The area between this buffer planting and the collector road would be grassed with a formal line of large, spreading feature trees.

The secondary streets will feature a more organic arrangement to street tree set out. Street tree species will be a combination of indigenous and exotic species. Where streets are in close proximity to Jordans Creek or the retained 7(a) vegetation, indigenous species will be used to reflect the natural setting. Secondary streets will include a 1.2 metre wide pathway to one side of the road.

It is proposed the narrow roads, i.e. the access to the hilltop lots and the road to the central parkland, include an alternative road pavement treatment to define them as routes for local traffic. This pavement would be a combination of concrete with banding of stone cobbles.

2.2.5 Buffer Planting

Buffer planting is located between the property boundary and Bruxner Park Road, the development site and the Pacific Highway and between the property and the Crown road. Buffer planting would seek to create a dense visual buffer and would include upper, mid and lower storey planting. Plant species would be indigenous. Where it is appropriate to encourage the movement of koalas, buffer planting would incorporate koala feed trees.

2.2.6 Pedestrian Links

The development will include an extensive pedestrian/cycleway network. Secondary streets will include a 1.2 metre pedestrian pathway to one side of the street. The collector road will include a bikeway and a pedestrian pathway. The bikeway will extend from the Bruxner Park Road entry to the park along the creek, cross over Jordans Creek and then onto the 'creekside' residential precinct. Green spaces will include pedestrian pathways, with pathways located to maximise outlooks and to take in natural features.

The path running to the east of the 7(a) vegetation will meander down the slope and will incorporate shelters and seating areas. Pathways within the park along Jordans Creek will meander through revegetation areas and open grassed areas. The pathway to the "green spine" will include a stepped access through a series of parkland terraces. Steps will be in concrete to minimise long term maintenance with retaining walls in rock gabion. Terraces will be linked by concrete pathways. In all instances the pathway network is intended to provide a range of recreational experience and to create a series of interesting and attractive journeys around the site.

It is proposed a nature trail be established along Jordans Creek, linking the western and eastern development sites. It is also proposed that a nature trail be established along the existing track in the northern part of the 7(a) vegetation. The trail would be 1.2m wide and of a material appropriate to the setting. To minimise impact on vegetation, it could be established where weeds are removed from the existing riparian corridor. It is proposed a timber deck and seating location be established at the eastern lagoon. Interpretive signage could be included along the route to explain the vegetation communities and significance of the western lagoon.

2.2.7 Plant Species Selection

A list of proposed plant species and planting locations is included in Sections 2.6, 2.7 and 2.8 of this report. Planting will be undertaken within the streets, parks, stormwater treatment areas, individual allotments and within revegetation areas. The Vegetation Management Report details species and strategies for revegetation areas. For the other planting areas, key strategies include:

- providing shade for the users of pathways, cycleways and parklands;
- adding visual amenity to streetscapes and parklands;
- defining key vehicular and pedestrian routes;
- defining entries and nodes within parklands;
- incorporating a combination of drought tolerant indigenous and exotic species;
- utilising indigenous grasses and macrophytes within stormwater treatment areas to trap sediment and extract nutrients from stormwater run off;
- incorporating rainforest, fire-retardant tree species within Asset Protection Zones to minimise the extent of leaf litter/ground fuel;
- spacing tree planting within Asset Protection Zones to ensure there is at least 5 metres between individual drip lines.

2.3 Proposed Finishes/Materials

A palette of proposed finishes and materials has been developed for the project. This palette seeks to create relevance to the setting, create a development with a high visual amenity and to provide a series of visual cues that links all parts of the site and establishes an overall distinct character to the development.

LOCATION	FUNCTION	MATERIAL/FINISH
Circulation		
bikeway	minimise maintenance requirements, be cost effective, provide for user safety	broom finished concrete with key nodes in exposed aggregate concrete
bikeway bridge to Jordans Creek	be appropriate to riparian setting, minimise maintenance requirements, provide for user comfort & safety, have a high visual amenity	steel framing & beams, recycled plastic decking
streetscape pedestrian paths	minimise maintenance requirements, be cost effective, provide for user safety	broom finished concrete with key nodes in exposed aggregate concrete
key nodes to bikeway & paths	define key nodes e.g. crossing locations, park entries, intersections points	exposed aggregate concrete/patterning in full depth coloured concrete
shared pedestrian/vehicular accesses to lots	define the road as a shared pedestrian/vehicular zone, indicate slow zone	concrete with banding of stone cobbles
car parking to play park	delineate car parking from road, establish distinct character to parkland area	coloured concrete with patterning in stone cobbles
parkland pathways	minimise maintenance requirements, provide for user safety, define key nodes	broom finished concrete with key nodes in exposed aggregate concrete/full depth coloured concrete
nature trail to Jordans Creek	minimise maintenance requirements, reflect natural setting & minimise construction impacts	coloured asphalt
boardwalk & viewing deck to lagoon	minimise maintenance requirements, reflect natural setting & minimise construction impacts	Turpentine hardwood posts, beams & joists, recycle plastic decking
Parkland		
park shelters	have a high visual amenity, provide for user comfort, contribute to distinct character of park	powder coated steel frame, timber beams & joists, powder coated steel elements, colorbond roofing, coloured concrete pavement
park furniture e.g. seating, BBQs, picnic settings, bins & bollards	have a high visual amenity, provide for user comfort, contribute to distinct character of park	timber, marine grade aluminium, stainless steel elements, powder coated steel
retaining walls to terraces in Green Spine	minimise maintenance requirements, be of a scale appropriate to the setting, have a high visual amenity	rock gabion retaining walls
stepped access to terraces in Green Spine	minimise maintenance requirements, provide for comfortable & safe pedestrian access, have a high visual amenity	concrete steps with stainless steel balustrades
softfall to Play Park	provide for children's safety, establish a colourful setting for play areas	rubberised wet pour
play pieces to Play Park	encourage participation by children, have a high visual amenity	combination of proprietary items with earthworks & landscape elements adding to play experience & play elements
garden edging	provide for easy mowing of turfed areas, add to the visual amenity of park gardens & grassed areas	concrete garden edging with the potential to use stone edging as a feature to key locations
seating walls in parkland e.g. along path to hilltop lots & at Lookout Park	add interest & visual amenity to the pathway circuit, provide for user comfort & resting	low stone walls incorporating seating, with stone to match stone incorporated in Green Spine

circulation



broom finished concrete paths/bikeway



exposed aggregate/colour concrete to define key locations



coloured concrete with patterns of cobbles



steel frame & recycled plastic decking to bridge



hardwood timber

parkland



powder coated steel



hardwood timber



colorbond roofing



marine grade aluminium



gabion rock retaining walls



stone seating walls



concrete steps



stainless steel balustrade



timber



stainless steel elements



coloured concrete

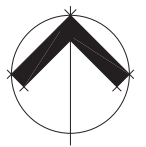


coloured concrete edge

2.4 Landscape Masterplan



scale
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LEGEND

- ① entry landscape
- ② collector road
- ③ scenic buffer
- ④ green spine & link to Pacific Bay Resort
- ⑤ central parkland
- ⑥ retained sports field
- ⑦ parkland
- ⑧ pedestrian link
- ⑨ hilltop lots & access
- ⑩ creekside precinct & parkland
- ⑪ nature trail
- ⑫ western precinct

2.4.1 entry and collector road

The main access to the development will be from Bruxner Park Road. Existing vegetation to Bruxner Park Road will provide a visual buffer to the northern extent of the community. Additional buffer planting will include indigenous trees. An entry landscape will introduce the site. The collector road will include an avenue of street trees. At intervals along the road, the road will be briefly narrowed to allow planter beds that will include broad feature trees. These trees will provide points of focus along the route. The western side of the road will include a 1.2m pedestrian pathway. The eastern side of the road will include a 2m bikeway. This bikeway will provide a cycle link from Bruxner Park Road through to West Korora Road. A large portion of the collector road will be bounded by the 20 metre scenic buffer to the Pacific Highway. This scenic buffer will be treated as parkland and will include buffer planting with indigenous shrubs and trees immediately adjacent to the highway corridor. Closer to the collector road, the scenic buffer will feature grassed areas with large shade trees. Where the collector road is adjacent to the scenic buffer, the bikeway will meander along the road edge and take advantage of the park like setting. On the western side of the road, planting between the pathway and lot boundary will reinforce the road as the main internal route and will enhance the pedestrian experience.



LEGEND

- ① main entry with broad trees, understorey planting, signage walls
- ② avenue of street trees
- ③ planter beds with feature trees
- ④ 1.2m pedestrian pathway
- ⑤ 2m bikeway
- ⑥ shrub/tree planting to scenic buffer
- ⑦ broad feature trees to scenic buffer
- ⑧ grassed stormwater treatment basin
- ⑨ cycle link to Pacific Bay Resort
- ⑩ hoop pines & parkland



avenue of street trees



bikeway meandering along edge of scenic buffer



broad shade trees as feature to scenic buffer

scale
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2.4.2 green spine

The green spine provides a pedestrian link from the lookout park to the bikeway, central parkland and to the existing facilities at the Pacific Bay Resort. The spine is landscaped to provide a series of grassed terraces. Terraces are retained with gabion rock retaining walls. Concrete pathways provide links between terraces with concrete steps providing access down the spine. Garden areas would be simple with mass planting of a limited number of hardy plant species. Shade trees and seats would be provided at the larger terraces for resting and lookout opportunities.



LEGEND

- ① lookout park with rock retaining wall & gardens to rear, pavement, seating and broad flowering feature trees
- ② gabion rock retaining walls with concrete steps providing access down slope
- ③ terraced grassed areas with shade trees & seating
- ④ pathway link & park with hoop pines, seating and buffer planting to lots
- ⑤ bikeway link to facilities at Pacific Bay Resort



scale
1:1000 @ A4



rock walls with grassed terraces



simple gardens massed planted with hardy species, planting kept low to maintain visibility



concrete pathways & steps providing access through spine



shade trees to terraces



2.4.3 central parkland

The central parkland is a key pedestrian node being located on the collector road and cycleway. The parkland also provides for the retention of a number of existing Hoop Pines that are an existing feature of the development site. The parkland will include an area for stormwater treatment with two outlets in the southwest part of the park. Stormwater will enter a grassed treatment area via two planted channels. The parkland will include a 1.2m pathway that provides access to picnic and seating areas. The picnic areas will be located along the northern side of the park. The understorey to the existing Hoop Pines will be mulched and mass planted with shade tolerant groundcovers. Other planting will include shade trees to the edge of the parkland and low shrub/groundcover planting to carpark and picnic areas. The stormwater treatment areas and western portion of the park will provide an open grassed area for active play. The park will be bounded by three sides by a shared pedestrian/vehicle zone that provides access to lots at that location.



stormwater outlet with planting & rocks



picnic shelters overlooking park

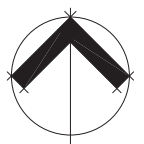


park furniture e.g. bollards, bike racks, seating, picnic settings



LEGEND

- ① link to facilities at Pacific Bay Resort
- ② link to 'green spine' and hilltop lookout park
- ③ 1.2m pathway along collector road
- ④ 2m bikeway along collector road
- ⑤ retained Hoop Pines
- ⑥ picnic shelters & seating
- ⑦ planted swales draining to grassed stormwater treatment area
- ⑧ shared pedestrian/vehicle zone with feature road pavement
- ⑨ shade trees to park edge



scale
1:1500 @ A4

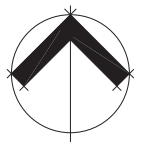
2.4.4 play park

The play park is located opposite the retained rugby field to create a hub for outdoor recreation and play. The play park is located on parkland overlooking Jordans Creek. Pedestrian links provide access from the eastern and western extents of the park with a main central access directly opposite the field. Car parking is provided adjacent to the park. The park includes play areas for toddlers and older children, picnic facilities and seating nodes. The park also has the potential to include a larger community shelter that could be utilised in association with the sporting field. The facilities are located in and around lush sub tropical planting. The creek includes extensive weeds at this location and with rehabilitation works there is the potential to provide limited access to the creek. It is proposed that the extent of creek revegetation be reduced at this location to maximise parkland space. Other revegetation areas are to be widened to compensate. The bikeway provides a link from the collector road, through the park across the creek to the 'creekside' precinct.



LEGEND

- ① 2m bikeway
- ② retained rugby field
- ③ large shelter for community events
- ④ children's playground
- ⑤ picnic/BBQ shelters
- ⑥ bikeway/pathway link across Jordans Creek
- ⑦ limited access to creek
- ⑧ link to nature trail



scale
1:1500 @ A4



paths & bikeway
meandering through park



children's playground



picnic & BBQ facilities



grassed areas with
shade trees & seating

2.4.5 link to hilltop precinct

The main development site is bounded to the west by the retained area of 7(a) vegetation. This bushland provides a natural feature to the site. A pedestrian link will take in this natural feature providing a link from the rugby field and play park up to the hilltop precinct. The pathway will meander along the bushland edge and will incorporate shade trees. Seating and a small shade shelter will be provided at locations to take in the view. The pathway will include links to the nature trail and pedestrian paths along streets.



path with key nodes defined



low stone wall with seating



small shade shelter at resting/viewing location



LEGEND

- ① link to play park & rugby field
- ② buffer planting to rear of residences
- ③ 1.2m pathway
- ④ nature trail along Jordans Creek
- ⑤ 7(a) vegetation
- ⑥ shade trees (located to maintain APZ)
- ⑦ seating area
- ⑧ small shade shelter with seating
- ⑨ link to hilltop precinct



scale
1:1500 @ A4

2.4.6 hilltop precinct

The hilltop precinct is located around the high point at the eastern part of the development site. At this location, lots 1 to 4 will be accessed from a 12 metre wide road reserve. The western side of the road will include a pedestrian pathway, street trees in grassed road reserve and low planting between the path and the property boundary. Stormwater will drain to a planted swale on the opposite side of the road. Street tree arrangement will be staggered along the road. It is proposed a concrete pavement with cobble banding is used to define the access to these lots and to create a shared pedestrian/vehicular zone. The green spine provides a link up to this precinct and culminates in the small lookout park. This park will include stone retaining walls, seating and broad shade trees. Planting to the rear of lots 1 to 4 will feature local signature species such as hoop pines.



road pavement in coloured concrete with patterning in cobbles



planted swale



feature bollards or similar barrier to restrict access into planted swale



LEGEND

- ① shared pedestrian/vehicular zone with feature road pavement
- ② 1.2m pathway & street trees to road reserve
- ③ planted swale
- ④ green spine with pathway link
- ⑤ lookout park with seating area
- ⑥ hoop pines and tree planting to rear of lots



scale
1:1500 @ A4

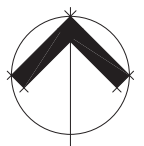
2.4.7 creekside precinct

The creekside precinct is located south of Jordans Creek and will be accessed from West Korora Road. This residential precinct will include parklands on the banks of the creek. This parkland will be linked to the balance of the site by a bridged crossing over Jordans Creek. The bikeway along the collector road will cross the creek and continue through this precinct linking to West Korora Road. A 1.2m pathway will meander through the parkland and will include seating locations. Revegetation planting along the creek will be in accordance with the Vegetation Management Plan prepared for the site. Revegetation to the creek will include a weed removal programme. A number of existing mature trees will be retained within the park/revegetation areas.



LEGEND

- ① bridged bikeway across Jordans Creek
- ② new plantings of Hoop Pines as feature tree to open grassed area
- ③ revegetation to Jordans Creek
- ④ 30m revegetation line from creek
- ⑤ retained indigenous trees
- ⑥ 1.2m pathway
- ⑦ bikeway link to West Korora Road
- ⑧ 1.2m path & street trees to residential street



scale
1:1500 @ A4

2.4.8 western precinct

This precinct is located at the western extent of the project site. The precinct is separated from the balance of the development by the large expanse of retained 7(a) vegetation and is located on a south facing slope overlooking Jordans Creek and West Korora Road. The precinct has a number of natural features including the remnant bushland and koala habitat, Jordans Creek and the elevated nature of the site. There is also a coastal freshwater lagoon located on Jordans Creek at the southeast corner of the precinct. A buffer zone will be installed to the creek and the lagoon which will include revegetation planting and Asset Protection Zones will be installed to the bushland edge.

This residential precinct will include pedestrian pathways along the streets and along the bushland edge. The precinct will be connected to the balance of the development by the nature trails through the 7(a) vegetation. The northern nature trail will be located along an existing vehicular track. The southern nature trail will meander along the northern side of Jordans Creek with the potential to include a short length of boardwalk and a viewing deck at an existing dam on Jordans Creek. There is also the potential to include interpretive signage along the nature trails to describe the remnant vegetation, koala habitat and riparian zones.



LEGEND

- ① pedestrian paths along streets
- ② northern nature trail located along existing vehicular track
- ③ southern nature trail along Jordans Creek
- ④ potential to include short boardwalk & deck at existing dam
- ⑤ coastal freshwater lagoon
- ⑥ retained 7(a) vegetation
- ⑦ buffer to creek
- ⑧ paths meandering along bushland edge



scale
1:2000 @ A4



paths meandering along the bushland edge



existing vehicular track as the site for northern nature trail



nature trails constructed either in coloured asphalt or decomposed granite & located to avoid tree removal



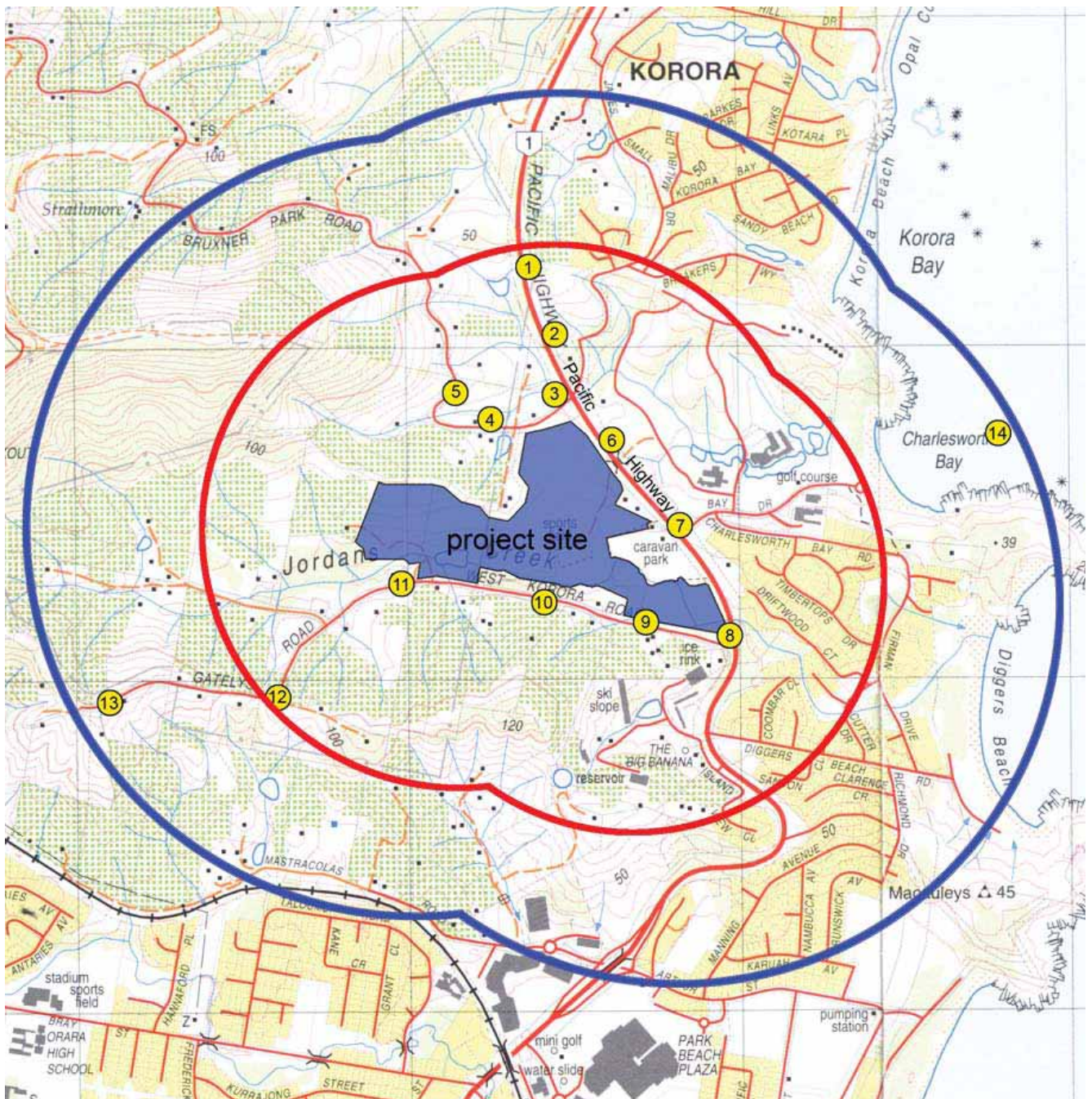
freshwater lagoon, existing dam and Jordans Creek will be natural features to the precinct



potential to include interpretive signage to natural features



potential to include a short length of boardwalk and lookout deck to dam



LEGEND

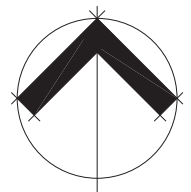
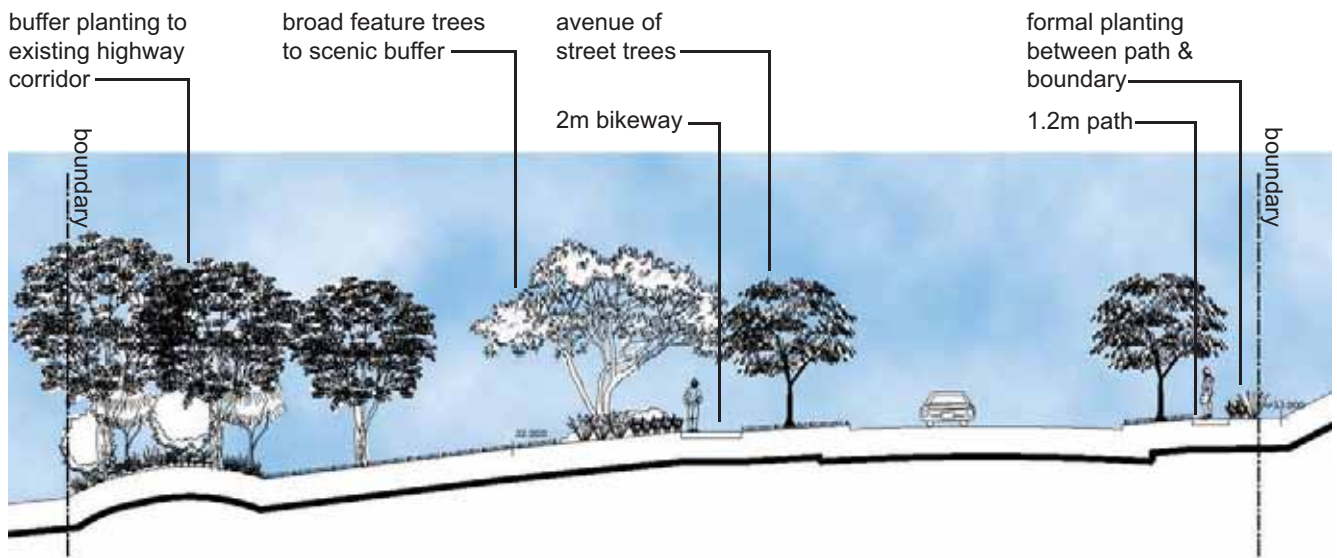


Illustration 7 - Views from Public Locations

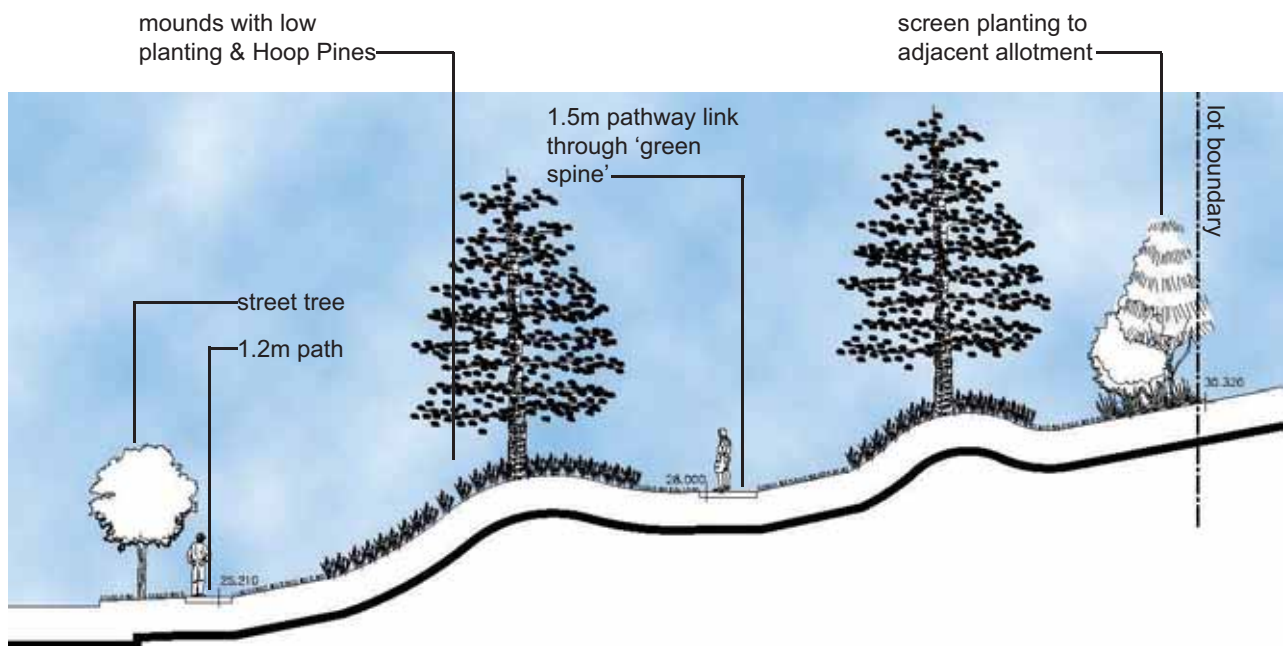
The photographs on the following pages indicate the views from public locations within a 1km radius of the project site from which it is possible to see part or all of the project site. For each photograph, the red area identifies the extent of the project site that is visible from that location.

2.5 Typical Cross Sections

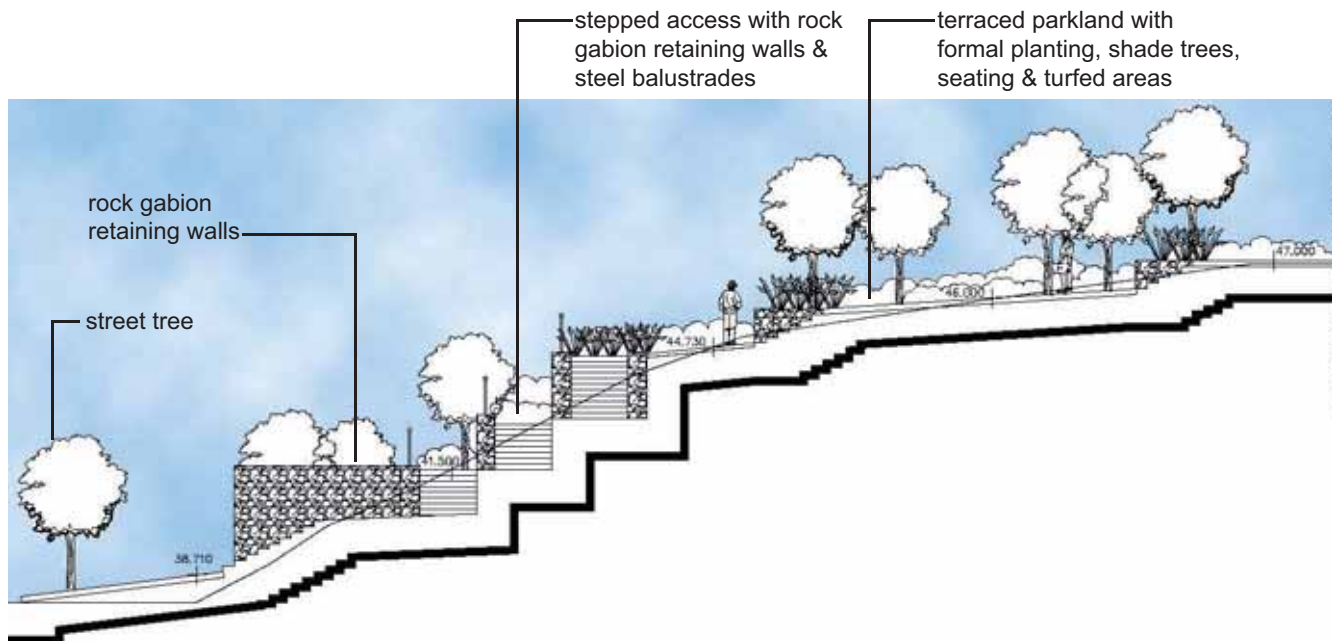




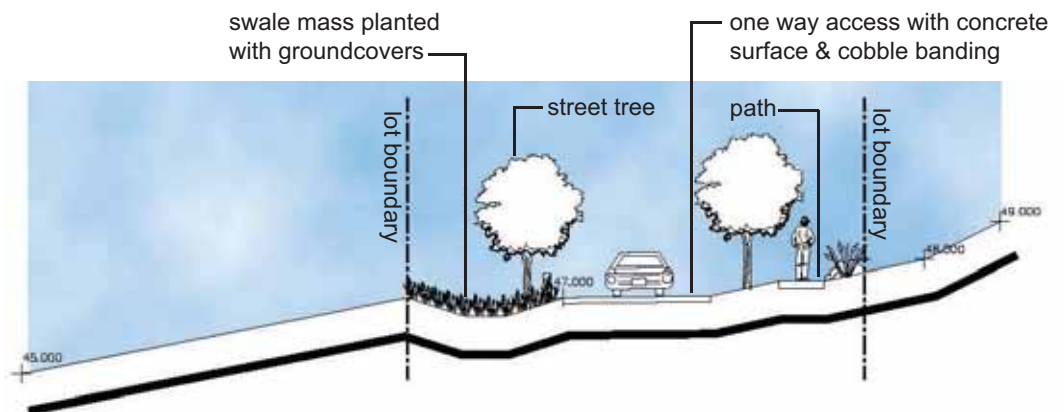
Typical Cross Section A - collector road & scenic buffer scale 1:250



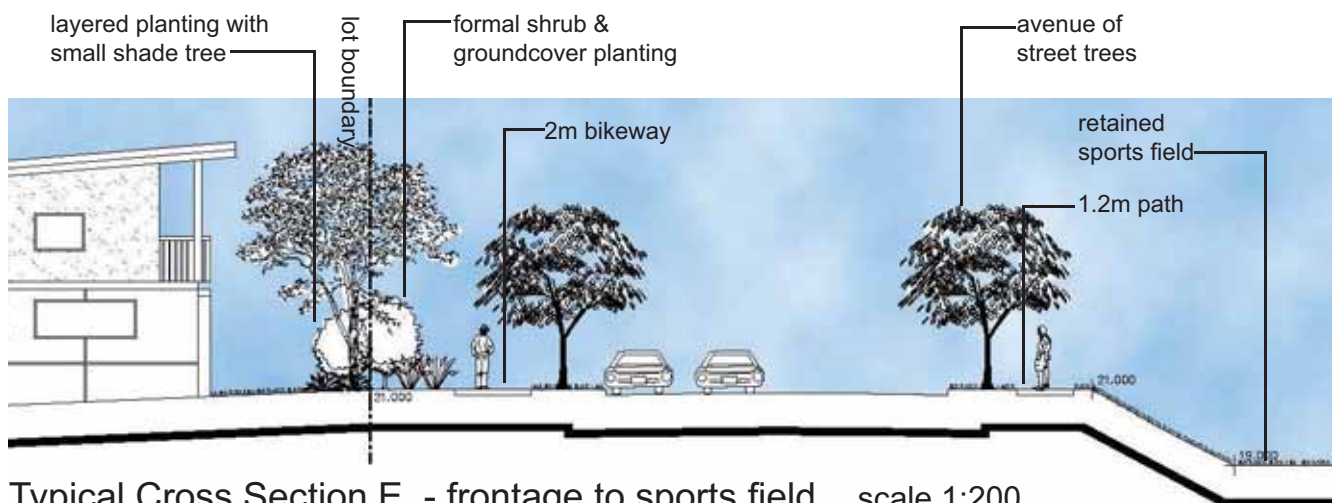
Typical Cross Section B - park at eastern end of 'green spine' scale 1:200



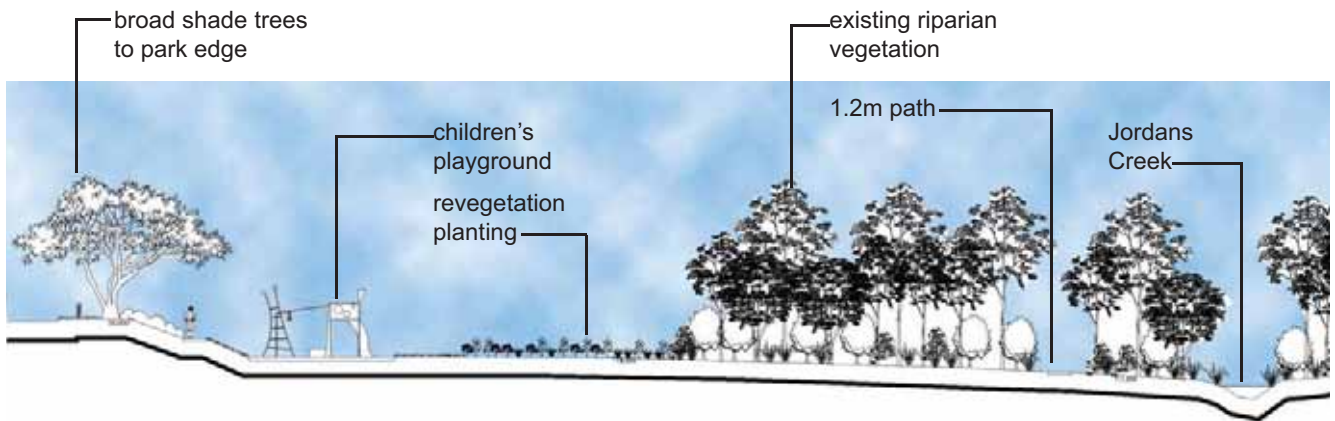
Typical Cross Section C - 'green spine' scale 1:200



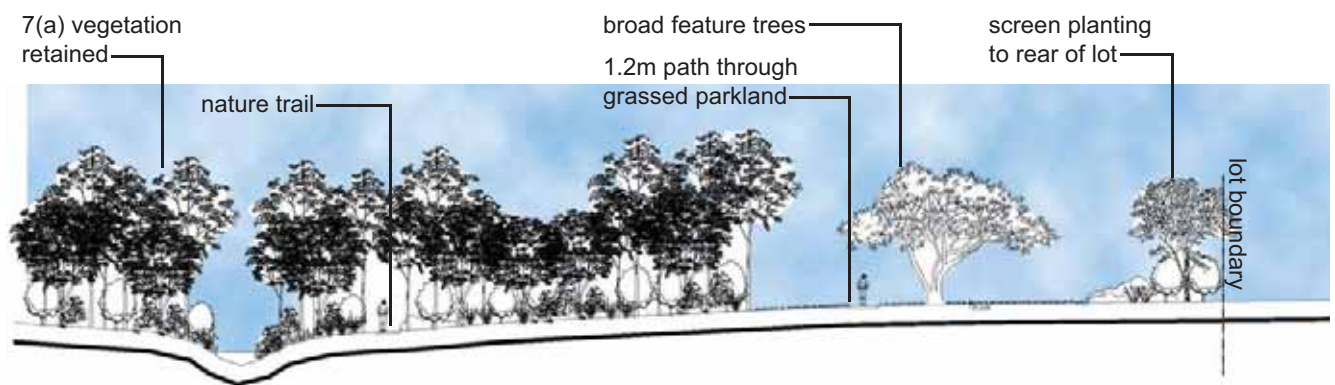
Typical Cross Section D - access to hilltop lots scale 1:200



Typical Cross Section E - frontage to sports field scale 1:200



Typical Cross Section F - play park scale 1:400



Typical Cross Section G - bushland edge & park scale 1:400

2.6 Proposed Tree Species

PACIFIC BAY WESTERN LANDS - proposed plant species							
Code	Botanical Name	Common Name	streetscape	parkland	revegetation	stormwater	allotment trees
Trees/Palms							
ACM smi	Acmena smithii	Lilly Pilly	x	x	x		
ALP exc	Alphitonia excelsa	Red Ash			x		
ANG cos	Angophora costata	Smooth-barked Apple		x			
ARA cun	Araucaria cunninghamii	Hoop Pine		x	x		
ARC cun	Archontophoenix cunninghamiana	Bangalow Palm		x	x		
BRA ace	Brachychiton acerifolius	Flame Tree	x	x			
CAE fer	Caesalpinia ferrea	Leopard Tree	x				
CAS aus	Cassine australis	Red Olive Plum					
CAS gla	Casuarina glauca	Swamp Oak		x	x	x	
CAS tor	Casuarina torulosa	Forest She Oak		x	x		x
COM bar	Commersonia bartramia	Brown Kurranjong					
CUP ana	Cupaniopsis anacardioides	Tuckeroo	x				
CRY tri	Cryptocarya triplinervis	Three-veined Laurel	x	x	x		
ELA ret	Elaeocarpus reticulatus	Blueberry Ash	x	x	x		
ELA eum	Elaeocarpus eumundi	Eumundi Quandong	x				
EUC gra	Eucalyptus grandis	Flooded Gum		x	x		x
EUC mic	Eucalyptus microcorys	Tallowwood		x	x		x
EUC pil	Eucalyptus pilularis	Blacbutt		x	x		x
EUC pro	Eucalyptus propinqua	Grey Gum		x	x		x
EUC sid	Eucalyptus siderophloia	Northern Grey Ironbark					
EUO ell	Euodia elleryana	Corkwood		x	x		
FIC cor	Ficus coronata	Creek Sandpaper Fig		x	x	x	
FIC obl	Ficus obliqua	Small-leaved Fig		x			
FIC rub	Ficus rubiginosa	Port Jackson Fig		x			
GLO fer	Glochidion ferdinandi	Cheese Tree		x	x		
HYM fla	Hymenosporum flavum	Native Frangipani		x			
LIV aus	Livistona australis	Cabbage Palm		x	x		
LOP con	Lophostemon confertus	Brush Box	x	x	x		
MEL qui	Melaleuca quinquenervia	Broad-leaved Paperbark		x	x	x	x
MIC cha	Michelia champaca	Golden Champaca	x				
SYN gla	Synoum glandulosum	Scentless Rosewood					
SYN glo	Syncarpia glomulifera	Turpentine		x	x		
SYZ lue	Syzygium luehmannii	Riberry	x	x			
SYZ ole	Syzygium oleosum	Blue Lily Pilly	x	x	x		
TRI lau	Tristania laurina	Water Gum	x	x	x		
WAT flo	Waterhousea floribunda	Weeping Lilly Pilly	x				

Proposed Tree Species



Acmena smithii
Lilly Pilly



Alphitonia excelsa
Red Ash



Angophora costata
Smooth-barked Apple



Araucaria cunninghamii
Hoop Pine



Archontophoenix cunninghamiana
Bangalow Palm



Brachychiton acerifolius
Flame Tree



Caesalpinia ferrea
Leopard Tree



Cassine australis
Red Olive Plum



Casuarina glauca
Swamp She-oak



Allocasuarina torulosa
Forest She-oak



Commersonia bartramia
Brown Kurrajong

Proposed Tree Species



Cupaniopsis anacardioides
Tuckeroo



Cryptocarya triplinervis
Three-veined Laurel



Elaeocarpus reticulatus
Bueberry Ash



Elaeocarpus eumundi
Eumundi Quandong



Eucalyptus grandis
Flooded Gum



Eucalyptus microcorys
Tallowwood



Eucalyptus pilularis
Blackbutt



Eucalyptus propinqua
Grey Gum



Euodia elleryana
Corkwood



Ficus coronata
Creek Sandpaper Fig



Ficus obliqua
Small-leaved Fig



Ficus rubiginosa
Port Jackson Fig



Glochidion ferdinandi
Cheese Tree



Hymenosporum flavum
Native Frangipani



Livistona australis
Cabbage Palm



Lophostemon confertus
Brush Box

Proposed Tree Species



Melaleuca quinquenervia
Broad-leaved Paperbark



Michelia champaca
Golden Champaca



Synoum glandulosum
Scentless Rosewood



Syncarpia glomulifera
Turpentine



Syzygium luehmannii
Riberry



Syzygium oleosum
Blue Lilly Pilly



Tristanopsis laurina
Water Gum



Waterhousea floribunda
Weeping Lilly Pilly

2.7 Proposed Shrub Species

Code	Botanical Name	Common Name	streetscape	parkland	revegetation	stormwater
Shrubs						
ACA fim	Acacia fimbriata	Fringed Wattle		x	x	
ACA dwa	Acacia fimbriata dwarf	Fringed Wattle				
AGO fle	Agonis flexuosa	Willow Myrtle	x			
ALE cor	Alectryon coriaceus	Beach Bird's Eye		x	x	
AUS ino	Austromyrtus inophloia "Blushing Beauty"	Austromyrtus	x	x		
BAC myr	Backhousia myrtifolia	Grey Myrtle		x	x	
CAL sal	Callistemon salignus	Willow Bottlebrush				
CAL vim	Callistemon viminalis	Weeping Bottlebrush				
COR aus	Cordyline australis purpurea	Cabbage Palm				
COR str	Cordyline stricta	Cordyline		x	x	x
CYA coo	Cyathea cooperi	Straw Treefern		x	x	
CYA lei	Cyathea leichhardtiana	Prickly Treefern		x	x	
DIC thy	Dichorisandra thysiflora	Blue Ginger		x		
GRE hon	Grevillea "Honey Gem"	Grevillea		x		
GRE mis	Grevillea "Misty Pink"	Grevillea	x	x		
GRE moo	Grevillea "Moonlight"	Grevillea		x		
GRE ora	Grevillea "Orange Marmalade"	Grevillea		x		
GRE syl	Grevillea "Sylvia"	Grevillea	x	x		
MEL lin	Melaleuca linariifolia	Snow in Summer		x		
MET col	Metrosideros collina "Thomasii"	New Zealand Christmas Bush	x			
PHO ten	Phormium tenax	NZ flax	x	x		
PHO rob	Photinia robusta	Photinia	x	x		
SYZ aus	Syzygium australe	Brush Cherry		x		
SYZ AS	Syzygium "Aussie Southern"	Lilly Pilly cultivar		x		
SYZ cas	Syzygium "Cascade"	Lilly Pilly cultivar	x	x		
SYZ ele	Syzygium "Elegance"	Scrub Cherry	x	x		
SYZ res	Syzygium "Resilience"	Lilly Pilly cultivar	x	x		



Acacia fimbriata
Fringed Wattle



Acacia fimbriata dwarf
Dwarf Fringed Wattle



Agonis flexuosa After Dark
After Dark Willow Myrtle



Alectryon coriaceus
Beach Bird's Eye



Austromyrtus inophloia "Blushing Beauty"
Austromyrtus



Backhousia myrtifolia
Grey Myrtle



Callistemon salignus
Pink Tips

Proposed Shrub Species



Callistemon viminalis
Weeping Bottlebrush



Cordyline australis purpurea
Cabbage Palm



Cordyline stricta
Cordyline



Cyathea cooperii
Straw Treefern



Dichorisandra thyrsiflora
Blue Ginger



Grevillea "Honey Gem"
Grevillea cultivar



Grevillea "Misty Pink"
Grevillea cultivar



Grevillea "Moonlight"
Grevillea cultivar



Grevillea "Orange Marmalade"
Grevillea cultivar



Grevillea Sylvia
Grevillea cultivar



Melaleuca linariifolia
Snow in Summer



Metrosideros collina "Thomasii"
New Zealand Christmas Bush



Phormium tenax
NZ flax

Proposed Shrub Species



Photinia robusta
Photinia



Syzygium australe
Scrub Cherry



Syzygium Aussie Southern
Lilly Pilly



Syzygium "Cascade"
Lilly Pilly cultivar



Syzygium "Elegance"
Brush Cherry cultivar



Syzygium Resilience
Lilly Pilly

2.8 Proposed Groundcover Species

Code	Botanical Name	Common Name	streetscape	parkland	revegetation	stormwater
Groundcovers & Vines						
ACM all	Acmena "Allyn Magic"	Allyn Magic Lilly Pilly	x			
ALO bri	Alocasia brisbanensis	Cunjevoi			x	x
ASP aus	Asplenium australasicum	Bird's Nest Fern		x	x	x
DIA cae	Dianella caerulea	Flax Lily		x	x	x
DIA sil	Dianella "Silver Streak"	Flax Lily cultivar	x	x		
GAH sie	Gahnia sieberiana	Saw Sedge			x	x
GRE roy	Grevillea "Royal Mantle"	Grevillea	x			
HIB sca	Hibbertia scandens	Snake Vine	x	x	x	
LIR EG	Liriope Evergreen Giant	Giant Mondo	x			
LOM hys	Lomandra hystrix	Spiny Mat Rush		x	x	x
LOM lon	Lomandra longifolia	Mat Rush	x	x	x	x
LOM tan	Lomandra Tanika	Mat Rush cultivar	x			
PAN pan	Pandorea pandorana	Wonga Vine		x	x	
TRA jas	Trachelospermum jasminoides	Star Jasmine	x			



Acmena "Allyn Magic"
Allyn Magic Lilly Pilly



Alocasia brisbanensis
Cunjevoi



Asplenium australasicum
Birds Nest Fern



Dianella caerulea
Flax Lily



Dianella "Silver Streak"
Flax Lily cultivar



Grevillea "Royal Mantle"
Grevillea



Hibbertia scandens
Snake Vine



Liriope Evergreen Giant
Giant Mondo



Lomandra hystrix
Slender Mat Rush



Lomandra longifolia
Mat Rush



Lomandra tanika
Mat Rush cultivar



Pandorea pandorana
Wonga Vine



Trachelospermum jasminoides
Star Jasmine

ACKNOWLEDGEMENTS

Photographs used in the Site Analysis Section of this document were taken by Jackie Amos. Photographs used in the Landscape Proposal Section of this document to indicate proposed landscape character include projects completed by a range of other consultants. Images have been extracted from a range of sources including the following.

Amidon, Jane 2003	<i>Radical Landscapes, Reinventing Outdoor Space</i> , Thames & Hudson, London.
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Wrigley, John & Fagg, Murray 2007	<i>Australian Native Plants, Cultivation, Use in Landscaping and Propagation</i> , Reed New Holland, Sydney.