

5.0 The Plan

5.3.5 Pedestrian Network

A clear hierarchy for pedestrian movement has been developed to ensure safe and direct access for pedestrians throughout Cockburn Coast. The network will consist of:

- Informal tracks to the beach
- Footpaths within the road system
- Shared paths, for pedestrians, cyclists etc
- Shared surfaces, accommodating vehicles, cyclists pedestrians
- Plaza spaces for pedestrians
- At grade pedestrian crossings at particular points along the freight rail alignment
- Controlled crossing points built into the road network

Figure 40 below illustrates this network.

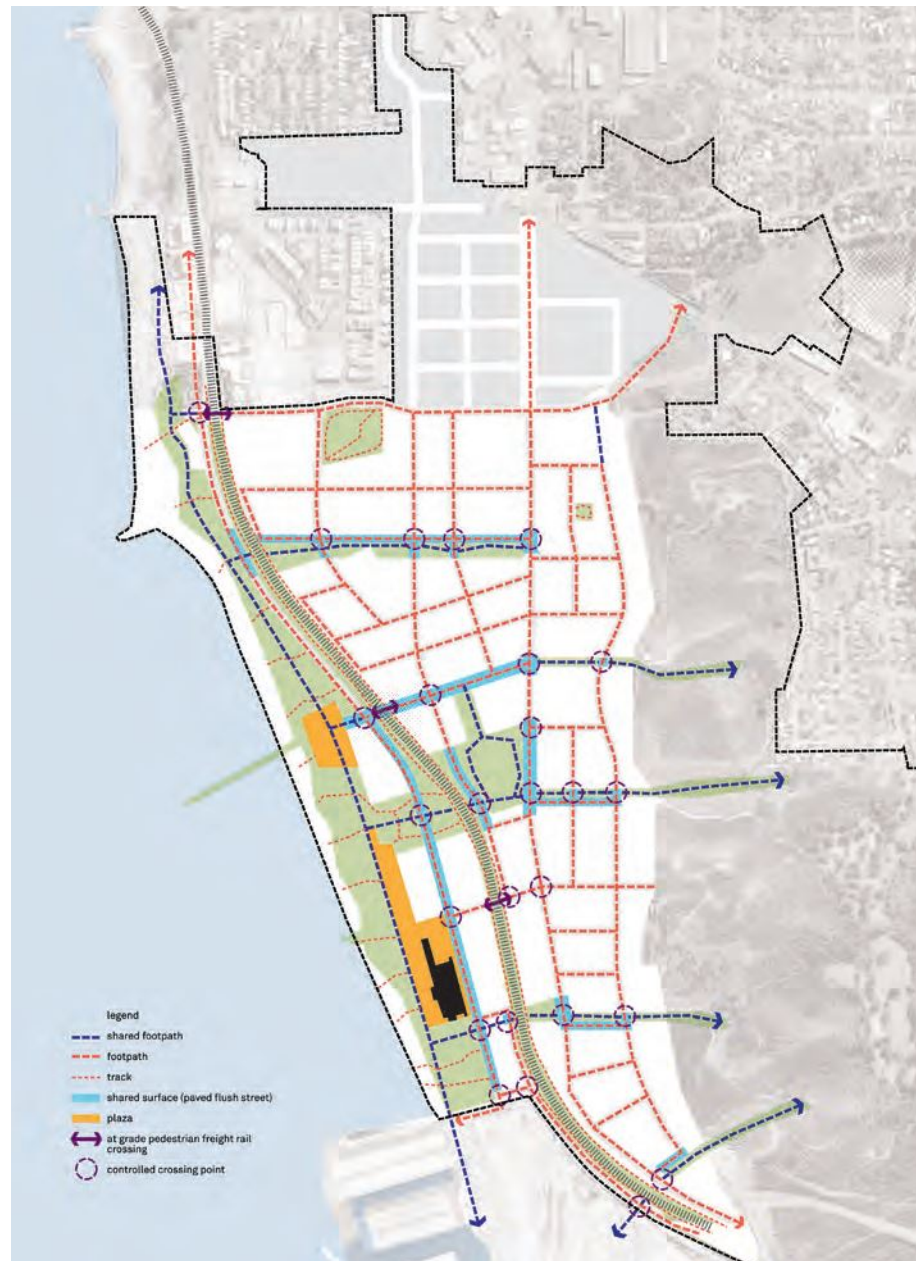


Figure 40_Pedestrian Movement

5.3.6 Cycle Network

The Plan promotes cyclist activity throughout Cockburn Coast through providing a comprehensive and accessible cycle network.

The cycle network consists of:

- Off road shared paths to accommodate through traffic including recreational and commuter cyclists
- On road primary cycle route to accommodate primarily commuter cyclists
- On road secondary cycle route to accommodate local cycle movements
- At grade pedestrian/cycle crossings at specific points along the freight rail alignment

Figure 41 below illustrates the hierarchy of the proposed cycle network.



Figure 41_Cycle Network

5.3.7 Sight Lines

The street and block layout seeks to accommodate and protect continuous views to the coast at various points. In addition, future design guidelines will need to ensure that the built form is designed in a way that ensures additional sight lines to the ocean and major cultural features are unobstructed.

Figure 42 below illustrates potential views built into the Plan.

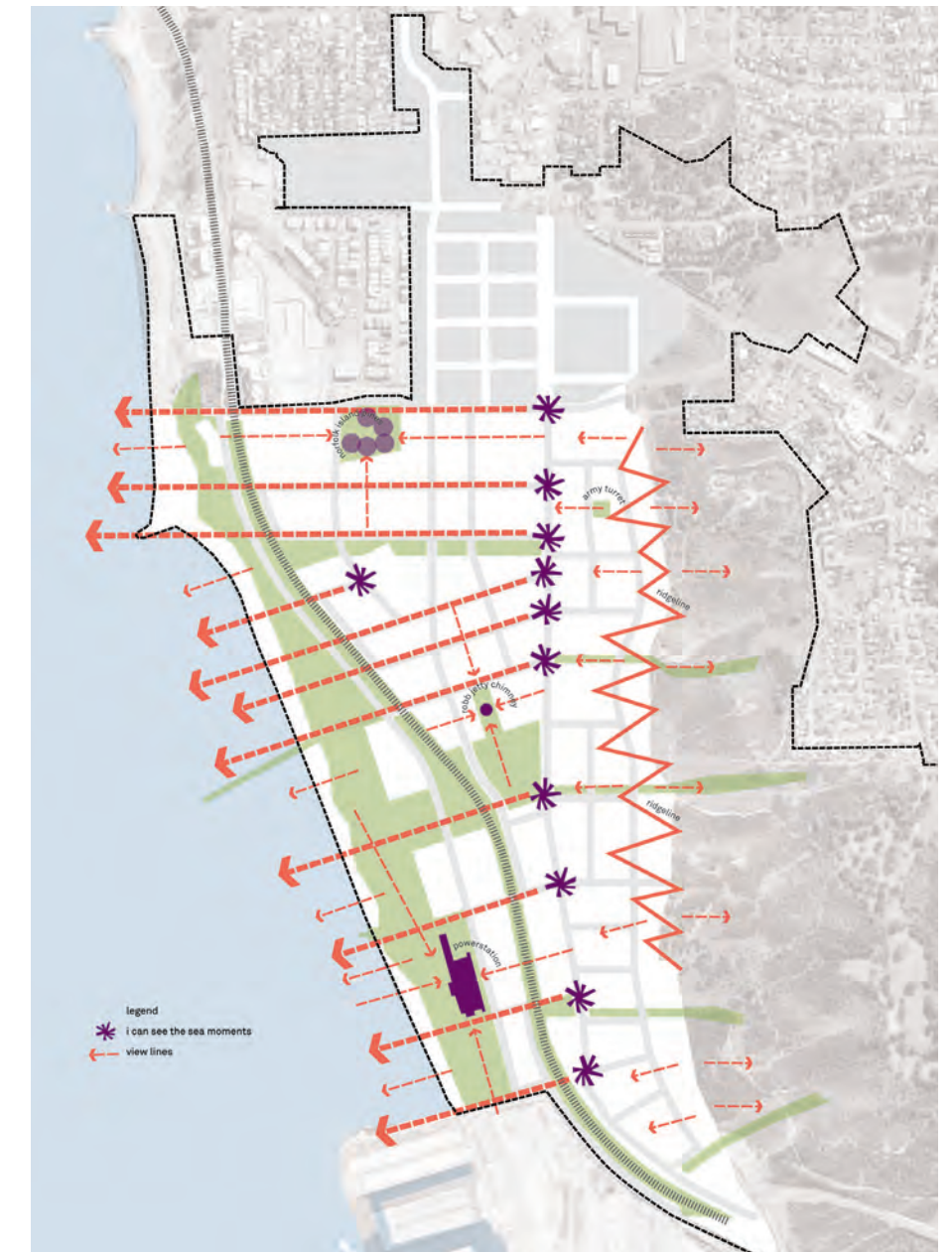


Figure 42_Sight Lines

5.0 The Plan

5.3.8 Water Sensitive Urban Design

Water sensitive urban design plays an integral role in the future of this development and its surrounding region. The following strategies are proposed, to ensure the project employs Water Sensitive Urban Design:

- Native planting which has low water requirements and is drought tolerant
- Permeable surfaces - including lawn, planting and permeable paving
- Swales to capture water locally and promote infiltration
- Detention basins to capture stormwater run-off and promote infiltration
- Rain water harvesting

These strategies will be pursued further in the preparation of local structure plans and design guidelines.

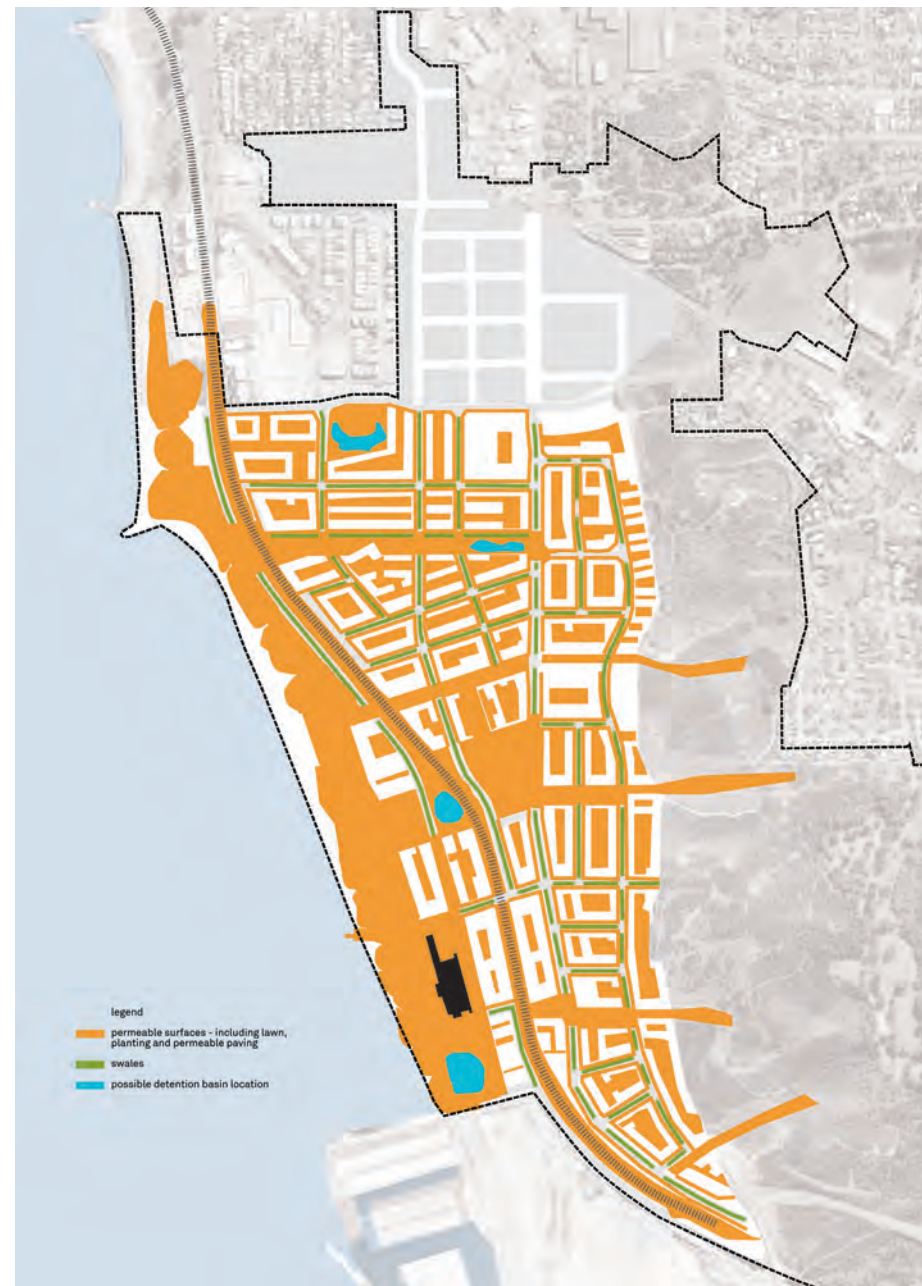


Figure 43_Water Sensitive Urban Design

5.3.9 Irrigation Requirements

The diagram below provides a conceptual overview of the proposed irrigation scheme based on the function and type of different open space proposed within the Plan. Predominant use of endemic native planting minimises water consumption and also provides habitats for native wildlife. Irrigated turf areas require higher water needs than native planting; therefore they are strategically placed in active areas where they will be well utilized by the community.

Irrigation requirements within the foreshore reserve will be subject to a Foreshore Management Plan

Figure 44 illustrates a high level approach to irrigation. The ultimate approach will be subject to future Local Water Management Plans.

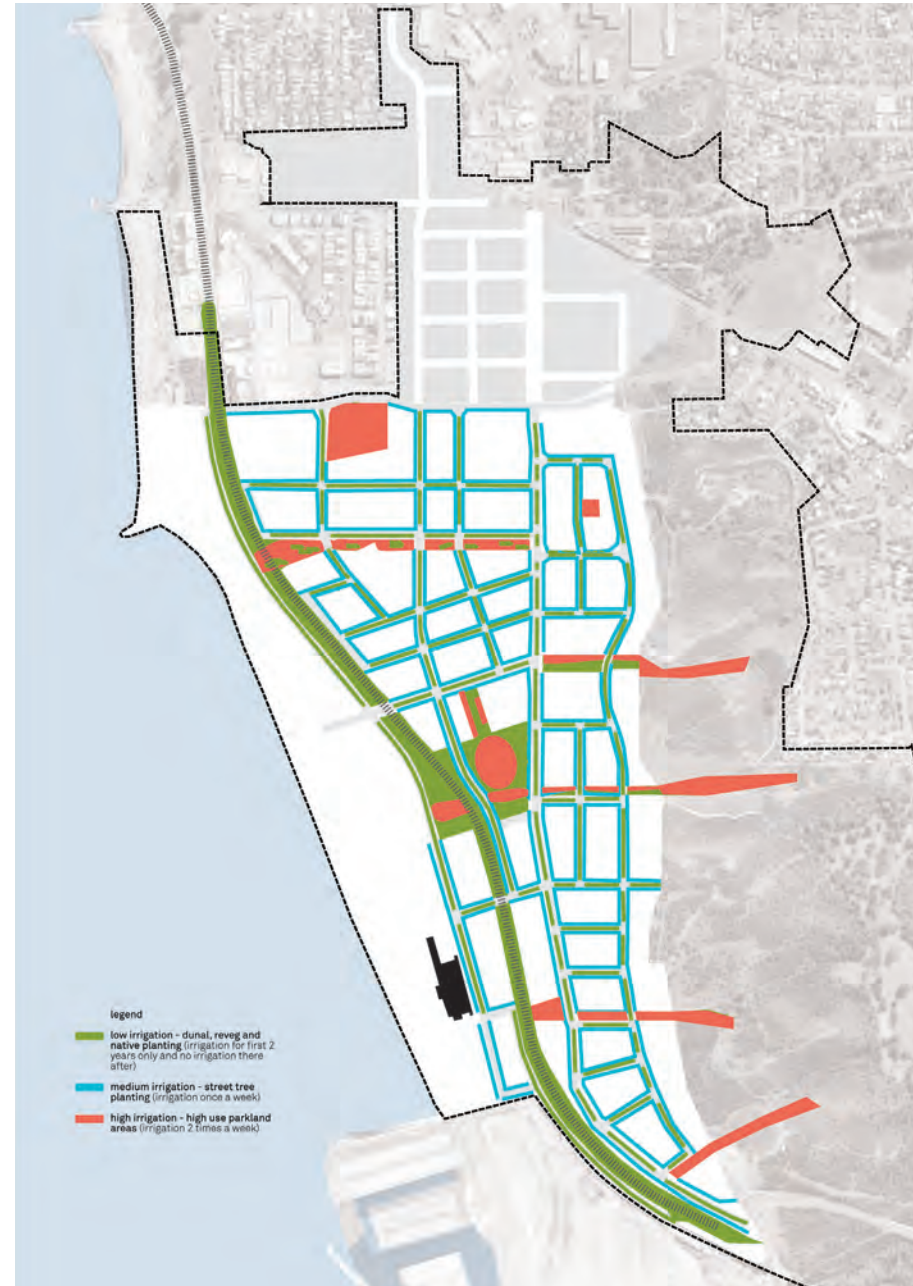


Figure 44_Irrigation Requirements

5.3.10 Landscape Elements

The network of open spaces underpin the economic, socio-cultural and environmental functionality of our cities and towns—i.e. the green spaces and water systems which intersperse, connect and provide vital life support for humans and other species within our urban environments.

Figure 45 below conceptually illustrates the potential network of open spaces across the project area.



Figure 45_Green Infrastructure

5.0 The Plan

5.3.11 Parklands and Recreation

Cockburn Coast will be home to a variety of parkland spaces to cater for children, youth, families, adults, individuals and tourists. Parklands will have facilities such as playgrounds and skate parks for children and youth of all ages, shelters, amenities, community allotments, seating areas and bbq and picnic facilities.

Key parklands are located on the coast at the Power Station, Robb Jetty Beach, Catherine Reserve and along the four green corridors running east to west through the development.

Parklands are to provide “backyards” to those living in apartments with minimal courtyard spaces and places for visitors to enjoy.

All streets adjacent to parklands are paved to slow vehicle movement to provide a safe play environment.

Crime Prevention Through Environmental Design (CPTED) principles will be adapted in all public areas .

5.3.12 Active Streets and Plazas

Streets such as Robb Jetty Road and Robb Road are to be active places populated by local commercial business and apartments. These streets are to be the primary shopping, eating and meeting places for local residents, workers and visitors to Cockburn Coast.

Plazas such as Robb Jetty Plaza and Power Station Plaza are to be flexible spaces to allow activities such as performances, outdoor cinema, markets and seasonal events and festivals to occur. They can be activated by kiosks, cafes, seating areas and playful elements such as interactive water features.

5.3.13 Dunes and Bushland

Cockburn Coast is unique in that it is located between Beelie Regional Park to the West and Cockburn Sound to the East.

Beelie Regional Park is part of an integral network of wetlands providing habitat to a number of native fauna and migratory birds. Vegetation of Beelie is that of the Swan Coastal Plain, predominantly characterised by Melaleuca shrublands and Tuart and Acacia Woodlands.

The existing dunes and bushland adjacent to Cockburn Sound are fragile and dispersed.

The proposed Master Plan aims to conserve and reinstate existing dunal and bushland areas to provide a stronger green corridor link between Beelie Regional Park and the Coast, provide habitat to endemic fauna whilst enhancing the character unique to that of Cockburn Coast.

Refer to section 6.3.17 for a list of endemic plant species.



Parc Andre Citroen in Paris



Schouwburgplein Plaza in Rotterdam



Bushland in Beelie Regional Park looking down at the Power Station

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5.3.14 Pocket Parks

Pocket parks provide intimate, flexible spaces within urban environments. They can function as lunch time spaces, or resting points, provide alfresco seating for cafes or cater for outdoor events such as outdoor cinemas or small performances

They should have a distinct local feel that enable local residents and workers to have a strong sense of ownership and belonging.

These pocket parks should offer a variety of scaled spaces that allow for quiet contemplation where one or two people can sit and larger scale spaces where small children can play safely. They should offer shade, seating and other pedestrian amenities as well as provide the opportunity to occupy the space year round and at all times of the day

5.3.15 Laneways

These normally service orientated spaces can become places themselves.

Laneways should be lively and safe spaces where an intimate atmosphere is created that still permits a high level of amenity to the normal activities usually associated with laneways. They should offer the opportunity to enter commercial, retail and residential spaces but also become places in their own right where activities such as alfresco dining, seating and gathering at all times of the day and night can be catered for.

A strong sense of security through passive surveillance should also be enabled through the design of the adjacent built form facades / entries and allowing for lighting to the laneway and adjacent entrances and exits to the built form.

5.3.16 Private Open Spaces

Private open spaces will enable a strong sense of amenity for the residents that live within the high density developments.

The atmosphere of these spaces should enable a feeling of sanctuary but also a strong sense of ownership and community within a community where neighbours are able to use shared facilities such as tennis courts, swimming pools, bbq areas and courtyard spaces.



Paley Park, New York is an example of a pocket park within an urban environment



Degraives Laneway, Melbourne illustrates how a laneway can be activated



A private courtyard space

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5.3.17 Vegetation

A key component of the Master Plan is to provide green links connecting Beelie Regional Park to the Coast, this can be achieved by protecting and reinstating the existing dunes and bushland areas and providing connected planted areas within the streetscape and parkland areas.

Vegetation is not only important aesthetically to the appearance of a space, it also reduces the heat island effect created where there are large areas of hard surfaces, provides habitats and food for wildlife and is important in the cleansing of pollutants in the air and water.

Street Planting

Streets are to have their own planted identity and character which provides interest and also assists with wayfinding throughout the development. Street planting consists of street tree planting, median planting, rain gardens which capture stormwater runoff, and planting to soften and break up car parks and parking bays. Street trees are to be planted on all streets and planted where there is a central planted or paved median.

Planting Palette

The proposed planting palette is to be predominately endemic plant species to the area, plants native to Western Australia as well as exotic feature trees which are adapted to the climatic conditions of Cockburn Coast.

Endemic plants are most suited to the area as they are well adapted to the soil types, climatic and watering conditions. This means they will grow strong and healthy and have a high rate of success whilst providing habitat and food supplies to native fauna. Endemics plant are also aesthetically attractive and will contribute to the unique character that is Cockburn Coast.

Swales and Detention Basin Planting

Swales and retention basins which capture stormwater runoff are to be planting with native planting which are suited to both wet and dry conditions to cleanse water before it reaches the ocean and ground water aquifer. Swales are located in planted medians, car park planting, street planting and parklands.



An example of a detention basin



Coastal revegetation planting



Planted swale median

5.0 The Plan

5.3.18 Planting Guide

Endemic Trees (Native to Cockburn Coast)



Agonis flexuosa Acacia rostellifera Banksia attenuata Banksia ilicifolia Banksia menziesii, B. ilicifolia, and B. grandis. Callitris preissii Corymbia calophylla Eucalyptus gomphocephala Eucalyptus decipiens Eucalyptus marginata Eucalyptus rudis Melaleuca lanceolata Melaleuca preissiana Melaleuca raphiophylla

WA Native Trees



Allocasuarina fraseriana Banksia littoralis Corymbia ficifolia Eucalyptus platypus Eucalyptus victrix "Little Ghost Gum" Eucalyptus macrocarpa "Mottlecah" Eucalyptus caesia "Silver Princess" Eucalyptus wandoo Hakea laurina Nuytsia floribunda Xanthorrhoea preissii

Australian Native Trees



Angophora Costata Casuarina equisetifolia Corymbia citriodora Corymbia maculata Melaleuca quinquenervia

Exotic Trees



Araucaria heterophylla Pinuspinea Delonix regia Erythrina indica Ficus rubiginosa Metrosideros excelsus Olea europa Phoenix canariensis

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Planting Guide

Endemic Shrubs (Native to Cockburn Coast)



Acacia rostellifera Dryandra sessilis Grevillea thelemanniana Hakea prostrata Hibbertia hypericoides, Melaleuca acerosa Melaleuca huegelii

Endemic Dunal Vegetation (Native to Cockburn Coast)



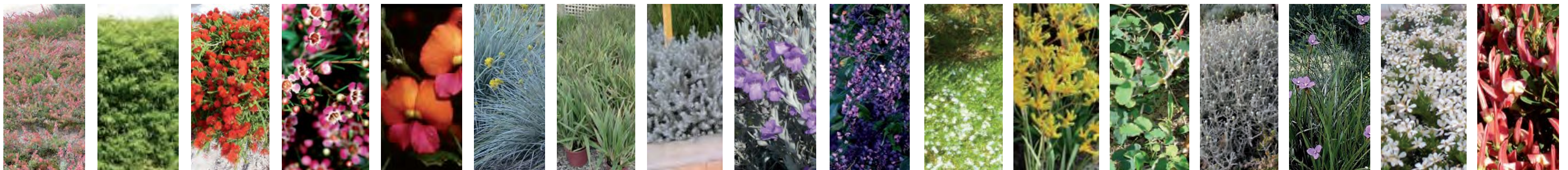
Lepidosperma gladiatum Scavolea crossifolia Spinifex longifolia Spinifex hirsutus

WA Native Dunal Vegetation



Acacia lasiocarpa Atriplex insatidea Carpobrotus virescens Ficinia nodosa Olearia axillaris

WA Natives Shrubs



Adenanthos cuneatus Agonis flexuosa "nana" Beaufortia Chamelaucium varieties Chorizem cordatum Conostylis candicans Dianella revoluta Eremophila "Kalbarri Carpet" Eremophila nivea "Spring Mist" Hardenbergia comptoniana Hemiandra pungens "Snakebush" Kangaroo Paw Varieties Kennedia prostrata Leucophyta brownii Patersonia occidentalis Ricinocarpos cyanescens Templetonia retusa

Swale and Retention Basin Planting



Baumea articulata Baumea vaginalis Bolboschoenus caldwelli Carex inversa Carex appressa Frankenia pauciflora Gahnia trifida Hypocalymma angustifolium Juncus kraussii Juncus pallidus

5.0 The Plan

5.4 Character Statements

5.4.1 Cockburn Coast Foreshore

The coastal foreshore represents a unique opportunity to reinstate a north-south linkage of dunes and dunal vegetation in an otherwise generally degraded section of coast as a result of past industrial and human activity.

This section of coast has a historical connection with human activity, associated with the Power Station, Robb Jetty and Aboriginal use of the site. Therefore, it is appropriate, in a historical context, to reinstate activity at key nodal points along the beach. Coastal activity nodes are identified at Catherine Point, Robb Jetty and in front of the Power Station.

The Indigenous and European historical association and use of this coast will play an important role in informing future development and activity. For instance, Robb Jetty represents a place of positive interaction between the indigenous population and the Robb Jetty site, with many indigenous people being employed at Robb Jetty.

It will also be important to retain and rehabilitate the dune system to create a strong north-south environmental and pedestrian link through the site.

The conceptual landscape and public infrastructure represented in this Master Plan along the foreshore is indicative only and illustrates the opportunity and intent to focus public activity at Catherine Point, Robb Jetty and at the South Fremantle Power Station site. This is in accordance with the principles contained within the District Structure Plan. It is important to acknowledge that the coastal foreshore design will be informed by the following studies and will also be subject to approval by the relevant authorities:

- Coastal Foreshore Management Plan
- Coastal Hazard Risk Management Assessment, detailing the following:
 - Care, control, maintenance and management requirements for coastal protection infrastructure along the coastline over a 100 year timeframe
 - Reinforcements that are required to existing and new infrastructure, agency responsibility for undertaking these works and likely costs.

The Coastal Hazard Risk Assessment would need to be prepared prior to, or concurrently with, the foreshore management plan to ensure a comprehensive plan is developed for the foreshore. Refer Figure 46.



Figure 46_Coastal Foreshore



Physical development at any point within the foreshore will be subject to further planning and consultation to enhance and protect this important ecological, recreational and movement corridor



Retention and rehabilitation of the foreshore dunes will be an integral component and focus within the Foreshore Management Plans



Concept Plan of portion of the Coastal Foreshore Reserve adjacent to the Power Station

5.0 The Plan

5.4.2 Green Corridors

The green corridors are an integral structural component of the Plan. They will facilitate east-west pedestrian and cycle movement and provide a physical and ecological connection between the foreshore and Manning reserve.

The green corridors play an important role in bringing the beach and coastal experience into the development through appropriate landscaping, planting, public art and other treatments.

A shared path for cyclists and pedestrians allows safe passage through the development east to west. All streets adjacent to green corridors are shared surface paved streets to slow traffic and allow pedestrian priority and permeability to parkland spaces. Key linkages within these green corridors could include heritage trails that allow the user to explore the rich cultural and historical heritage of Cockburn Coast.

Green corridors are community open spaces playing the role of a backyard for people living in apartments. They will provide a range of facilities and functions, and these will be developed further in consultation with the City at the Local Structure Planning Stage. Activities may include:

- Picnic and BBQ areas
- Children’s play areas
- Community allotments/Community Gardens
- Recreational facilities
- Open parkland spaces
- Bushland, dunal and native planting

Water Sensitive Urban Design Principles (WSUD) will be adapted in the green corridors, with the aim of catching water locally and promoting infiltration. Public art, place making, event programming and way finding strategies will enhance these spaces and make them enjoyable places to recreate in.



Figure 47_Green Links



Concept Plan of green spine

Above: Green corridors will accommodate a variety of functions and activities, and will be the principal place of recreation alongside the beaches

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58 5.4.3 Power Station Activity Centre

*The Power Station will be the primary and ultimate employment hub for Cockburn Coast. It will be an important commercial, recreation and prime visitor destination through historic interpretation and story telling, which will complement and not detract from, the local retailing and small scale commercial opportunities that will be provided along the Robb Jetty Main Street.

In this regard, built form around the Power Station Precinct will be the most intense and urban node in Cockburn Coast incorporating contemporary buildings, shared streets, public plazas and a revamped Power Station building, which will accommodate a range of commercial, civic and community functions.

The Precinct will need to have a strong built form presence, given that it is located at the southern entrance into Cockburn Coast and interfaces with Port Coogee. This is achieved by high quality architectural form and larger buildings.

There is a potential to further explore a public marina which would further consolidate the built form opportunities to activate the Power Station building. It is anticipated a marina facility would enable additional

infrastructure and commercial opportunities to contribute to the viability of redevelopment of the precinct and wider Cockburn Coast.

A public marina is contemplated as an opportunity to enhance the Power Station Precinct, but would need to be subject to detailed investigation, negotiation, design and approvals prior to being realised.

A protected family beach will provide informal recreational activities to complement the intensity of commercial development and the tranquil feel of the marina.

A waterfront promenade connects the Power Station to Port Coogee and Robb Jetty Plaza with shade and resting points along the way. Open parkland areas with bbq and picnic facilities are adjacent to the waterfront.

Plaza spaces interact with the Power Station providing spaces for alfresco dining and other activities for families to enjoy such as interactive water features.

*The Power Station and potential Marina is subject to additional consideration processes including, but not limited to:

- Lifting of MRS Urban Deferred,
- Submission, assessment (including community consultation) and approval of a local structure plan for the Power Station Precinct discussing:
 - Environmental feasibility (impacts upon the marine environment including relationship to other coastal features and
 - Social feasibility



Figure 48_Power Station Activity Centre



Concept drawing of Power Station Boardwalk



Example of mixed use activated frontages

5.0 The Plan

5.4.4 Robb Jetty Plaza

Walking west along Robb Jetty Main Street will take you to Robb Jetty Plaza which is the key plaza of Cockburn Coast situated right against Robb Jetty Beach. Its beach front location provides 180 degree panoramic ocean views yet it is protected by small scale buildings, such as eateries and boutique shops from the strong prevailing south-westerly summer winds.

Robb Jetty Plaza is to provide a flexible space for activities such as markets, alfresco dining, concerts, outdoor cinema, performances and seasonal festivals to occur.

Cultural opportunities, such as a small gallery or event space, may be considered.

An iconic jetty which is an artistic interpretation of the old Robb Jetty will provide a historical journey from the plaza to the ocean.

Planting and canopy structures provide shade and protection from the wind and seating elements are for people to relax and enjoy the views.

Catenary lighting provides interest and allows the space to be used day and night.



Example of activated plaza



Figure 49_Robb Jetty Plaza



Indicative Visualisation of Robb Jetty Plaza



Concept Plan of the potential for Robb Jetty Plaza to interact with the foreshore

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5.4.5 Catherine Point Reserve Activity Node

Catherine Point is a popular beach and therefore the built form will celebrate its location. A small cafe kiosk or other commercial/community on the beach at the western end of Rollinson Road. This opportunity will establish a community focal point during the initial phases of development will encourage accessibility and activity on the coast. The building will be low scale and minimise disturbance to the beach.

The beach is to have a local, casual feel to that of the existing character. Beach access paths will lightly touch the ground protecting and allowing the revegetation of the existing fragile dunal systems. An open parkland space with barbecues facilities and shelters will provide a place for the community to gather. A Pedestrian and cycle network will connect Catherine Point Reserve with South Beach to the north and Robb's Jetty Beach to the south.



Unique East Beach cafe design, UK



Figure 50_Catherine Point Activity Node



Indicative Visualisation of Catherine Point Reserve facing West



Concept Plan showing potential boardwalks and community building at Catherine Point Reserve

5.0 The Plan

5.4.6 Cockburn Road

Cockburn Road will be upgraded to a four lane district distributor road to ensure traffic and transport associated with existing businesses can continue to operate during the transitional phases of redevelopment. The upgrade will include paving and landscaping treatments to ensure Cockburn Road also promotes pedestrian and cyclist activity during this transitional phase.

Ultimately Cockburn Road will be re-configured into a two-lane road which carries local traffic at low speed. Boulevard planting will provide a strong landscape theme and will assist to slow vehicles. Built form fronting Cockburn Road will be of a human scale and provide awnings and canopies to provide protection from the elements for pedestrians. Where there is commercial activity, some residential development will occur at ground level along Cockburn Road to be setback to provide appropriate street front curtilage. A 2 m wide cycle route will allow for safe passage of cyclists along Cockburn Road.

The configurations shown are illustrative of how the transition could be accomplished while maintaining a constant right of way width and setting the kerbs and drainage once.



Figure 52_Cockburn Road - 26m Road Reserve
Showing two lanes on Cockburn Road which is the ultimate scenario



Figure 53_Cockburn Road location

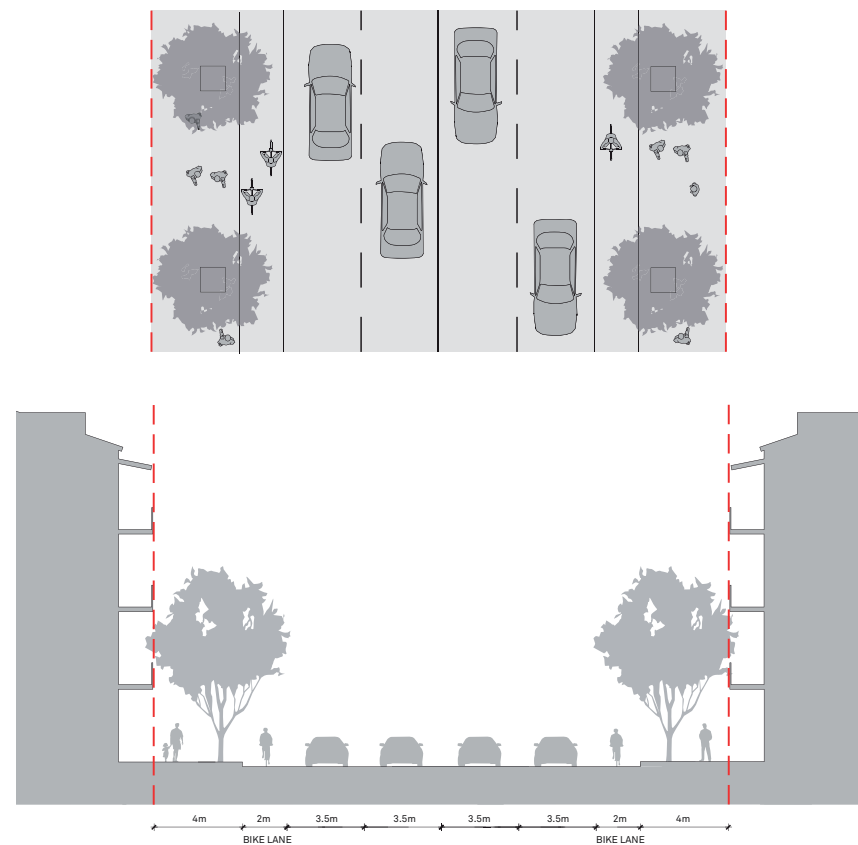


Figure 51_Cockburn Road - 26m Road Reserve
Showing a possible future scenario with four lanes of traffic



Indicative visualisation of Cockburn Road as a two lane road

5.0 The Plan

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5.4.7 Robb Jetty Main Street

The heart of the Robb Jetty precinct will be the main street populated by local shopping, a supermarket, cafes, small scale offices and apartments. The Robb Jetty main street will be the primary shopping and meeting place for local residents, but will also provide eateries, community facilities and other infrastructure to also service workers and visitors to Cockburn Coast.

The Robb Jetty main street will culminate at an urban style beach plaza east of the existing rail reserve, which will provide a focal point for community activity and is envisaged to provide community infrastructure such as an amphitheatre, kiosk(s), a restaurant, boardwalks and public art.

The proposed rapid transit alignment will have a designated stop adjacent to the Robb Jetty Main Street to further focus activity and maximise accessibility to services.

An urban style local primary school with adjacent active playing fields will be located on the southern side of Main Street and will positively contribute to the diverse range of activities provided at the heart of Robb Jetty.

The street is to be a paved shared surface treatment, promoting pedestrian permeability and priority. Alfresco areas along the street edge activate and provide interest along Robb Jetty Road. Street tree and native planting provide shade and reduce the heat island effect. Seating and canopies along the street provide resting points.

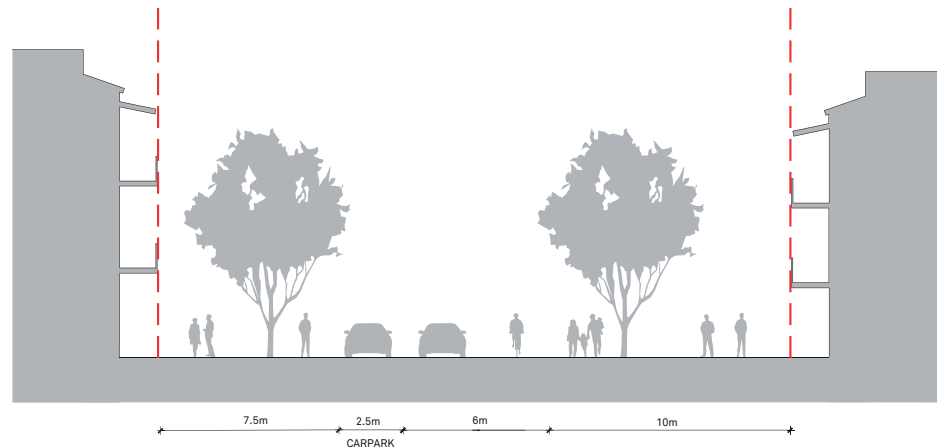
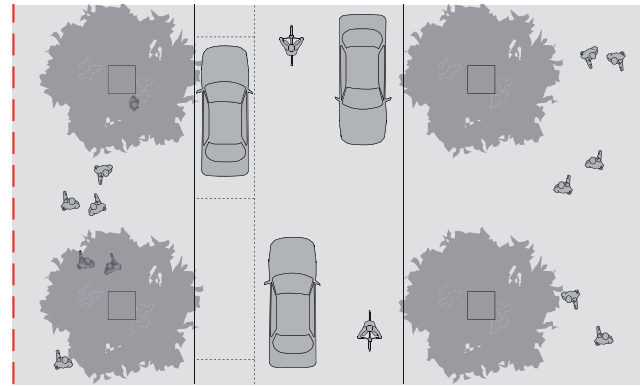


Figure 55_Robb Jetty Road - West - 26m Road Reserve



Figure 57_Main Street location

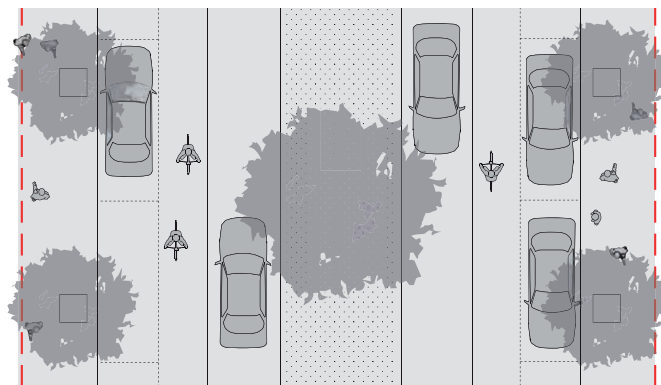


Figure 54_Robb Jetty Road - East - 26m Road Reserve



Figure 56_Indicative Visualisation of Robb Jetty Road looking east from the plaza space

5.0 The Plan

5.4.8 Robb Road

Robb road is a slow paced shared surface street running north -south adjacent to Cockburn Sound reserve providing access to the key coastal nodes and connecting Cockburn Coast with Port Coogee to the south. It is one of the main cycle routes connecting Cockburn Coast to Fremantle in the north and Port Coogee and Kwinana to the south whilst providing a coastal experience.

Robb Road - North

The northern part of Robb Road is characterised by a railway reserve on the east and by Cockburn Reserve to the west. Pedestrians and cyclists have priority to allow safe permeability from the east of the development to the coast.

Coastal street tree planting and resting points make Robb Road a pleasurable coastal experience

Robb Road - South

The southern section of Robb Road will be an active, urban, commercial street with restaurants, cafes and boutique shops opening onto the street making it a place for the community, workers and visitors to gather, shop and eat.

Development on both sides of the street allows the street to be protected from the strong summer south/south westerly winds whilst openings between buildings provide the opportunity for ocean views.



Figure 60_Robb Road location

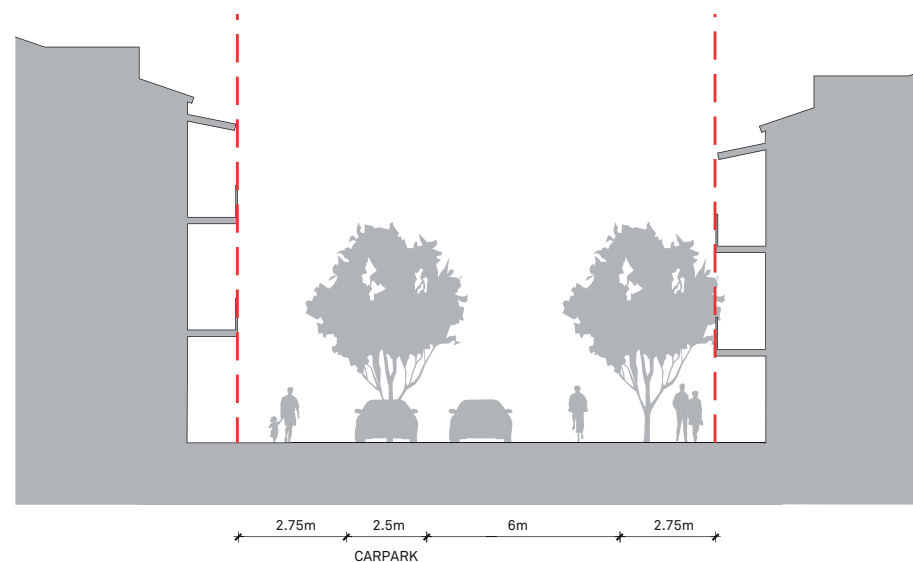
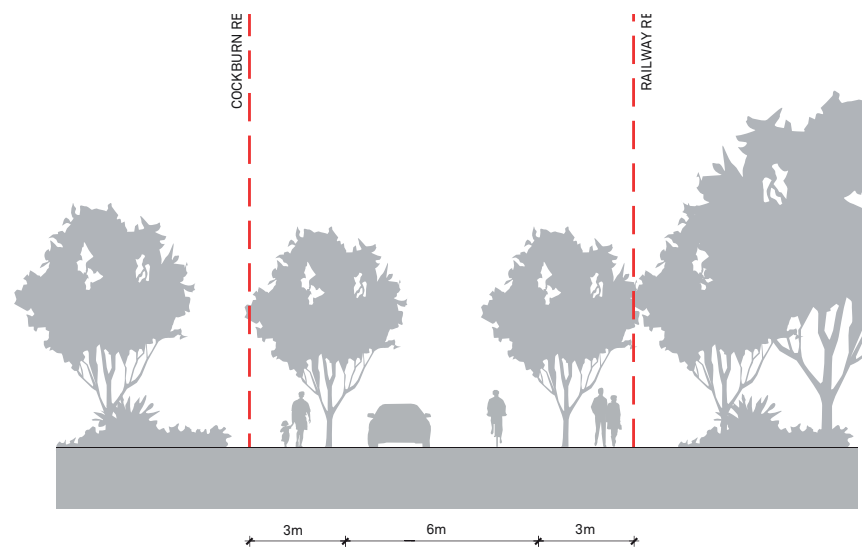
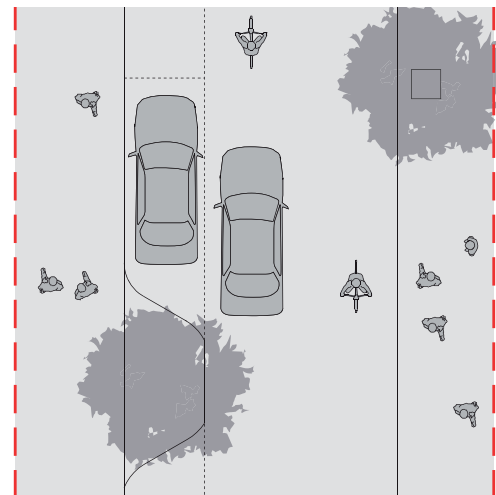
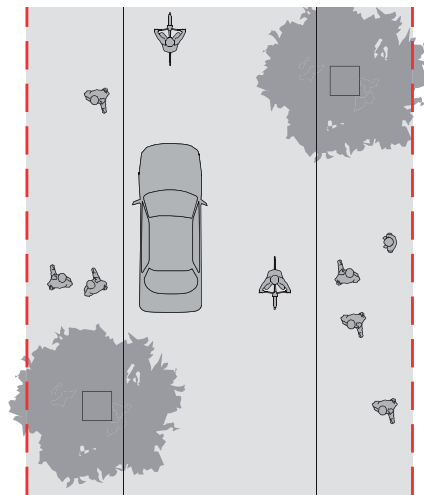


Figure 58_Robb Road - North - 12m Road Reserve which is a shared surface treatment

Figure 59_Robb Road - South - 14m Road Reserve which is a shared surface treatment



Example of a shared surface street where vehicles and pedestrians share the street

5.0 The Plan

5.4.9 RBT/LRT Alignment

The RBT/LRT Alignment runs north - south through the centre of the development promoting ease of movement throughout Cockburn Coast. The future RBT or light rail transport route is proposed to run along this road which will provide public transport for a wide catchment area, accommodating the entire population of Cockburn Coast. The RBT or light rail will share the lane with vehicular traffic which still enables this road to have an intimate street feel.

Wide pedestrian paths and cycle lanes allow safe passage for cyclists and pedestrians to travel along this road. Street trees will provide shade and native swale planting in the central median will capture any stormwater runoff.

5.4.10 Local Streets

Local streets are slow paced minor streets that generally have a low flow of traffic with parallel parking for residents and visitors. The slow pace promotes pedestrian permeability and priority across the streets and allows cyclists to share the street with vehicles.

Street trees provide shade and native swale planting in the central median will capture any stormwater runoff.



Figure 63_RBT/LRT alignment

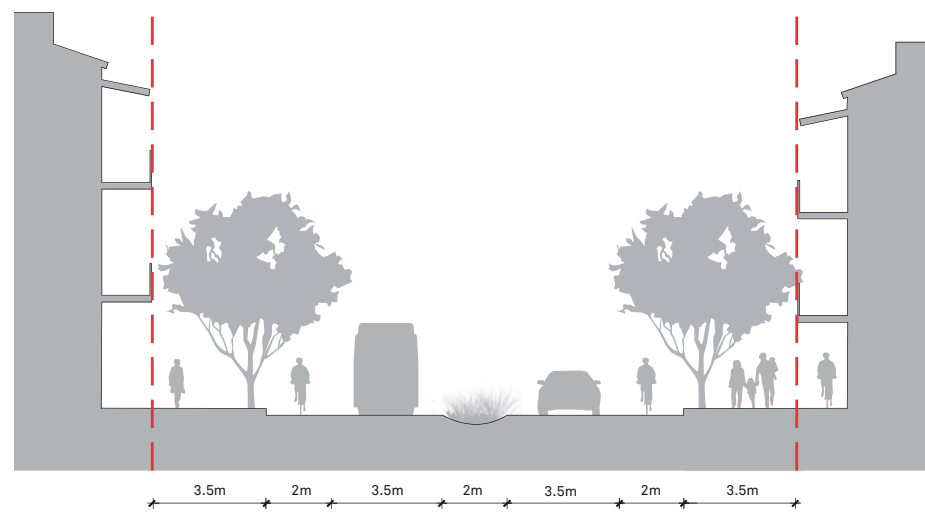
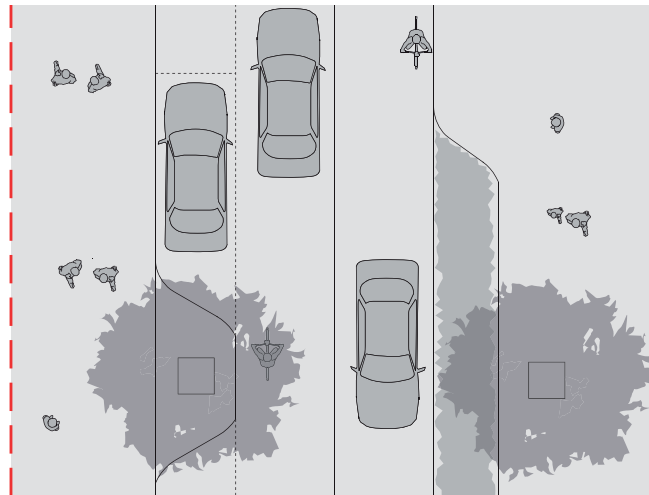
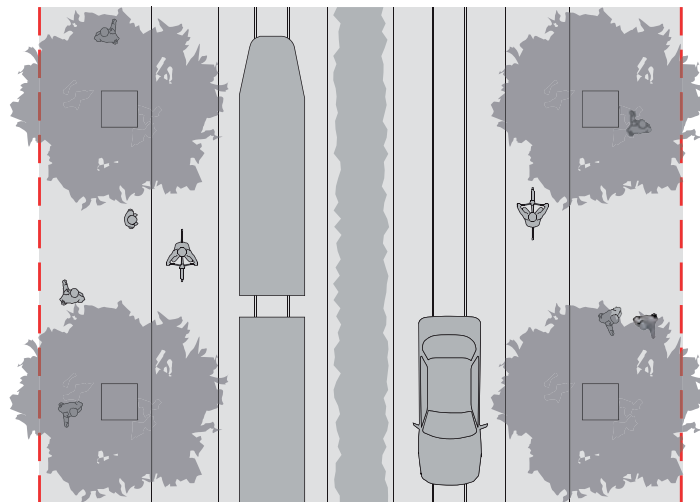


Figure 61_LRT/BRT Alignment Road - 20m Road Reserve

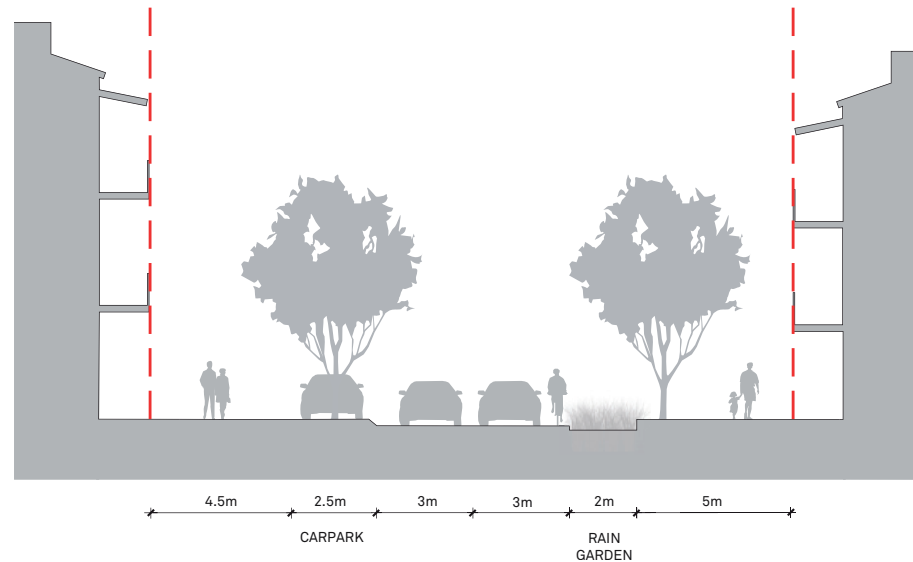


Figure 62_Local Street - 20m Road Reserve



Example of a shared vehicle /light rail street