

PUBLIC SPACES DESIGN GUIDELINES

July 2013

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Figure 1: Collaroy Rockpool

PART A

INTRODUCTION

A.1 PURPOSE

The Warringah Design Guidelines for Public Spaces has been prepared to provide a set of objectives and principles to assist both Council and Consultants to achieve continuity in the design and quality of Warringah's streetscapes and public spaces.

These guidelines also ensure the desired future character of the Local Government Area is reflected in the public domain, providing guidelines for the design of streetscapes and open space areas.

The Design Guidelines updates and supersede earlier public domain guidelines and should be read in conjunction with other necessary Council policies.

A.2 WHY UPDATE THE GUIDELINES

The Warringah Design Guideline: Public Spaces (WDG) was adopted by Council in May 2003.

It is timely to review the Guideline to test the principles formulated in the original document some ten year ago. Additionally, Council has placed greater focus on community engagement in the shaping of Warringah over recent years and has also improved its asset management systems.

The updated WDG seeks to align community expectations with asset management processes. In doing so, the Guideline will guide the creation of a public domain which is both functional and contributes positively to the overall image of Warringah.

A.3 SCOPE

These Design Guidelines apply to all areas within the Warringah Local Government Area to achieve a co-ordinated and consistent palette of materials and long-term maintenance benefits. Areas within National Parks are the responsibility of the NPWS, and are exempt from these Guidelines.

A.4 POLICY CONTEXT / FRAMEWORK

The Design Guidelines should be read in conjunction with a collection of policies and guidelines which form a holistic vision for Warringah. Other Codes to refer to include:

- Warringah Development Control Plan, 2011
- Warringah Local Environment Plan, 2011
- Asset Management Policy, 2012
- Warringah Pedestrian Access and Mobility Plan, 2011



Figure 2: Narrabeen Beach Lookout

- Warringah Recreation Strategy, 2009
- Warringah Reconciliation Action Plan
- Draft Freshwater Village DCP, 2012
- Graffiti Policy, 2010
- Public Art Policy, 2008
- Community Engagement Policy, 2011
- Warringah Community Strategic Plan, 2011
- Warringah Bike Plan

Asset Management Strategy and Plans, 2010

During the process of updating the Design Guidelines, it became apparent that two other areas of investigation and guidelines are required; guidelines governing public buildings and facilities in open space, and updated street tree and planting master plans and details. It is recommended that these studies be completed to be read in conjunction with this guideline.

A.5 HOW TO READ THE GUIDELINES

The Design Guidelines outline Warringah Council’s vision for all public spaces, streetscapes and parks and reserves and describes how the quality and elements within these can enhance public life. They also provide a strategy for the application of these objectives and components in the design and construction of the Warringah’s streets.

This includes;

- A defined hierarchy of streetscape types, parks and reserves and a nominated ‘typical palette’ of materials and elements for each type of public space;
- A set of design objectives and principles for the key elements within the public domain, and methods in which they may be implemented;
- Opportunities for overlays of unique responses to special places within Warringah’s public spaces.

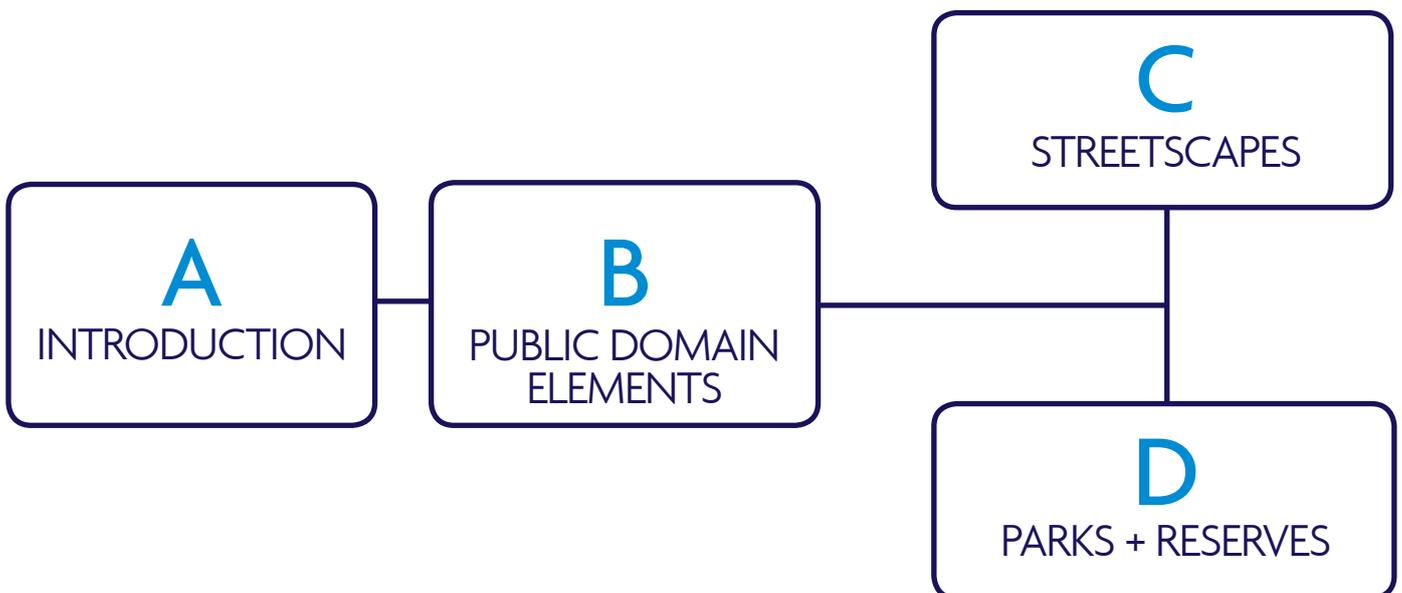


Figure 3: Design Guidelines document structure

A.6 THE IDENTITY OF WARRINGAH

The Warringah LGA encompasses a diverse range of natural landscapes creating regions of distinct and varied local character. The region encompasses bushland, rural-residential lands, beachside suburbs and lagoon frontages.

The character of the combined bush and beach environments is highly valued by both the residents and Council.

Council's Community Strategic Plan encapsulates the Warringah Community Vision as;

"A vibrant community, improving our quality of life by living and working in balance with our special bush and beach environment."

This assists in defining Warringah as an active, vibrant and engaging community that encourages a healthy lifestyle. Some of the recent projects currently under development include;

- The completion of the Narrabeen Lagoon Multi-use trail;
- The implementation of Warringah's Bike Plan
- Implementation of synthetic turf on many sporting fields to cater for demand and improve sustainability;
- The inclusion of outdoor exercise stations at beachfront reserves and associated sporting fields;
- Improvements to the Warringah Aquatic Centre.

A.7 FUTURE MOVES

Currently Warringah has a contract for supply for many of the public domain elements, including the benches and bus shelter.

Any change to the suite of furniture elements should;

- Be of a contemporary aesthetic;
- Be uniquely recognisable as a 'Warringah' suite;
- Respond to the hierarchy of spaces and streets within the LGA as set out by this document;
- Be of a high quality;
- Be robust and appropriate for the site conditions;
- Be sustainably sourced and locally produced where possible.



Figure 4: Pittwater Road, Narrabeen

A.8 KEY OBJECTIVES FOR PUBLIC SPACES

Increase Public Domain Quality

High-quality public spaces are critical in providing liveable and sustainable urban environments. The Design Guidelines promote:

- Materials of high quality that ensure longevity and durability
- A public domain that provides high amenity and comfort for it's users
- A unified palette of high-quality materials and finishes for the public domain of the Warringah LGA
- A positive contribution to the visual quality of Warringah.

Promote Sustainability

Public spaces offer great opportunities to contribute to the sustainability aspirations for Warringah. These can be achieved through:

- Integrating Water Sensitive Urban Design (WSUD) into the streetscapes and public open spaces to reduce run-off and stormwater loads, and treat pollutants
- Maintaining and respecting existing bushland corridors as important wildlife corridors and natural biodiversity assets
- Building on the existing bicycle network and pedestrian footpaths to reduce the reliance on vehicular travel and reduce carbon emissions
- Protecting and encouraging the retention of the existing villages and strip shops, to reduce the need for residents to rely on vehicular transport to access local services.



Figure 5: Dee Why Beach



Figure 6: Pittwater Rd, Narrabeen

Enhance Community

Public spaces are vital in promoting healthy and engaging communities. The Design Guidelines promote:

- All streets and public spaces are designed, where possible, to meet Australian Standards and best practice for access for all abilities
- Providing opportunities for gathering (where appropriate and safe to do so) and community engagement within streetscape and public spaces
- Supporting local business and village locales through recognition of local commercial precincts.

Respect the Bush and the Beach Character

The character of the bush and the beach environments are highly valued. The Design Guidelines promote the following:

- Recognise and protect the unique landscape qualities in Warringah; it's proximity to both bush and beach
- Encourage the use of open spaces through carefully considered design, whilst ensuring protection of significant bushland, waterways and dune landscapes.



Figure 7: The Strand, Dee Why Beach



Figure 8: South Curl Curl Bicentennial Coastal Walkway



Figure 9: Freshwater

PART B PUBLIC DOMAIN ELEMENTS

B.1 INTRODUCTION

This section provides principles and objectives for the range of elements and materials used within public spaces. The palette aims to promote a cohesive character and identity throughout the public domain of the Warringah LGA, reflecting the streetscape and open space hierarchies. These objectives include:

- To unify like-spaces throughout the LGA through a consistent materials and elements palette;
- To provide a clear hierarchy of quality to reflect popularity of use and maintenance regimes;
- To consider sustainability objectives in materials and elements selection, including embodied energy, life cycle costing and provenance;
- To use the palette to unify street and open space types whilst allowing for variations in elements to celebrate and reflect unique localities within Warringah.

B.2 GATEWAY CORRIDORS

Gateway corridors are the primary arterial routes through Warringah, characterised by high vehicular traffic, increased speeds, signalised intersections and wider carriageways. They are the key public transport corridors that facilitate access to bus transportation.

These are located on RMS (Roads and Maritime Services) managed State roads and include gateway interpretive markers to mark boundaries. Design principles for Gateway Corridors include:

- To create characteristic visual points of entry to the Warringah LGA;
- To encourage connectivity and provide wayfinding for cyclists and vehicular traffic throughout the LGA;
- To provide planting to landscape zones that support endemic vegetation communities whilst encouraging pedestrian safety and sightlines.

B.3 GATEWAY MARKERS

Along gateway corridors, entry points to the LGA provide opportunities for unique interpretive elements to define and introduce the Warringah identity. There are 11 defined gateway points including:

- Mona Vale Road, St Ives;
- Warringah Road, Forestville;
- Wakehurst Parkway, Seaforth;
- Burnt Bridge Creek Deviation, Manly Vale;
- Pittwater Road, Queenscliff;
- Greycliff Street, Queenscliff;
- Ocean Street, Narrabeen;
- Pittwater Road, Narrabeen;
- Wakehurst Parkway, Narrabeen;
- Mona Vale Road, Ingleside;
- McCarrs Creek Road, Ku-ring-gai Chase
- Condamine Street, Manly Vale



Figure 11: Wakehurst Parkway



Figure 12: Gateway Entry, Pittwater Rd, Narrabeen

B. PUBLIC DOMAIN ELEMENTS

The design principles for these gateways include;

- Entry points to Warringah will be distinctive by their strong visual presence and prominent location.
- They will be more sophisticated than simply a sign beside a road and will consist of elements that transmit information on the immediate local character.
- They will be typically vegetative in character, with reference to rocky headlands, forest trees and local culture. Each will occupy considerable space in order to establish their visual presence for drivers travelling at the speed limit.
- Gate markers should be developed in accordance with Council's Style Guide.

B.4 SUBURB IDENTIFICATION

Suburbs in Warringah will be identified by a sign with the name of the suburb displayed. The type and nature of the sign should be provided in accordance with Council's Style Guide. The current signs are:

- Located within a vegetated setting where possible
- Be of lesser visual prominence than the Gateway signage
- Be located to be easily legible from a passing car
- Be located so as not to obstruct the path of pedestrian or cycle travel
- Opportunities for incorporating suburb signs into existing natural features, such as rock outcrops, can be investigated as a way to express the local character of the locality.
- Be designed and located in accordance with Australian Standards
- Be located only on Regional roads
- For suburbs off Gateway Corridors (Dee Why, Brookvale, Belrose, Terrey Hills)



Figure 14: Dee Why Suburb Sign

Figure 13: Gateway Marker, Pittwater Rd, Narrabeen

B.5 HIGH PROFILE SPACES

Within the streetscape and public open space arrangements of Warringah, areas of significant prominence and use provide opportunities to create spaces of unique character, with variation from standard materials and fixtures.

Utilised for major community and high-profile events, these spaces create an identity for Warringah and assist in attracting people locally, as well as from further abroad, into the region.

The development of a custom furniture, lighting and paving palette assists in denoting the spaces as iconic. Fixtures and finishes in these zones should reflect the high-use and occupation of these places, as well as maintenance regimes.

Key design considerations within these spaces should include:

- Providing a palette of high-quality materials, furniture and fixtures with custom elements that caters for the high level of usage and prominence within the region;
- Allowance for public art opportunities that respond specifically to the locality, where applicable;
- Feature tree plantings of appropriately selected species;
- A range of seating edges, low walls, raised decks and turf areas to provide areas for different sized groups to gather;
- Interpretive and directional signage where required located adjacent to main path of travel.
- Explore the creation of attractive natural theatres that make collective social spaces for special events
- Incorporation of three-phase power supplies into the space to support community activities
- Consideration for heavy vehicle access to allow rigged stages, access points for utility services, vehicles and waste
- Appropriate placement and access for waste and servicing during and after events
- Design considerations given to visitor traffic and event signage, including promotional banners and wayfinding
- Access to appropriate site controlled lighting.



Figure 15: Custom foreshore treatment, Dee Why Beach

B.6 SAFER BY DESIGN

Crime Prevention Through Environmental Design (CPTED) principles promote and support positive and desirable use of open space and should be applied holistically throughout Warringah.

Risks to the community can be reduced through sensible design, lighting and landscaping. Active planning that incorporates safety can lead to reducing opportunities for criminal behaviour and improving perceptions of safety in the community.

B.7 INCLUSIVE ACCESS

Inclusive access applications are required in compliance with the relevant legislation, the Australian Standards, and the Warringah Pedestrian Access and Mobility Action Plan, 2011.

The development of Council's public domain ensures accessibility for all members of the community where practicable. For example, this may include;

- The provision of luminance contrast at stairs
- The provision of bollards and safety railings
- The provision of tactile ground surface indicators and paving treatments
- The provision for pram ramps
- The alignment of path of travel and pram ramps, where possible

B.8 PUBLIC DOMAIN FURNITURE

Public domain furniture elements form an integral part of the public domain identity, reinforcing the character of Warringah. They provide important amenities for pedestrians and add functionality and vitality to the public realm.

To read as a co-ordinated family of elements, and achieve a coherent character, furniture needs to be consistent in colour, form and detailing. Location of furniture of elements needs to be mindful of access for maintenance vehicles.

Adshel/ Town and Park Furniture has a current contract for supply of many of the public domain elements for Warringah. This contract will be up for renewal in July 2013. It is recommended that suite of furniture be reviewed at that time to achieve a more contemporary and unique palette appropriate for the entire Warringah LGA.



Figure 16: Tactile indicators, Dee Why Beach



Figure 17: Custom bike racks, Dee Why Beach

B.9 UTILITIES

Utilities in the streetscape consist of utility poles, overhead wires, surface pits and electricity kiosks. These should be efficiently located to minimise impacts on other existing or potential streetscape elements, maintain basic access and maintenance requirements.

Consideration should be given of under grounding of overhead services where feasible to main streets to reduce visual intrusion and provide optimum conditions for street trees. Aerial Bundled Cable (ABC) is also appropriate for other streets to reduce impact on tree canopy. Where practical, pit lids should consist of paving inserts consistent with the paved footpath finish.

B.10 SIGNAGE

A co-ordinated suite of signage is an important component in achieving legible and quality public open spaces.

Where appropriate, signage elements, both wayfinding and interpretative, should be integrated in the public domain and existing site features to minimise clutter in the public domain. Applications can include paving inlay, signage attached to buildings, attachment to existing poles or fence rails.

Signs should be constructed from a durable material that is easy to clean and graffiti resistant, and meets Council's longevity requirements.

Signs to comply with Council's style guide for types and use of markers, street signage, gateway entry markers, interpretative signage guidelines and any other signage.



Figure 18: Stormwater pit lid integrated artwork, Dee Why Beach

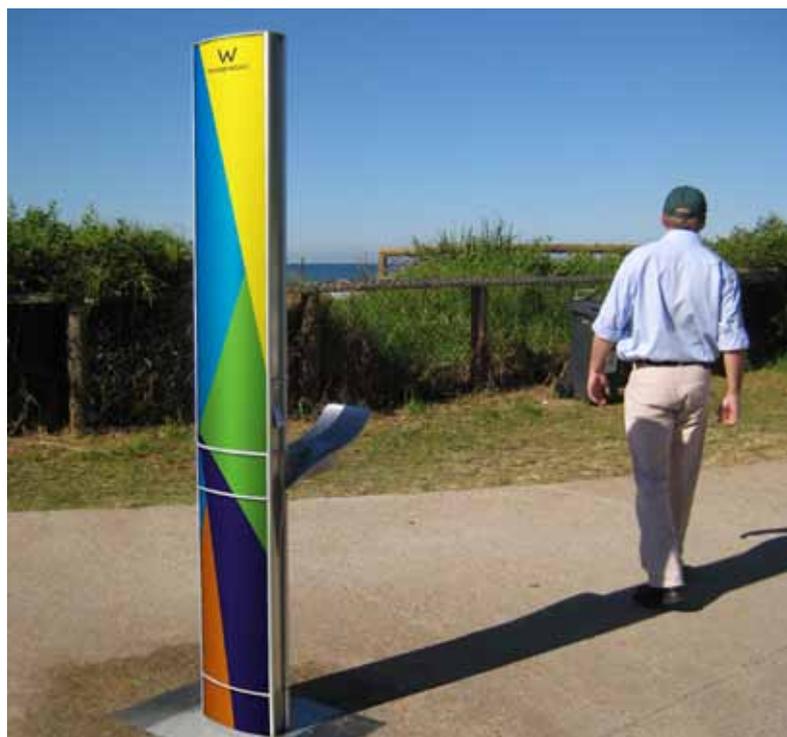


Figure 19: Water Fountain, Dee Why Beach

B.11 PAVING + GROUND MATERIALS

Paving and ground surface materials should form a consistent palette that creates a clear, coherent public domain structure, and provides a unified recognisable character to reinforce open space and streetscape hierarchies.

Within the Warringah LGA a coherent paving palette will create a high-quality pedestrian environment with materials that are robust, durable and easy to maintain. Materials should also reflect public space context and existing pavement type, and reflect the Design Guidelines streetscape and open space hierarchies.

B.12 FOOTPATH COMPONENTS

Footpath components includes kerbs, junctions, kerb extensions, driveways, and pedestrian ramps. All components should be designed in accordance with the Warringah Pedestrian Access and Mobility Plan, 2011. (PAMP)

Footpaths and Kerbs

The pedestrian area of the street is for pedestrian activity. Ancillary uses such as eating, sitting and socialising can be accommodated in appropriate locations if space and safety issues allow. A unified palette of paving and kerb materials creates a consistent streetscape structure and accentuates the visual continuity of the street.

Footpath Material Junctions

Footpath junctions at street corners and intersections where two different materials meet will emphasise the streetscape hierarchy.

Pavement material of the priority street (main street) should continue around the corner of a block to strengthen the connection across the roadway. A logical termination of paving types can be the radius transition point or building property line.

Kerb Extensions

Kerb extensions are expansion of the footpath and kerb line into the road lane adjacent. Generous kerb extensions may allow opportunities for landscaping, seating, outdoor dining, bicycle parking and stormwater management as well as enhance pedestrian safety by increasing pedestrian visibility, shortening crossing distances, slow turning vehicles, and visually narrowing the roadway. Kerb extensions also allow for street tree planting where awnings extend to the kerb. Materials should form a seamless whole, matching existing features and materials of the footpath environment. The design of the kerb extensions should be considered in relation to stormwater infrastructure, cleaning vehicle access and traffic management options during road works. Safety fences may be required if outdoor dining is intended.

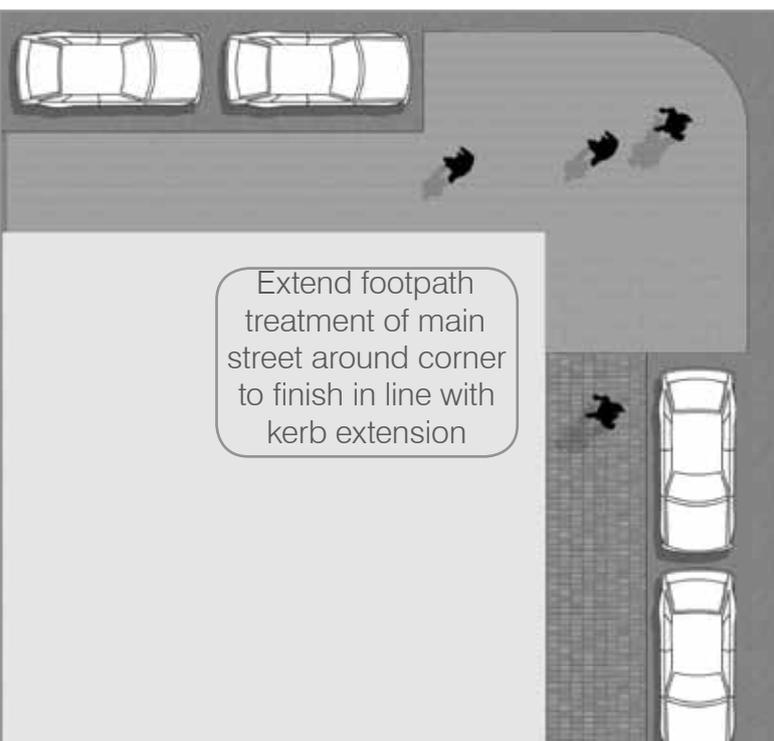


Figure 20: Pavement interface; Freshwater

Driveways

Driveways are to be constructed in plain concrete, and are to be identified with tactile indicators for the visually impaired. There may be opportunities where footpath materials extend over the driveway zone. In this instance, the pavement material is to be an interlocking paver (appropriate for vehicular loads) of colour and finish to match the adjacent footpath paver.

Kerb Radii

Tighter kerb radii is to be used at street intersections to slow turning vehicular traffic, shorten pedestrian crossing distances and increase pedestrian visibility where possible. Limitations that need careful consideration include the turning paths of buses and other heavy vehicles.

Pedestrian Ramps

Pedestrian ramps must be installed at all intersections and mid block locations where pedestrian crossings exist. Orientation of ramps must meet accessibility standards to ensure safe passage of persons with visual or physical impairments across the street. Pedestrian ramps

are either coloured apricot concrete, in contrasting colour to adjacent paving (to meet luminance contrast) or installed with tactile indicators in accordance with the PAMP.

B.13 RAISED PEDESTRIAN CROSSINGS

Raised pedestrian crossings improve accessibility and contribute to reduced traffic speeds. They may be used on two lane, two way streets in strategic locations to assist in enforcing speed limits (eg. 40kph high pedestrian activity zones).

They should not be used in isolation and must be differentiated by material, colour and lighting. When used in combination with kerb extensions the crossing width is also reduced. A marked foot crossing requires the approval of Council's Traffic Committee



Figure 21: Pavement interface; Freshwater

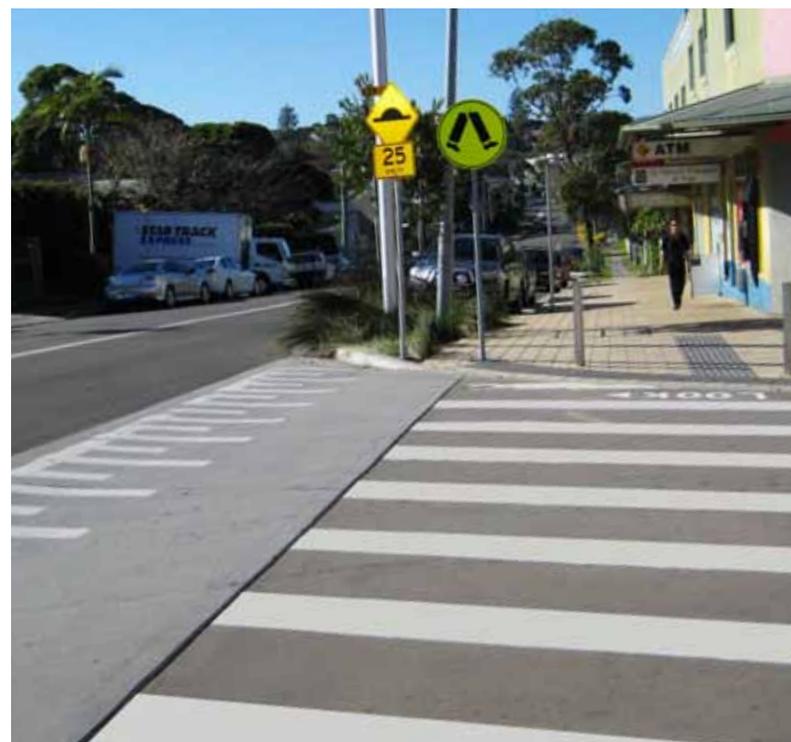


Figure 22: Raised pedestrian crossing, Freshwater

B.14 BICYCLE NETWORK

Warringah Council has developed a comprehensive bicycle network strategy to provide facilities for cyclists of all abilities.

The level of provision for different types of cycleways will depend on local conditions, route priority and traffic management. The selection of an appropriate treatment type for routes is a function of a number of parameters including carriageway width, anticipated bicycle volumes, vehicle traffic volume and local conditions.

The requirements of the Warringah Bike Plan will be accommodated in future works where appropriate. Refer to the Warringah Council Bike Plan and contact Council for further information.

B.15 STREET + PARK TREES

Tree planting in public spaces provide environmental quality, mitigate the potential for urban heat island effects, enhance visual continuity and unity, and reinforce local identity and character. All street tree pits require connection to the stormwater network.

Key components include:

Tree Species Selection

Appropriate tree selection, location and installation treatment will ensure the healthy growth and long term benefits for the streetscape as well as assisting the mitigation of the urban heat island effect in urban areas.

Whilst there is a strong preference for the use of endemic tree species in Warringah to enhance remnant forests and native fauna species, other criteria should be considered including:



Figure 23: Cycle infrastructure, Narrabeen



Figure 24: Planting character, Collaroy Beach

- Existing planting
- Frangibility
- RMS requirements and driver sight distances
- Conflicts with above and below ground services
- Soil conditions
- Measures to manage or reduce root damage of paving such as root control barriers
- Tree species selection and the proximity of tree planting to carriageways to be mindful of access by maintenance and service vehicles

Selection of tree species will be in accordance with the Warringah Council Street Tree Master Plan. Contact Council for further information.

Tree Base Treatments + Guards

Tree base treatments will vary according to location and context of the surrounding footpath material palette. No timber surrounds will be used in any tree planting application.

Tree base treatments should be optimised to ensure tree health, minimise root interference and consider providing trafficable area around tree base through use of porous pavements and grills to capture stormwater runoff.

Other Applications

Tree planting in roadways provides the opportunity to increase the tree canopy particularly in situations where awnings or overhead wires constrain the establishment of medium to tall trees on the footpaths.

Tree surrounds shall be designed to incorporate WSUD to receive water runoff from surrounding roads and footpaths, and to treat stormwater for reuse and/or discharge to receiving waters

For these applications, Warringah Council approval is required for tree surrounds that incorporate WSUD to determine feasibility/ applicability for use.



Figure 25: Tree pit, Freshwater



Figure 26: Planting character, bushland setting Narrabeen Lakes

B.16 WATER SENSITIVE URBAN DESIGN (WSUD)

Utilising WSUD initiatives reduces the extent of hard surfaces, assists in the treatment of stormwater runoff and can contribute to irrigation of landscape areas, whilst assisting the management and protection of the catchments within the Warringah LGA.

WSUD treatments in the roadway should be implemented wherever it is deemed appropriate to enhance place making, livability, aesthetics, urban heat island mitigation, natural corridors, in addition to improving eco-system services.

A range of typical WSUD treatments which could be considered within public spaces include residential runoff systems, cascading systems, reverse bio-filtration systems, dry creek beds and permeable pavements.

Use of WSUD devices will be assessed by Warringah Council on a case-by-case basis to ensure appropriateness and fit for purpose. In addition to the stormwater management role, all of these systems should be designed to be integral, aesthetic parts of the streetscape.



Figure 27: WSUD swale, Richmond Ave Carpark, Dee Why

B.17 LANDSCAPE TREATMENTS

Landscape treatments complements street trees and add vibrancy and diversity to the public spaces. Landscape treatments should provide planting that supports endemic vegetation communities. Non-natives should be considered where endemic alternatives are not appropriate. Considerations for other landscape treatments include:

Verge Treatments

Planted or turf verge treatments are promoted to reduce the extent of paved surfaces and provide separation between the footpath and the roadway. The location of planted verges needs consideration to ensure access to parked cars and utilities is maintained. Species selection should support endemic vegetation communities whilst ensuring pedestrian safety and sightlines are maintained.

Median Planting

Opportunities exist on low traffic roads to provide planted medians within the road carriageway. These can assist in softening hardstand where wide carriageways exist and can contribute to improving pedestrian safety by deterring informal crossing.

Permeable paving

Permeable pavements are supported in areas that are appropriate to the management of stormwater run-off, such as areas adjacent to bushland or waterways. Selection should be mindful of maintenance regimes, longevity and aesthetics.

B.18 LIGHTING

Lighting within public spaces helps to define a positive urban character and supports night time activity and safety. All public domain lighting should be in accordance with relevant Australian Standards. Care must also be taken to ensure any lighting does not have an adverse effect on adjoining residences whilst still providing safe and appropriate lighting outcomes. Consideration for lighting opportunities will include:

Street Lighting

Street lighting, including roadway, pedestrian and cycleway lighting, used in conjunction with street trees as an organising element establishes the rhythm of the streetscapes. Generally street lighting is to be in accordance with Ausgrid and relevant Australian Standards. Options for energy efficient lighting should be investigated where possible.

Urban Plaza Lighting

Lighting to urban plazas and spaces adjacent to retail and outdoor dining assists in creating opportunities to encourage night activity and promotes safe urban spaces. Consideration should be given to dimmable fittings to provide lower lighting levels during dining hours and increasing to provide a well-lit pedestrian zone after-hours.

Public Reserves Lighting

Lighting to parks and reserves is to comply with Australian Standards and focused on primary pedestrian paths through the space.

Lighting to Special Areas

Within the Warringah LGA custom lighting may be considered for areas of special significance. Any suite of lighting shall still reflect council principles of durability and appropriateness and should be decided in consultation with Council.

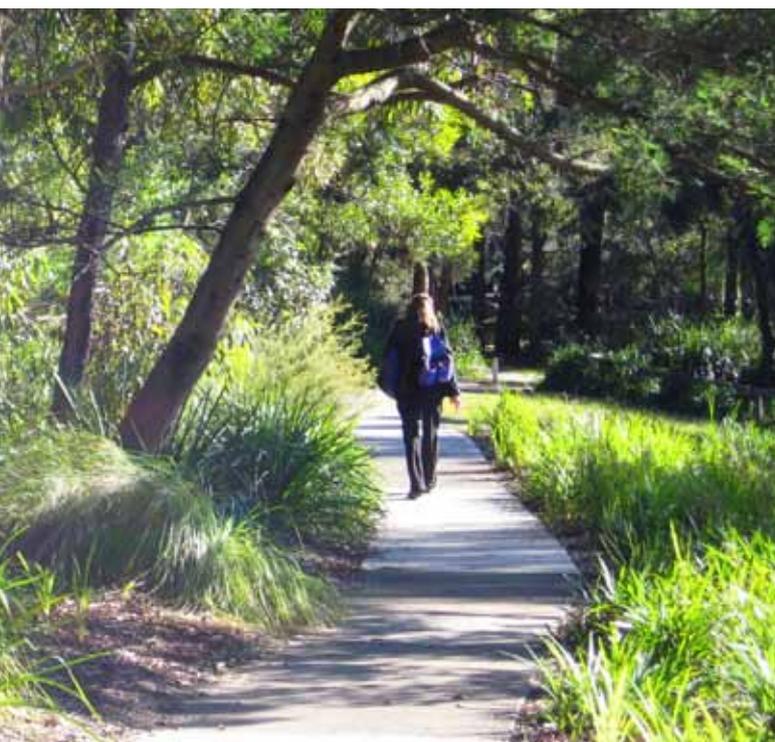


Figure 28: Indigenous parkland planting, Manly Dam



Figure 29: Custom lighting, Dee Why Beach

B.19 PUBLIC ART

Public art is an important aspect of major public space design projects. On a large scale, public art has the ability to unify a district with a theme or identify a neighbourhood gateway. At a pedestrian scale it can assist in way finding and provide visual interest for passersby.

Public art can imbue beauty and symbolic meaning as both independent installations and into functional objects such as seats, grates, railings, to create a sense of place and identity.

Public art can be broadly separated into 3 types;

1. That which is created by professional artisans;
2. That which is made by community groups and individuals, facilitated by artists or creative workers;
3. That which is commercially made.

Each 'type' of art has its place within Warringah public domain. Where appropriate, public art should be considered into the preparation of concepts for streetscape and open space improvements. Key to the implementation of public art is the consideration for longevity and durability, and ongoing maintenance costs. Public art proposals will be subject to Warringah Council approval process outlined in the Warringah Council 'Public Art Policy 2008'.



Figure 30: Public art, Narrabeen



Figure 31: Long Reef Headland Art Installation



Figure 32: Long Reef Headland Art Installation

B.20 OUTDOOR DINING

Outdoor dining is a key component of delivering lively and engaging urban areas, and assisting with activation of public spaces both during day time and night time hours.

It is recognised that not all public spaces are suitable for outdoor dining and each location shall be treated on its merits to ensure safety of restaurant patrons and access for pedestrians.

Within the Warringah LGA outdoor dining opportunities should support inclusive access and design quality.

For further information refer to Warringah Council's 'Outdoor Eating Area Policy,' or contact Council.

B.21 BUS SHELTERS

Bus shelters within the streetscape provide important environmental protection and seating opportunities for public transport commuters. The form and elements of these structures should reflect the street or open space type, as well as use. The colour of metal works should match other streetscape elements.

The location of bus shelters should be outside the main path of pedestrian travel and should minimise clutter on streets and within public spaces. Bus shelters located at high volume bus stops along key arterial roads should reflect the needs of commuters including visual permeability and safety.

Bus shelters shall be designed and allocated to ensure compliance with standards for accessible public transport (DSAPT) and AS. Contact Warringah Council for further information on Bus Shelters and suppliers contract.



Figure 33: Outdoor dining, Collaroy



Figure 34: Outdoor Dining, The Strand

B.22 SMALL BUILDINGS + STRUCTURES

Small buildings and structures include park amenities and storage facilities. Consideration in design should be given to:

- Providing amenities that respond directly to demand, both now and in the future
- Providing opportunities for adaptability and multi-use
- Ensuring safety and surveillance
- Providing equal access, and logical connections from other facilities (such as amenities building, car park or kerb)
- Ensuring that the structure is aesthetically pleasing and has a relationship to any other existing structures in the park.



Figure 35: Bus Shelter, Griffin Rd, Dee Why



Figure 36: Amenities building , Narrabeen Beach

LEGEND

- Town Centres
- Village Centres
- Local Areas
- Business Parks/ Industrial Areas
- Non-urban Areas
- Suburb Boundaries

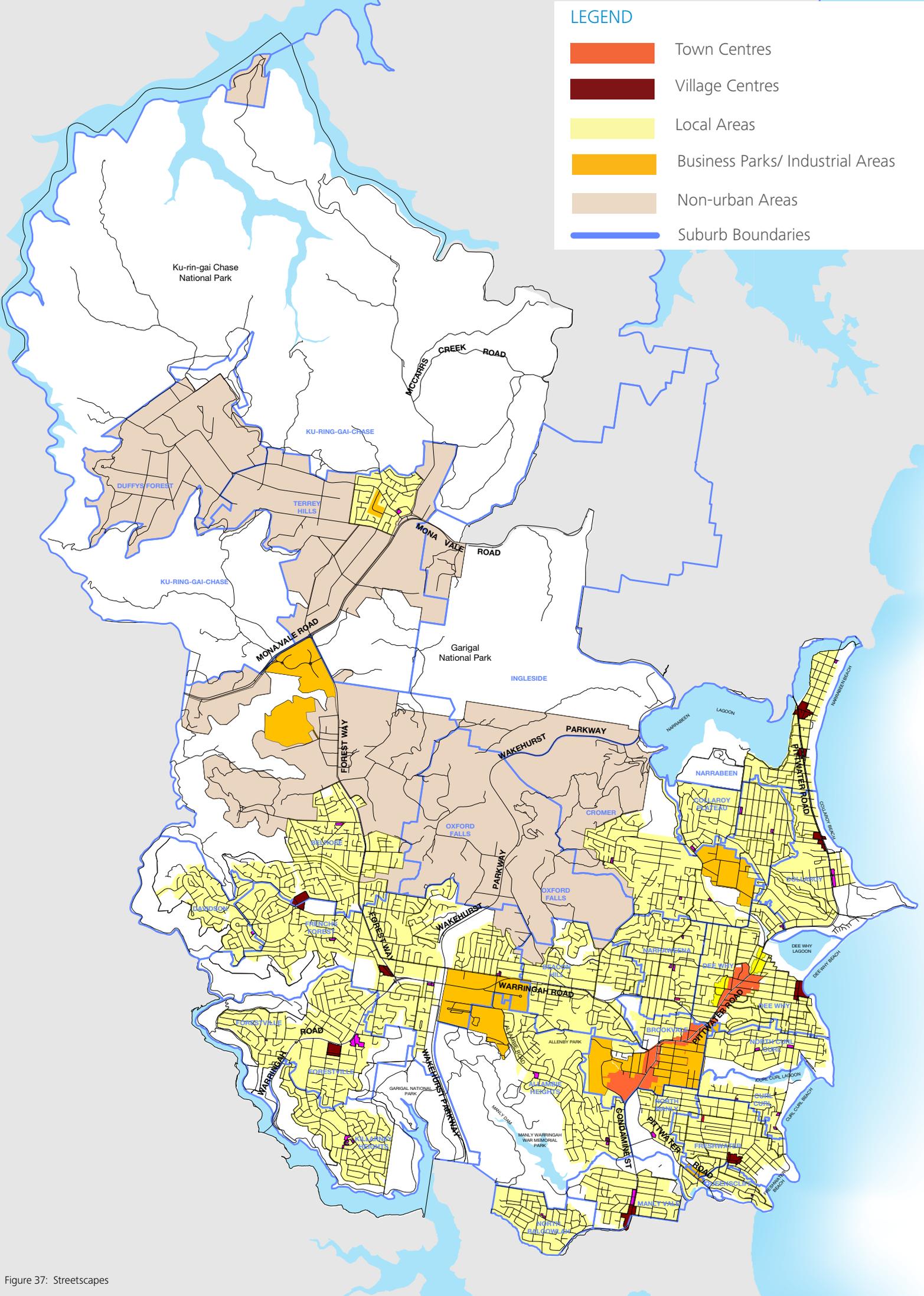


Figure 37: Streetscapes

PART C

STREETSCAPES

Town Centres

Primary regional activity hubs, providing access to services, employment, retail, and entertainment. Street types may vary within these, however a unified palette of materials and furniture will provide a continuity between the spaces.

Village Centres

Local retail and commercial hubs, typified by small businesses, boutiques, cafes, restaurants and local services providers. Street types within these zones are designed to provide for potential outdoor dining and streetscape activation.

Local Areas

Typified by low density residential streets and strip shops containing small retail stores, small cafes and local businesses. Majority streetscape typology within Warringah.

Business Parks / Industrial Areas

Important employment hubs, creating commercial opportunities within the greater Sydney Region.

Non-Urban Areas

Areas include remnant bushland areas, rural residential developments, hobby farms, and small-scale agricultural productions. Roads are typically of a rural standard and access to property may include unformed crown roads

NOTE:

DECCW - National Parks and Wildlife Service (NPWS) manages all National Park estate.

RMS is generally responsible for roads within national parks, with the exception of Cottage Point Road and roads within the suburb of Cottage Point.



Figure 38: Town Centres

C.1 TOWN CENTRES

INCLUDES

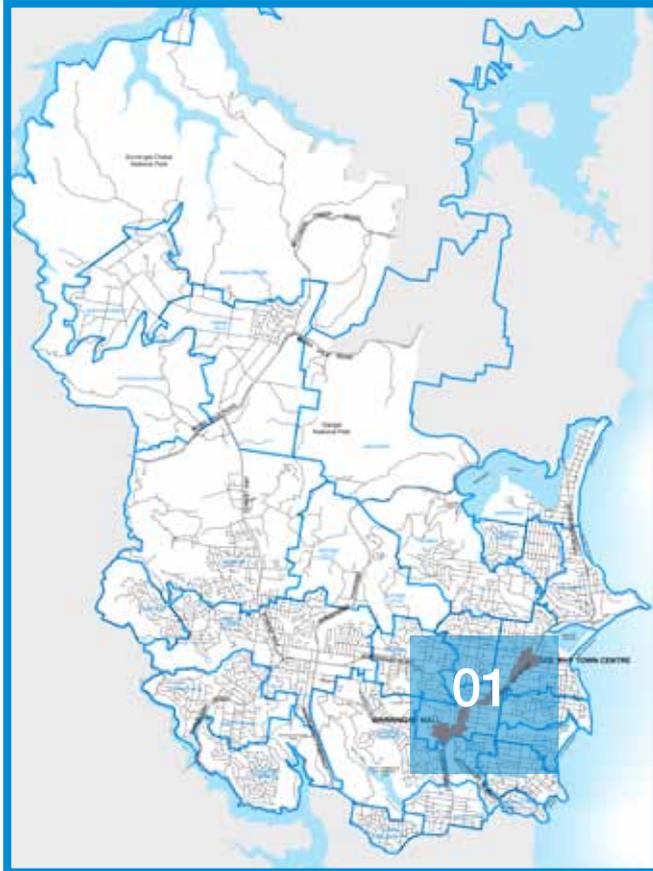
- Dee Why Town Centre
- Warringah Mall
- Brookvale Employment Centre

C.1.1 DESIGN PRINCIPLES

Town Centres are the primary regional activity hubs, providing access to services, employment, retail, and entertainment. Street types may vary within these, however a unified palette of materials and furniture will provide a continuity between the spaces. Design principles for Town Centres include:

- Encourage pedestrian use of public spaces through footpath widening and outdoor dining implementation;
- Provide a high-quality material and furniture palette that responds to high pedestrian use and amenity;
- Encourage paved plaza areas that provide gathering spaces for community events;
- Provide planting to landscape zones that support endemic vegetation communities whilst encouraging pedestrian safety and sightlines.

KEY PLAN



LEGEND

- Town Centres
- Suburb Boundaries

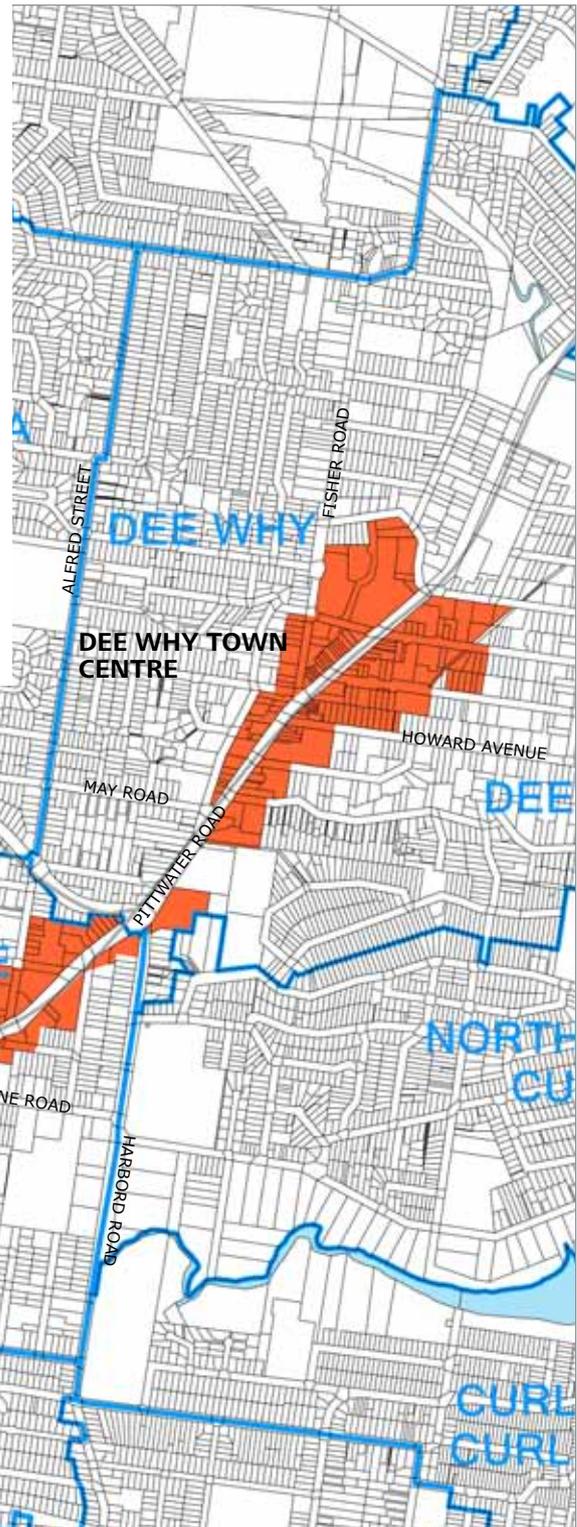


Figure 39: Town Centre Detail Area 01: Brookvale Employment Centre, Warringah Mall + Dee Why Town Centre

C.1.2 TYPICAL STREET

Typical streets within Town Centres are characterised by separated vehicular and pedestrian zones with on-street parking and cater for a high volume of traffic. Main streets accommodate a mix of commercial and retail with wider paved footpaths accommodating high levels of pedestrian activity. A typical street in a Town Centre includes;

- A minimum 1.5m wide footpath, unobstructed by planting, furniture or other elements
- A continuous avenue of street trees, maximum 10m regular spacing, and in alignment to adjacent footpath planting
- Provision of WSUD infrastructure, planted tree pits/ verge where possible
- Provision of footpath widening areas for additional street planting or outdoor dining
- High quality unit pavement extending from the building line to the kerb

- Bicycle infrastructure (bike racks, seats) provided at regular intervals along main cycle routes
- Public seats located at regular intervals
- Grouping of streetscape furniture elements adjacent to the kerb and outside of the main path of travel

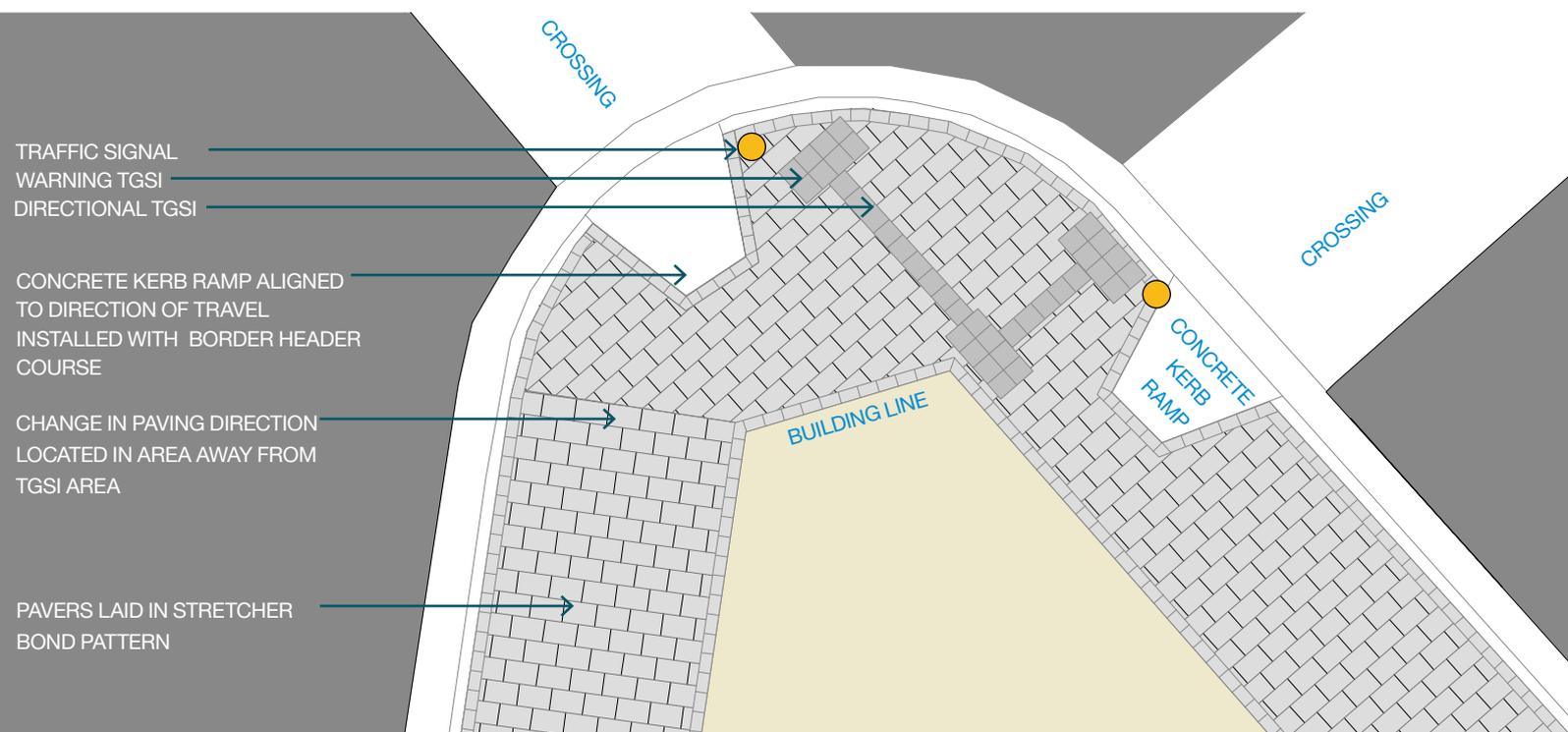


Figure 40: Dee Why Town Centre: Typical Paving Layout

C.1.3 CIVIC SPACES + SQUARES

Civic spaces within Town Centres support pedestrian life and community engagement and are crucial in creating active and social public spaces. They are defined by active frontages and should be designed to encourage groups to gather and linger. Civic squares consist of;

- A continued surface treatment that marries with the streetscape
- Additional tree planting of appropriately scaled trees
- A range of seating edges, low walls, raised decks and turf areas to provide areas for different sized groups to gather
- Street furniture elements grouped, and located outside of the main path of travel
- Directional and interpretational signage where required located adjacent to main path of travel
- Provision for public art where applicable should respond specifically to site

C.1.4 TYPICAL LANEWAY / MIDBLOCK CONNECTIONS

Laneways in Town Centres are small scale connections that carry low numbers of vehicles as well as supporting pedestrian connections. Pedestrian midblock connections encourage pedestrian permeability throughout public spaces and should be designed with;

- Adequate lighting, passive surveillance and low landscaping considerations to create safe and usable links.
- Opportunities for activation through outdoor dining, weekend markets etc
- Planted buffer and regular street tree planting where possible
- Continuation of the streetscape footpath material on road closures and midblock connections.



Figure 41: Dee Why Town Centre: Perspective image of future works

C.1.5 MATERIALS PALETTE

Paving + Ground Surfaces

Concrete Unit Paving



Refer Pavement layout diagram, Figure 40.

Colour: Infill pavers are to be provided in Urbanstone 'Albany Grey' (or approved equivalent)

Border header course: Laid parallel to the kerb and property line are to be provided in Urbanstone 200 x 200 'Albany Grey' (or approved equivalent)

Finish: Shotblast finish.

Size: 200x200, 200x400, 400x600 (40mm thickness) dependant on location and site topography
60mm thickness on vehicular areas

Installation: 30mm mortar bed, 3mm sand joint spacing, 20Mpa concrete slab base;

- Pedestrian areas: 75mm thick non-reinforced
- Light Vehicular traffic: 150mm thick reinforced with F72 mesh
- Heavy vehicular traffic: 180mm thick reinforced with F72 mesh

Dee Why Town Centre

(Main Streets, Civic Spaces and Squares, Pedestrian Laneways)

Brick Paving



Colour: Austral Brahman Granite Bowral Dry Pressed (or approved equivalent)

Size: 230 x 115 x 65mm

Pattern: Stretcherbond

Header Course: Austral Silver Sand Bowral Dry Pressed (or approved equivalent)

Single row installed perpendicular to kerb

Pittwater Rd in Brookvale TC only

Insitu Concrete



Finish: Light broom

Edges: 50mm wide edging tool

Joints: Installed at right angles to the outer edge of the path.

Expansion joints: 10mm thick, full depth of the slab using a preformed jointing material, intervals not greater than 4.8m .

Dummy joints: at intervals of 1.2m max. or equidistant between expansion joints, and also being equalised between vehicular entrances.

Brookvale TC

(Warringah Mall, Typical Streets, Civic Spaces and Squares, Pedestrian Laneways)

Dee Why TC

(Secondary Streets, Laneways)

ELEMENT	DESIGN NOTES	APPLICATIONS
Kerb, gutter and vehicular crossings		
	Refer to Council drawings; <ul style="list-style-type: none"> A4-2276: Standard kerb and gutter, vehicular crossing details A4-7284: Standard kerb ramp detail 	All areas
Tactile Indicators		
	Colour: Urbanstone 'Golden Gunmetal' (or approved equivalent) Size: 300 x 300 x 40/60 Finish: Type 'B' (hazard tactiles) Type 'C' (directional tactiles) as required, shotblast finish	All areas

Public Domain Elements + Fixtures

Rubbish Bins

	Type: Gossi Park 'Foreshore', Wheel-in bins (or approved equivalent) Colour: 'Ironstone' Powder coat	All areas
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Bike Rack

	Type: Town and Park 'Hoop' (grade 316) stainless steel Bike Rack (or approved equivalent) Fixing: Subsurface fixings	Main Streets, Civic Spaces and Squares only
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Bollards

	Type: Hub 'S205 Bollard' , (grade 316) stainless steel bollards (or approved equivalent)	All areas where required
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Drinking Fountain + Drink Station

	Type: 'Aquafil' Integrated water refill station and drinking fountain. (or approved equivalent)	Civic Spaces and Squares only
---	--	--------------------------------------

ELEMENT	DESIGN NOTES	APPLICATIONS
Public Phone Booth		
	Metal elements powder coated with Dulux 'Precious Pearl' (or approved equivalent)	All areas where required

Public Domain Furniture

Bench Seat

	Type: 'Town and Park' SSD Metro Timber bench seat Armrests: Provided in high pedestrian areas Fixing: Surface	All areas where required
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Planting Elements

Tree Grate

	Type: Hub 'S204 Tree Grate', high durability cast aluminium (or approved equivalent)	Main Streets and Civic Spaces and Squares only
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Terrabond Tree Pit

	Type: Porous Infill aggregate with Terrabond bonding Colour: Light brown	Main Streets, Civic Spaces and Squares, Laneways
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Mass Planted Verge

	Mass planting with low, hardy, lush groundcovers and grasses appropriate to the site conditions. Minimum width 1000mm	Civic Spaces and Squares, Typical Streets, Laneways
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Planted Blisters

	Mass planting with low, hardy, lush groundcovers and grasses appropriate to the site conditions. Minimum dimensions 1500 x 1500mm	Typical Streets
---	---	------------------------



Figure 42: Village Centres

C.2 VILLAGE CENTRES

INCLUDES

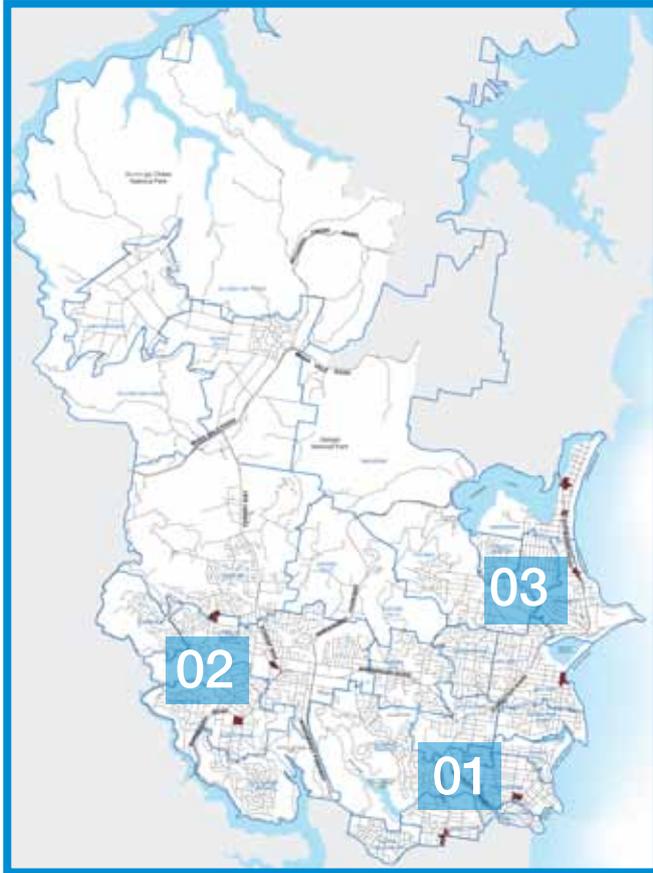
- Condamine St, Manly Vale
- Forestway Shops
- Narrabeen Village
- Collaroy
- Freshwater Village
- The Strand
- Forestville Village
- Glen St Village

C.2.1 DESIGN PRINCIPLES

Village centres serve as local retail and commercial hubs, and are typified by small businesses and boutiques, small cafes and restaurants, and local services providers. Street types within these zones are pedestrian-oriented, with a prevalence of outdoor dining and streetscape activation. Design principles for Village and Local Retail Centres include:

- Encourage pedestrian-priority of streetscape zones to slow vehicular traffic;
- Provide a material and furniture palette that responds to pedestrian use and amenity;
- Encourage streetscape activation for outdoor dining;
- Provide planting to landscape zones that support endemic vegetation communities whilst encouraging pedestrian safety and sightlines.

KEY PLAN



LEGEND

-  Village Centres
-  Suburb Boundaries

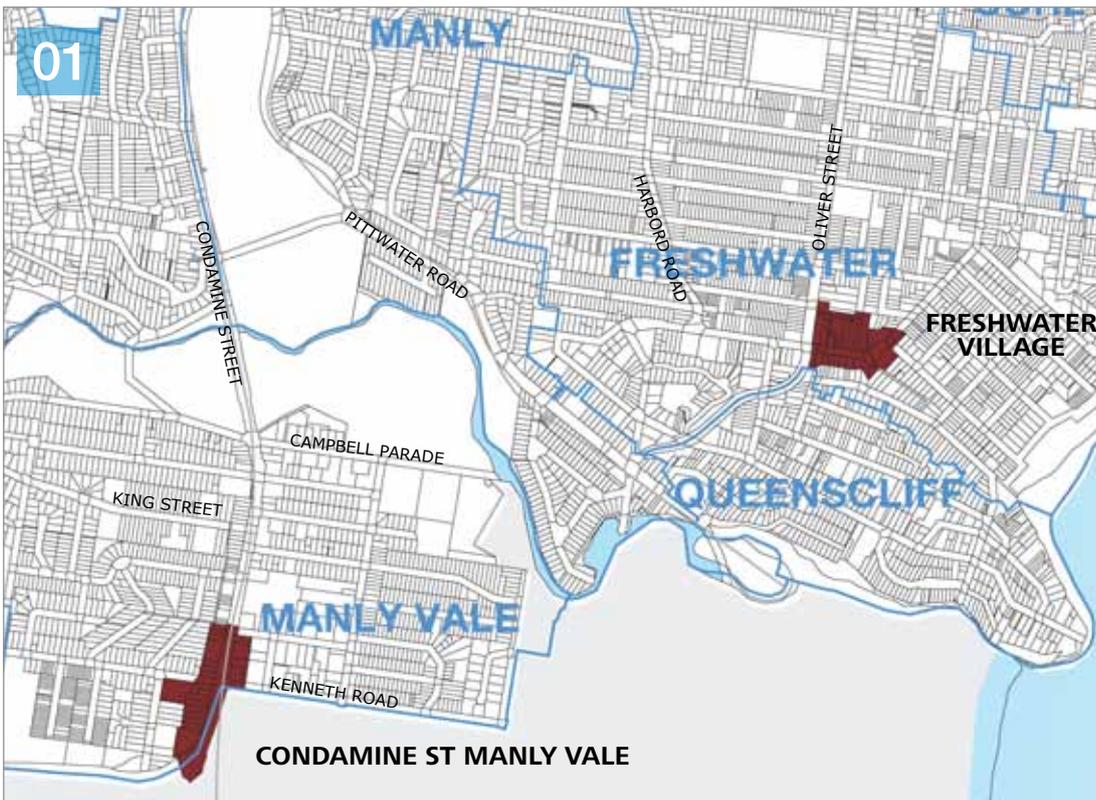


Figure 43: Village Centres Detail Area 01

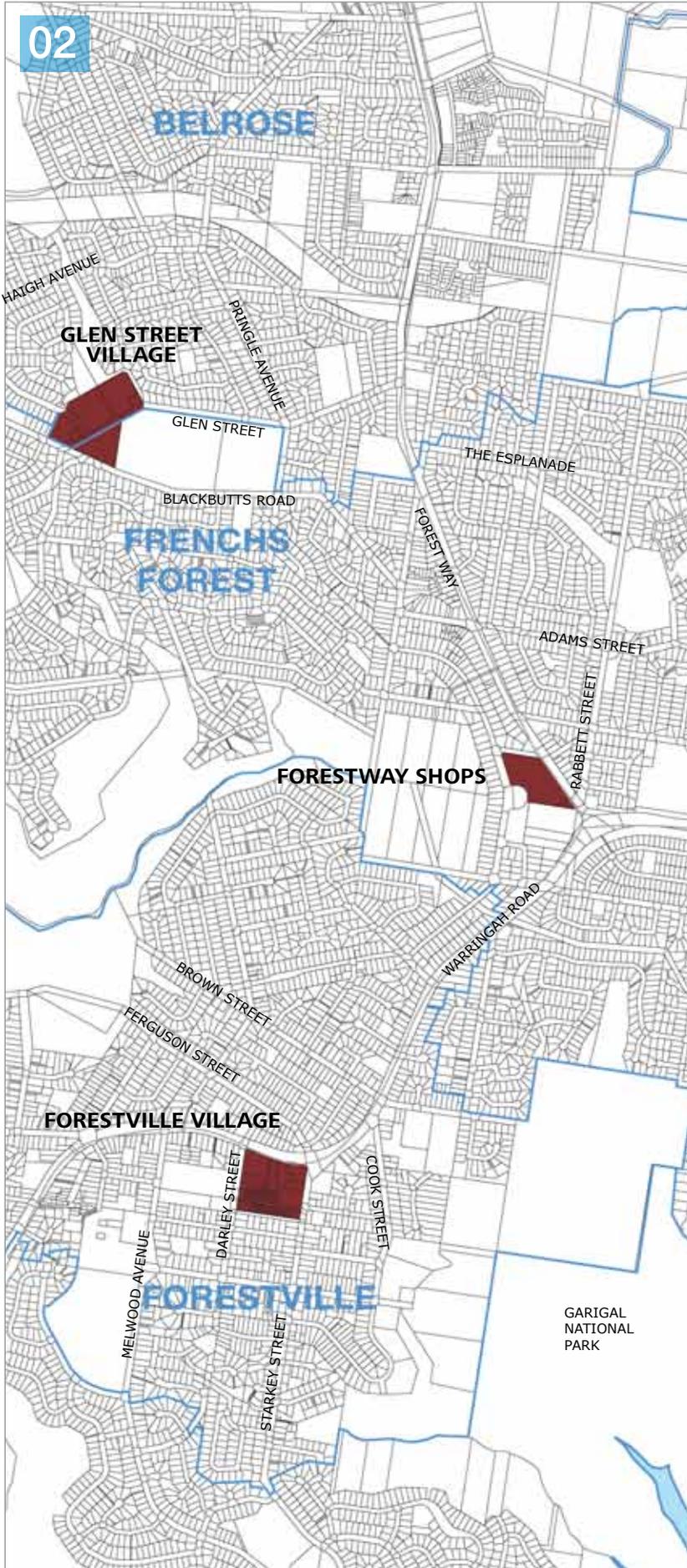


Figure 44: Village Centres Detail Area 02



Figure 45: Village Centres Detail Area 03

C.2.2 TYPICAL STREET

Typical streets within Village Centres are characterised by generous pedestrian footpaths, avenue planting of street trees, with on-street parking and cater for local traffic. Main streets accommodate a mix of retail and light commercial with paved footpaths allowing active dining frontages. A typical street in a Village Centre includes;

- A minimum 1.5m wide footpath, unobstructed by planting, furniture or other elements
- A continuous avenue of street trees, maximum 10m regular spacing, and in alignment to adjacent footpath planting
- Provision of WSUD planting where appropriate and without impacting on parking supply
- Provision of planted blister extensions and raised pedestrian crossing thresholds to slow vehicular traffic
- Provision of footpath widening areas for additional street planting or outdoor dining
- High quality unit pavement extending from the building line to the kerb
- Bicycle infrastructure (bike racks, seats) provided at regular intervals
- Public seats located at regular intervals; backs to kerb
- Grouping of streetscape furniture elements adjacent to the kerb and outside of the main path of travel
- No fill in areas of turf. A minimum 10 square metres of turf should be laid. Turf should not be used in high traffic areas.



Figure 46: Typical streetscape, Freshwater



Figure 47: Typical streetscape, Freshwater

C.2.3 CIVIC SPACES + SQUARES

Civic spaces within Village Centres support community life as well as encouraging local businesses and are crucial in creating active and healthy public spaces. Defined by active frontages these spaces should be designed to strengthen the pedestrian experience. Civic Squares consist of:

- A surface treatment that marries with the streetscape and creates a strong public domain presence
- Additional tree planting of appropriately scaled tree
- A range of seating edges and low walls to provide areas for different sized groups to gather
- Street furniture elements grouped, and located outside of the main path of travel
- Signage where required located adjacent to main path of travel
- Provision for public art where applicable should respond specifically to site.

C.2.4 TYPICAL LANEWAY / MIDBLOCK CONNECTIONS

Laneways and mid block connections within Village Centres are small scale connections that carry low numbers of vehicles as well as supporting pedestrian connections. Pedestrian midblock connections encourage pedestrian permeability throughout public spaces and should be designed with;

- Adequate lighting, passive surveillance and low landscaping considerations to create safe and usable links.
- Opportunities for activation through retail and outdoor dining
- Planted buffer and regular street tree planting where possible
- Continuation of the streetscape footpath material, with some opportunity to vary unit sizes to accommodate vehicular traffic.



Figure 48: Civic Square, Freshwater

ELEMENT	DESIGN NOTES	APPLICATIONS
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C.2.5 MATERIALS PALETTE

Paving + Ground Surfaces

Brick Paving

	<p>Colour: Austral Brahman Granite Bowral Dry Pressed (or approved equivalent) Size: 230 x 115 x 65mm Pattern: Stretcherbond Header Course: Austral Silver Sand Bowral Dry Pressed (or approved equivalent) Single row installed perpendicular to kerb Installation: 30mm sand bed, 2mm sand joint spacing Tactile Indicator Colour: Urbanstone River Topaz</p>	<p>New paving where development permits sufficient extent is installed. (Civic Spaces and Squares, Typical Streets, Laneway)</p>
	<p>Colour: Infill Pavers: Autumn Leaf Blend (or approved equivalent) Header course: Charcoal, double banding laid perpendicular to the kerb Size: 230 x 115 x 65mm Pattern: Stretcherbond Installation: 30mm sand bed, 2mm sand joint spacing Tactile Indicator Colour: Urbanstone Golden Gunmetal</p>	<p>For small sections of infill pavement only to match existing. (At Council's discretion)</p>

Concrete Unit Paving

	<p>Colour + Finish mix: Oatmeal Golden Glaze- Shotblast 60% Oatmeal Golden Glaze- Honed 25% Oatmeal River Gravel- Honed 15% C & M Designer Paving (or approved equivalent) Header Course: Single board 200 x 200 x 50mm Pattern: Stackbond Size: 200x200x 50 mm. 60mm thickness on vehicular areas Tactile Indicator Colour: Urbanstone Golden Gunmetal</p>	<p>Freshwater (Typical Streets, Civic Spaces and Squares, Pedestrian Laneways)</p>
	<p>Colour: River Topez, Urbanstone concrete unit paver (or approved equivalent) Finish: Honed Pattern: Stackbond Size: 400x400x 40 mm. 50mm thickness on vehicular areas Header Course: Boral Classic Pave T1150 Charcoal Colour 200 x 100 x 50mm (or approved equivalent) Double row perpendicular to kerb and against building line Tactile Indicator Colour: Urbanstone Golden Gunmetal</p>	<p>The Strand (Streets, Civic Spaces and Squares)</p>

ELEMENT

DESIGN NOTES

APPLICATIONS

	<p>Colour: Golden Gunmetal Urbanstone concrete unit pavers (or approved equivalent)</p> <p>Finish: Honed</p> <p>Pattern: Stackbond</p> <p>Size: 400x400x 40 mm. 60mm thickness on vehicular areas</p> <p>Header course: Double header course, Boral Pavestone 230 x 115 x 50mm, colour Sand Dune</p> <p>Tactile indicator colour: River Topez (see section below)</p>	<p>Collaroy</p> <p>(Typical Streets, Civic Spaces and Squares)</p>
---	---	---

Concrete slab details for all unit pavements

	<p>Installation: 30mm mortar bed, 2-4mm sand joint spacing, 20Mpa concrete slab base;</p> <ul style="list-style-type: none"> • Pedestrian areas: 75mm thick non-reinforced • Light Vehicular traffic: 150mm thick reinforced with F72 mesh • Heavy vehicular traffic: 180mm thick reinforced with F72 mesh 	<p>All unit pavers</p>
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Insitu Concrete Paving

	<p>Finish: Light broom</p> <p>Edges: 50mm wide edging tool</p> <p>Joints: Installed at right angles to the outer edge of the path.</p> <p>Expansion joints: 10mm thick, full depth of the slab using a preformed jointing material, intervals not greater than 4.8m .</p> <p>Dummy joints: at intervals of 1.2m max. or equidistant between expansion joints, and also being equalised between vehicular entrances.</p>	<p>Laneways, some secondary streets only</p>
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Kerb, gutter and vehicular crossings

	<p>Refer to Council drawings;</p> <ul style="list-style-type: none"> • A4-2276: Standard kerb and gutter, vehicular crossing details • A4-7284: Standard kerb ramp detail 	<p>All areas</p>
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Tactile Indicators

	<p>Colour: To contrast with pavement; Golden Gunmetal/ River Topez dependent on pavement type, Urbanstone (or approved equivalent)</p> <p>Size: 300 x 300 x 40/50/65mm</p> <p>Finish: Type 'B' (hazard tactiles) or Type 'C' (directional tactiles) as required, shotblast finish</p>	<p>Civic Spaces and Squares only</p>
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ELEMENT	DESIGN NOTES	APPLICATIONS
---------	--------------	--------------

Public Domain Elements + Fixtures

Rubbish Bins

	<p>Type: Gossi Park 'Foreshore', Wheel-in bins (or approved equivalent)</p> <p>Colour: 'Ironstone' Powder coat</p>	<p>All areas</p>
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Bike Rack

	<p>Type: Town and Park 'Hoop' (grade 316) stainless steel Bike Rack (or approved equivalent)</p> <p>Fixing: Subsurface fixings</p>	<p>Typical Streets, Civic Spaces and Squares</p>
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Bollards

	<p>Type: Hub 'S205 Bollard' , (grade 316) stainless steel bollards (or approved equivalent)</p>	<p>All areas</p>
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Drinking Fountain / Drink Station

	<p>Type: 'Aquafil' Integrated water refill station and drinking fountain. (or approved equivalent)</p>	<p>Civic Spaces and Squares</p>
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Public Phone Booth

	<p>Metal elements powder coated with Dulux 'Precious Pearl' (or approved equivalent)</p>	<p>All areas</p>
---	--	-------------------------

ELEMENT

DESIGN NOTES

APPLICATIONS

Public Domain Furniture

Bench Seat



Type: 'Town and Park' SSD Metro Timber bench seat
Armrests: Provided in high pedestrian areas
Fixing: Surface

All areas

Planting Elements

Tree Grate



Type: Hub 'S204 Tree Grate', high durability cast aluminium (or approved equivalent)

Civic Spaces and Squares

Terrabond Tree Pit



Beige / light brown aggregate with Terrabond permeable bonding

Areas of high pedestrian activity
 (Civic Spaces and Squares, Typical streets)

Planted Tree Pit



Mass planting with low, hardy, lush groundcovers and grasses appropriate to the site conditions. Minimum dimensions 1500 x 1500mm

Typical Streets and Civic Spaces and Squares

Planted Blisters



Mass planting with low, hardy, lush groundcovers and grasses appropriate to the site conditions. Minimum dimensions 1500 x 1500mm

Where appropriate in Typical Streets

WSUD in Parking Lanes



Mass planting with low, hardy, lush groundcovers and grasses appropriate to the site conditions. Minimum dimensions 2500 x 2000mm

Where appropriate in Typical Streets

LOCAL CENTRES:

(Priority List order: Warringah Retail Centres Audit)

- Condamine st, Manly Vale
- Arthur St, Forestville
- Oliver St, Curl Curl
- Bridge St, Queensclif
- Collaroy
- South Crk Rd East, Dee Why
- Sorlie Rd, Forestville
- Bantry Bay Rd, Frenchs Forest
- Griffin Rd, Nth Curl Curl
- Malcolm St, North Narrabeen
- Maybrook Rd, Cromer
- Aubren St, Collaroy
- Frenchs Forest Rd East, Frenchs Forest
- Kentwell Rd, Allambie
- Pitt Rd, Nth Curl Curl
- Corrie Rd/ Pittwater Rd, North Manly
- Carawa Rd, Cromer
- McIntosh Rd, Narrabeena
- May Rd, Narrabeena
- Tramore Rd, Killarney Heights
- Harbord Rd, Harbord
- Alfred St/ Rayner St, Narrabeena
- Pound Ave, Davidson
- Ralston St, Belrose
- Allambie Rd, Allambie Heights
- Fisher Rd Nth, Collaroy
- Veterans Pde, Collaroy
- Cnr Woodbine & Bangaroo Sts, Nth Balgowlah
- Booralie Rd, Terrey Hills
- Sth Creek Rd, Cromer
- Adams St, Curl Curl
- Cook St, Frenchs Forest
- Carrington Pde/ Gardere, Curl Curl

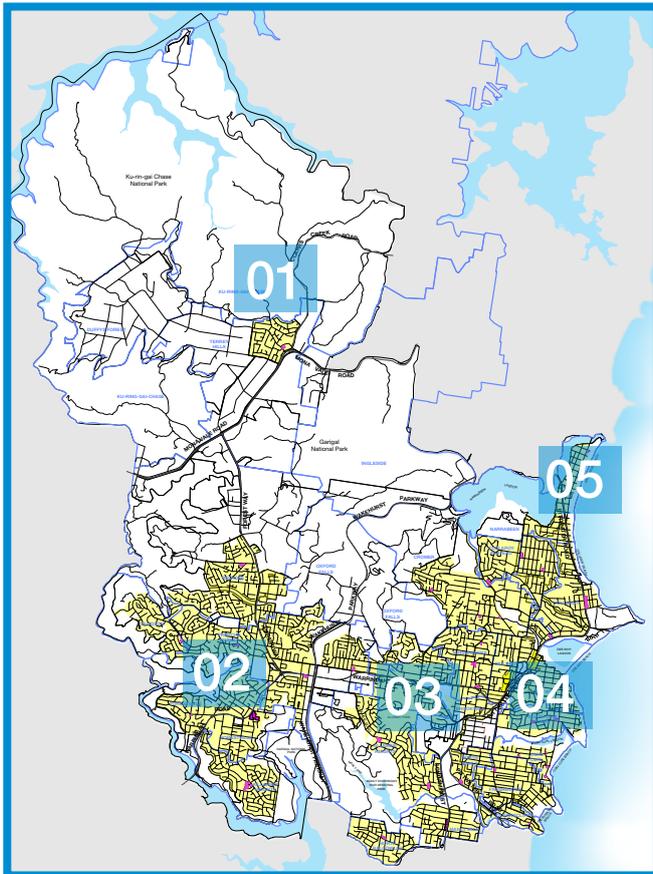
C.3 LOCAL AREAS

C.3.1 DESIGN PRINCIPLES

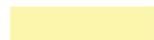
Local areas serve neighbourhood communities and are typified by low density residential streets and local centres containing small retail stores, cafes and local businesses. These form the vast majority of street types within the Warringah LGA. Design principles for Local Areas include:

- Provide a simple, durable, manageable and consistent palette that is appropriate to local areas and unifies the streetscape and public spaces;
- Support pedestrian activity and amenity;
- Provide opportunities for variations to certain elements and materials in specific streets and precincts.

KEY PLAN



LEGEND

-  Local Areas
-  Local Centres
-  Suburb Boundaries

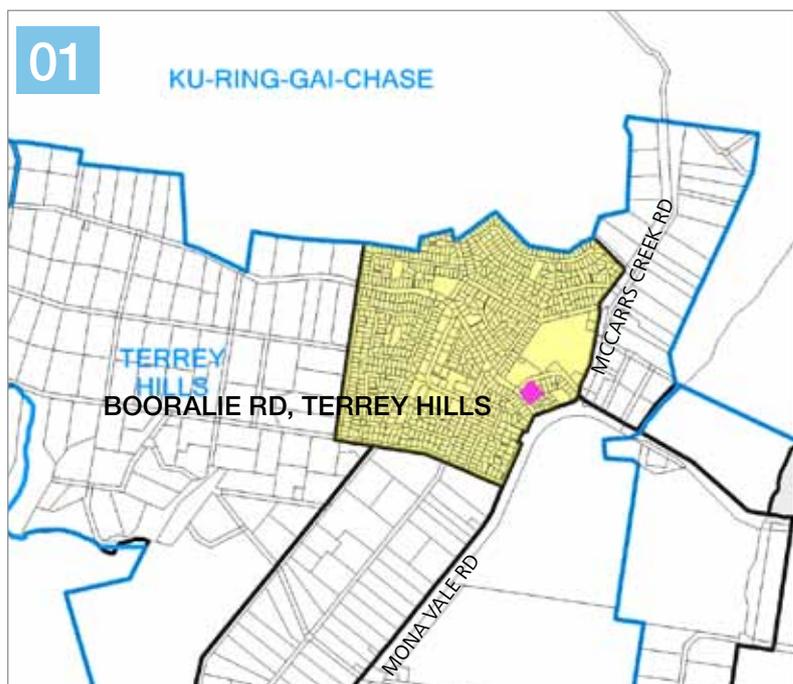


Figure 50: Local Areas: Detail Area 01

02

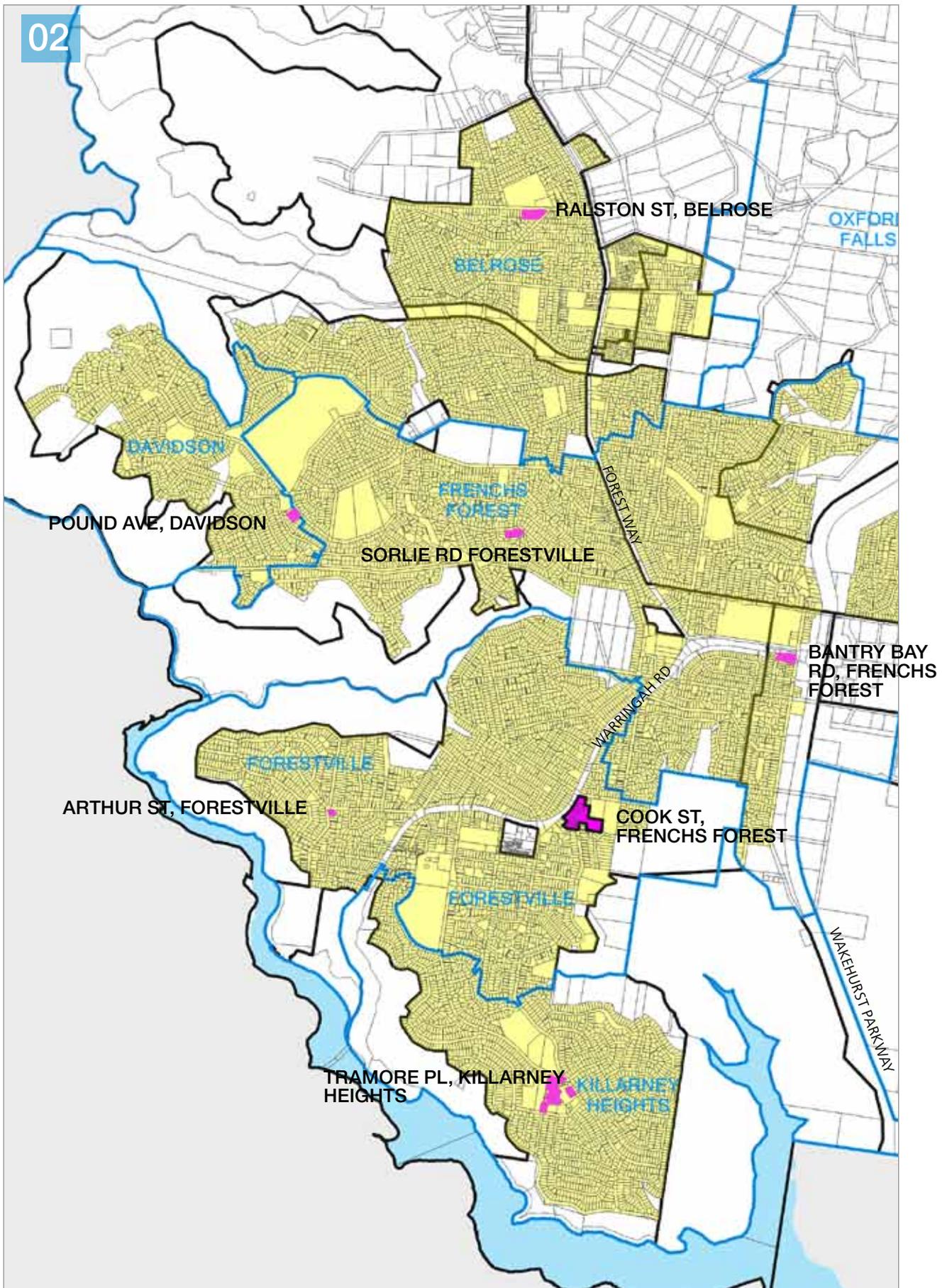


Figure 51: Local Areas: Detail Area 02

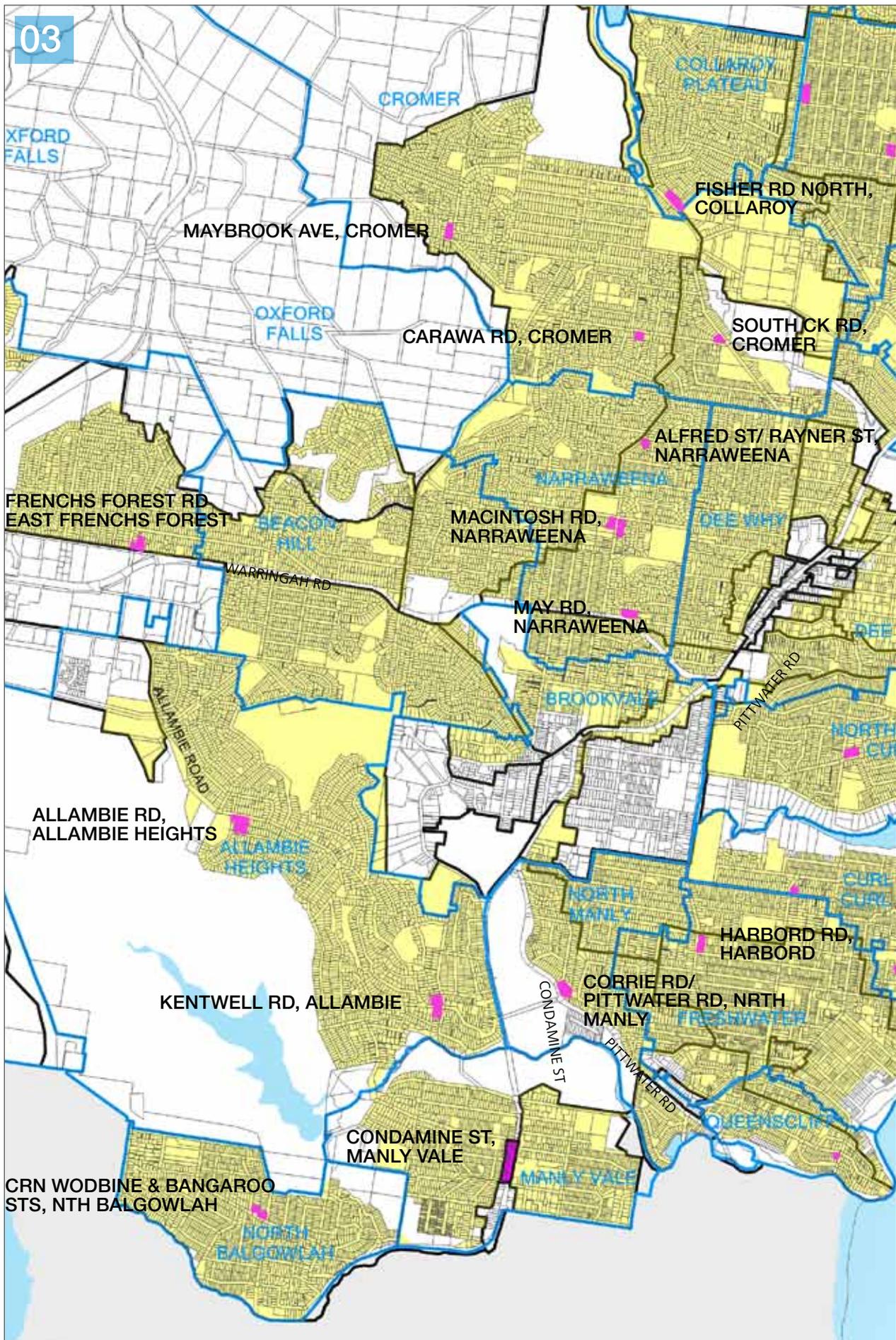


Figure 52: Local Areas: Detail Area 03

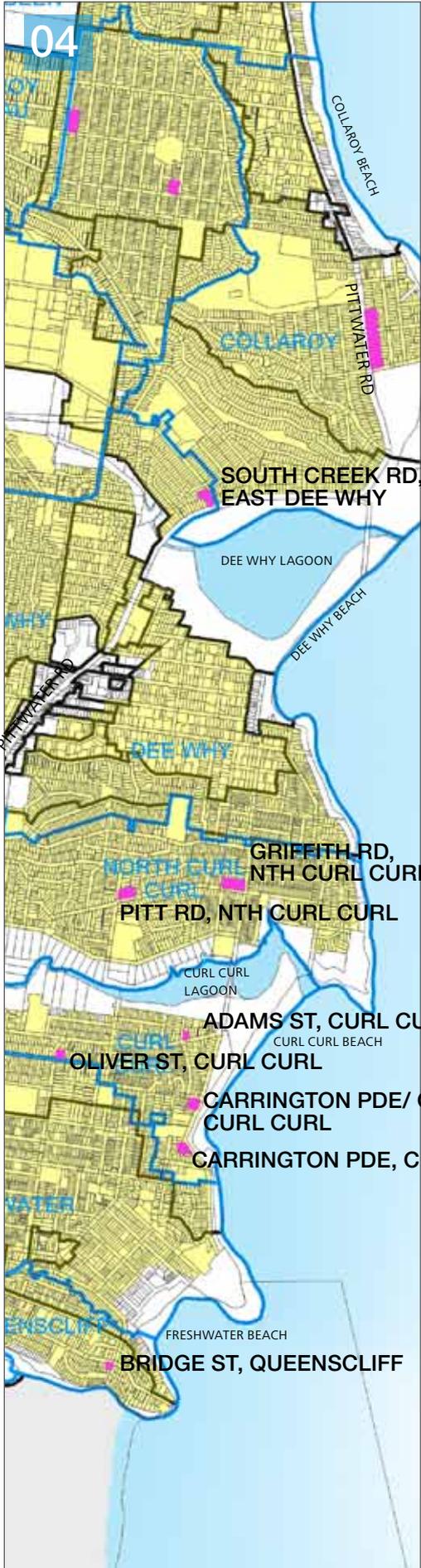


Figure 53: Local Areas: Detail Area 04



Figure 54: Local Areas: Detail Area 05

C.3.2 TYPICAL STREET

Typical streets within Local Areas are characterised by residential zones with on-street parking and footpaths to both sides of the street and cater for local traffic. A typical street in a Local Area includes;

- A minimum 1.5m wide footpath, unobstructed by planting, furniture or other elements
- Provision of footpath widening areas for shared bike paths
- A continuous avenue of street trees, maximum 10m regular spacing, and in alignment to adjacent footpath planting
- Provision of WSUD planting within parking bays
- Provision of planted blister extensions and raised pedestrian crossing thresholds to slow vehicular traffic

C.3.3 CIVIC SPACES + SQUARES

Civic spaces within local areas are often related to local community buildings and organisations and support and community engagement within neighbourhoods. Civic spaces and squares should be designed to strengthen the neighbourhood pedestrian experience and should consist of:

- A surface treatment that deviates from the streetscape and creates a strong public domain presence
- Additional tree planting of appropriately scaled tree
- A range of seating edges and low walls to provide areas for different sized groups to gather
- Street furniture elements grouped, and located outside of the main path of travel
- Local signage and community notice boards where required located adjacent to main path of travel



Figure 55: Typical local area streetscape, Freshwater



Figure 56: Typical Civic Building, local areas, Belrose Library

C.3.4 TYPICAL LOCAL CENTRE

Local Centres within local areas are vital in providing local amenities and encouraging incidental community engagement. They should be designed to reflect the local streetscape whilst providing opportunities and include:

- A surface treatment that marries with the surrounding streetscape whilst providing opportunities for paving deviation and creates a strong public domain presence
- Additional tree planting of appropriately scaled tree
- Opportunities for footpath extensions and planted blisters to encourage outdoor dining
- Street furniture elements grouped, and located outside of the main path of travel
- Local signage and community notice boards where required located adjacent to main path of travel ('A' frames not permitted)

C.3.5 TYPICAL LANEWAY

Laneways within Local Areas are mostly traditional service lanes to the rear of residential properties or small retail strips. Laneways in Local Areas should be designed with:

- Adequate lighting, passive surveillance and low landscaping considerations to create a safe and usable links.
- Planted buffer and regular street tree planting where possible
- Continuation of the streetscape footpath material, with some opportunity to vary unit sizes to accommodate vehicular traffic
- Provision for a pedestrian-priority shared zone environments with raised thresholds



Figure 57: Typical shopping strip, local areas, Collaroy



Figure 58: Typical pedestrian laneway, Freshwater

C.3.6 MATERIALS PALETTE

Paving + Ground Surfaces

In situ Concrete Paving

	<p>Finish: Light broom</p> <p>Edges: 50mm wide edging tool</p> <p>Joints: Installed at right angles to the outer edge of the path.</p> <p>Expansion joints: 10mm thick, full depth of the slab using a preformed jointing material, intervals not greater than 4.8m</p> <p>Dummy joints: at intervals of 1.2m max. or equidistant between expansion joints, and also being equalised between vehicular entrances.</p>	<p>All Typical Streets</p>
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Brick Paving

	<p>Colour: Austral Brahman Granite Bowral Dry Pressed (or approved equivalent)</p> <p>Size: 230 x 115 x 65mm</p> <p>Pattern: Stretcherbond</p> <p>Header Course: Austral Silver Sand Bowral Dry Pressed (or approved equivalent)</p> <p>Single row installed perpendicular to kerb</p> <p>Installation: 30mm sand bed, 2mm sand joint spacing, 20Mpa concrete slab base;</p> <ul style="list-style-type: none"> • Pedestrian areas: 75mm thick non-reinforced • Light Vehicular traffic: 150mm thick reinforced with F72 mesh • Heavy vehicular traffic: 180mm thick reinforced with F72 mesh 	<p>New paving where development permits sufficient extent is installed.</p> <p>(Civic Spaces and Squares, Typical Streets, Laneway)</p>
	<p>Colour:</p> <p>Infill Pavers: Autumn Leaf Blend (or approved equivalent)</p> <p>Header course: Charcoal, double banding laid perpendicular to the kerb</p> <p>Size: 230 x 115 x 65mm</p> <p>Pattern: Stretcherbond</p> <p>Installation: 30mm sand bed, 2mm sand joint spacing, 20Mpa concrete slab base;</p> <ul style="list-style-type: none"> • Pedestrian areas: 75mm thick non-reinforced • Light Vehicular traffic: 150mm thick reinforced with F72 mesh • Heavy vehicular traffic: 180mm thick reinforced with F72 mesh 	<p>For small sections of infill pavement only to match existing.</p> <p>(At Council's discretion)</p>

ELEMENT

DESIGN NOTES

APPLICATIONS

Pram Ramp



Type: In situ concrete
Colour: 'Apricot' colour oxide to Austroad and Australian Standards

Typical Streets

Kerb, gutter and vehicular crossings

Refer to Council drawings;

- A4-2276: Standard kerb and gutter, vehicular crossing details
- A4-7284: Standard kerb ramp detail

All areas

Tactile Indicators



Colour: To contrast with pavement; Golden Gunmetal/ River Topez dependent on pavement type, Urbanstone (or approved equivalent)
Size: 300 x 300 x 40/50/65mm
Finish: Type 'B' (hazard tactiles) or Type 'C' (directional tactiles) as required, shotblast finish

Prominent areas
 (Civic Squares, Bus stops etc)

Public Domain Elements + Fixtures

Rubbish Bins



Type: Gossi Park 'Foreshore', Wheel-in bins (or approved equivalent)
Colour: 'Ironstone' Powder coat

Prominent areas,
 (Civic Spaces and Squares, Local Centres)



Sulo bin attached to galvanised steel post

Typical Streets

Bike Rack



Type: Town and Park 'Hoop' (grade 316) stainless steel Bike Rack (or approved equivalent)
Fixing: Subsurface fixings

Typical Streets, Civic Spaces and Squares

ELEMENT	DESIGN NOTES	APPLICATIONS
Bollards		
	<p>Type: Town and Park BLD3/XT (or approved equivalent)</p> <p>Fixing: Subsurface fixings</p> <p>Colour: Powdercoat colour black</p>	<p>Civic Spaces and Squares</p>

Public Phone Booth		
	<p>Metal elements powder coated with Dulux 'Precious Pearl' (or approved equivalent)</p>	<p>All areas</p>

Public Domain Furniture

Bench Seat

	<p>Type: 'Town and Park' SSD Metro Aluminium bench seat</p> <p>Armrests: Provided in high pedestrian areas</p> <p>Fixing: Surface</p>	<p>Typical Streets, Civic Spaces and Squares</p>
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Planting Elements

Terrabond Tree Pit

	<p>Beige / light brown aggregate with Terrabond permeable bonding</p>	<p>Areas of high pedestrian activity</p> <p>(Civic Spaces and Squares)</p>
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Trees in Turf Verge

	<p>Minimum turf width 1900mm</p>	<p>All areas</p>
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Trees in Mass Planting

	<p>Mass planting with low, hardy, lush groundcovers and grasses appropriate to the site conditions. Minimum width 1000mm</p>	<p>All areas</p>
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LEGEND

- Business Parks and Industrial
- Suburb Boundaries

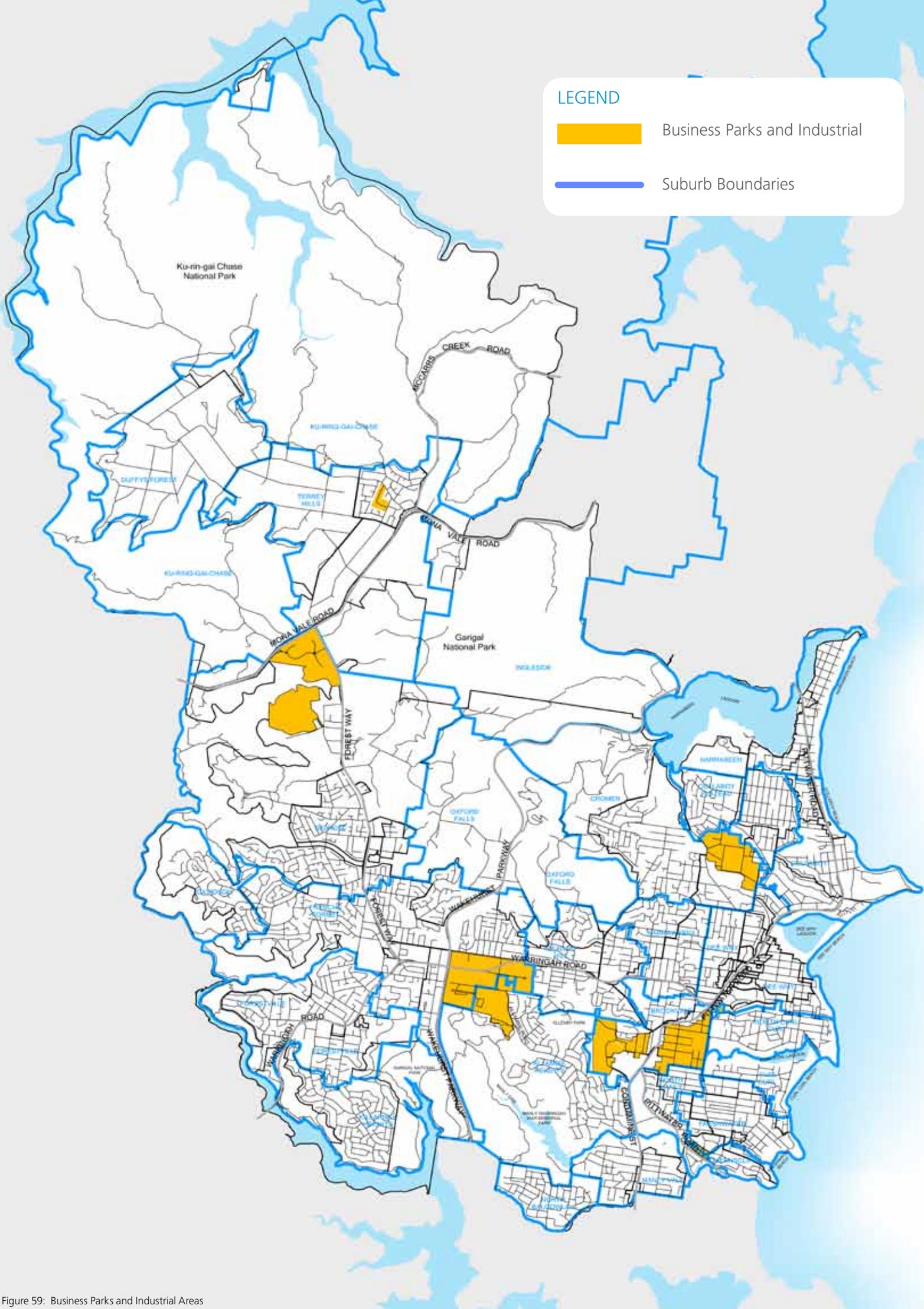


Figure 59: Business Parks and Industrial Areas

C.4 BUSINESS PARKS + INDUSTRIAL AREAS

INCLUDES

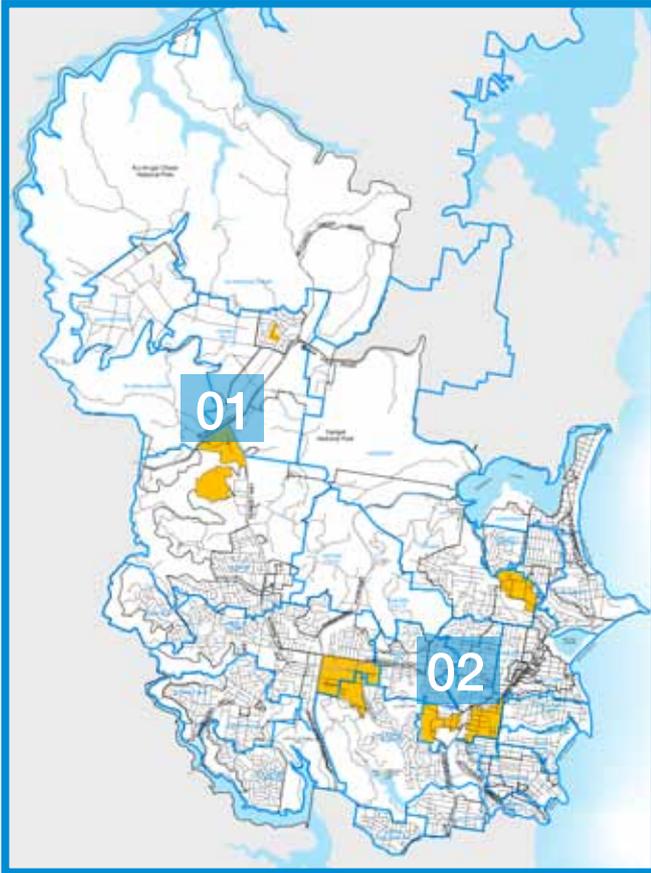
- Terrey Hills
- Austlink Business Park
- Bare Creek
- Rodborough Road
- Aquatic Drive
- Brookvale Industrial West
- Brookvale Industrial
- Brookvale Service Centre
- Manly Vale Business
- Harbord Industrial
- Cromer Industrial

C.4.1 DESIGN PRINCIPLES

Within the Warringah region, business parks and light industrial areas typically have significant setbacks to the street. Design principles for Business parks and Industrial Areas include:

- Provide a simple, durable, manageable and consistent palette that is appropriate to business parks and unifies the streetscape and public spaces;
- Support pedestrian activity and amenity;
- Provide planting to landscape setbacks that support endemic vegetation communities whilst encouraging pedestrian safety and sightlines.

KEY PLAN



LEGEND

-  Business Parks and Industrial
-  Suburb Boundaries

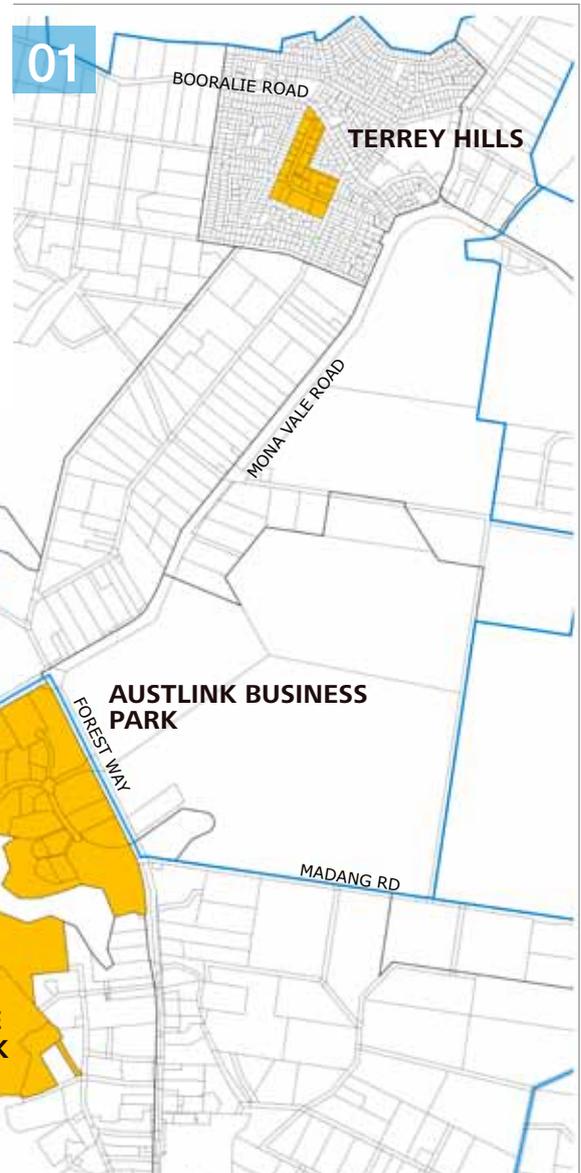


Figure 60: Business Parks and Industrial: Detail Area 01

02

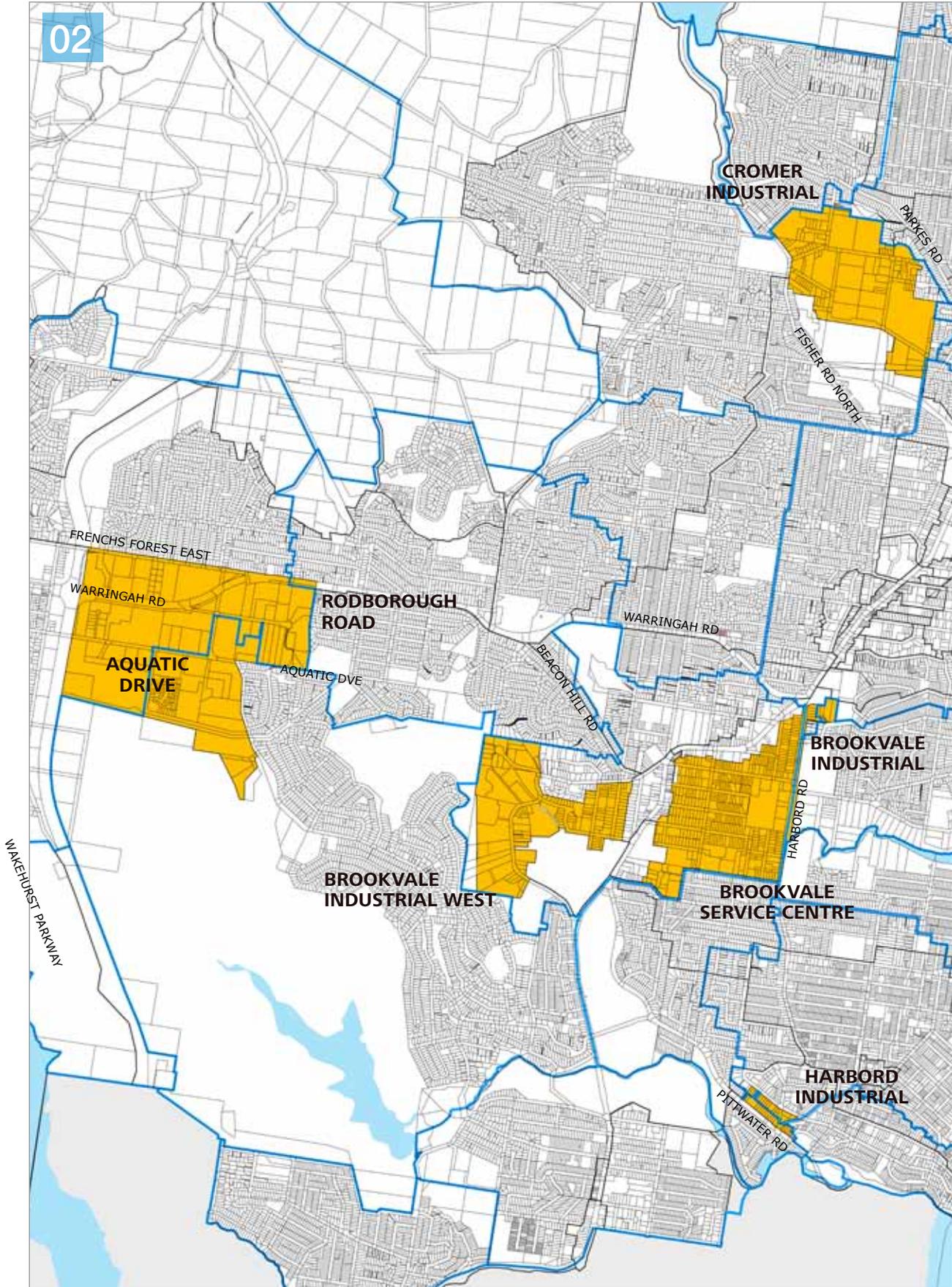


Figure 61: Business Parks and Industrial: Detail Area 02

C.4.2 TYPICAL STREET

Typical streets within Business Parks range from wide vehicular roads abutting gateway corridors to smaller streets adjacent to local areas. These vary greatly in width and character, but generally should provide:

- Minimum 1.5m wide pedestrian footpath to both sides of the road where possible
- Off-road or dedicated cycle path, separated from vehicular traffic
- Infrastructure for commuters; bus shelters, telephone booths and seating
- Street trees of generous scale along road edge
- Planted/ turf verge between the footpath and road
- Where possible, setbacks should be mass planted with a mix of native shrubs and perennials, with additional tree planting



Figure 62: Landscape setback to business park, Beacon Hill

C.4.3 MATERIALS PALETTE

Paving + Ground Surfaces

Insitu Concrete Paving

	<p>Finish: Light broom</p> <p>Edges: 50mm wide edging tool</p> <p>Joints: Installed at right angles to the outer edge of the path.</p> <p>Expansion joints: 10mm thick, full depth of the slab using a preformed jointing material, intervals not greater than 4.8m .</p> <p>Dummy joints: at intervals of 1.2m max. or equidistant between expansion joints, and also being equalised between vehicular entrances.</p>	<p>Typical Streets</p>
---	--	-------------------------------

Pram Ramp, kerb, gutters and vehicular crossovers

	<p>Type: In situ concrete</p> <p>Kerb ramp colour: 'Apricot' colour oxide to Austroad and Australian Standards</p> <p>Refer to Council drawings;</p> <ul style="list-style-type: none"> • A4-2276: Standard kerb and gutter, vehicular crossing details • A4-7284: Standard kerb ramp detail 	<p>Typical Streets</p>
--	--	-------------------------------

Public Domain Furniture

Bench Seat

	<p>Type: 'Town and Park' SSD Metro Aluminium bench seat</p> <p>Armrests: Provided in high pedestrian areas</p> <p>Fixing: Surface</p>	<p>Typical Streets</p>
---	--	-------------------------------

Planting Elements

Turf Verge

	<p>Turf verge with regular street tree planting</p>	<p>Typical Streets</p>
---	---	-------------------------------

Mass Planted Verge

	<p>Mass planting with low, hardy, lush groundcovers and grasses appropriate to the site conditions. Minimum width 1000mm</p>	<p>Typical Streets where feasible</p>
---	--	--

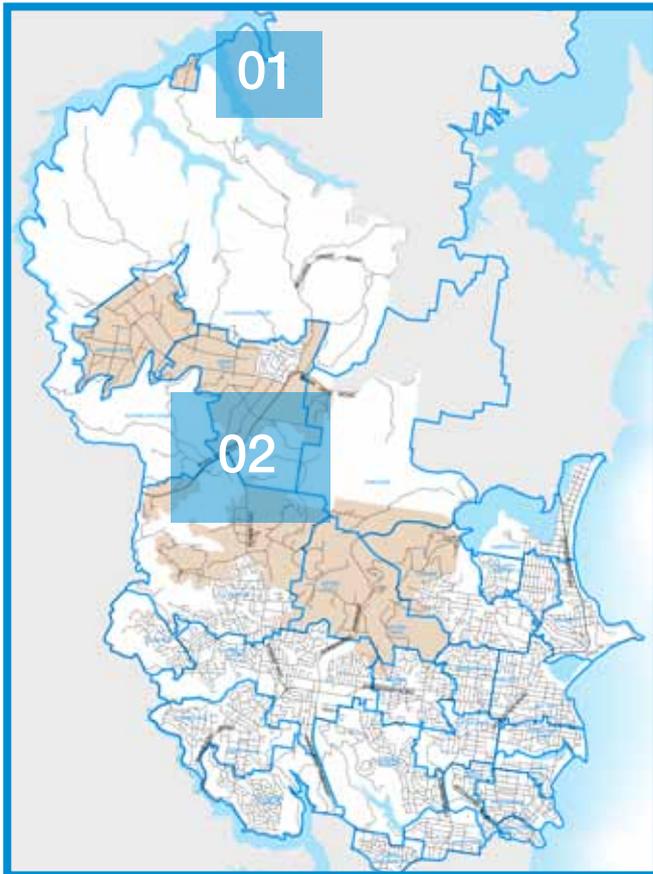
C.5 NON-URBAN AREAS

C.5.1 DESIGN PRINCIPLES

Within the Warringah LGA, non-urban areas including rural residential developments, hobby farms, and small-scale agricultural productions provide a unique streetscape typology not often seen within surrounding regions. Design principles for Non-Urban Areas include:

- Provide a simple, durable, and consistent palette that is appropriate to non-urban areas and reflects and unifies the existing streetscape;
- Support and protect natural land and vegetation through endemic planting to the streetscape and open spaces.
- Maximises WSUD infrastructure such as the inclusion of planted verges and swales where appropriate

KEY PLAN



LEGEND

-  Non-urban areas
-  Suburb Boundaries

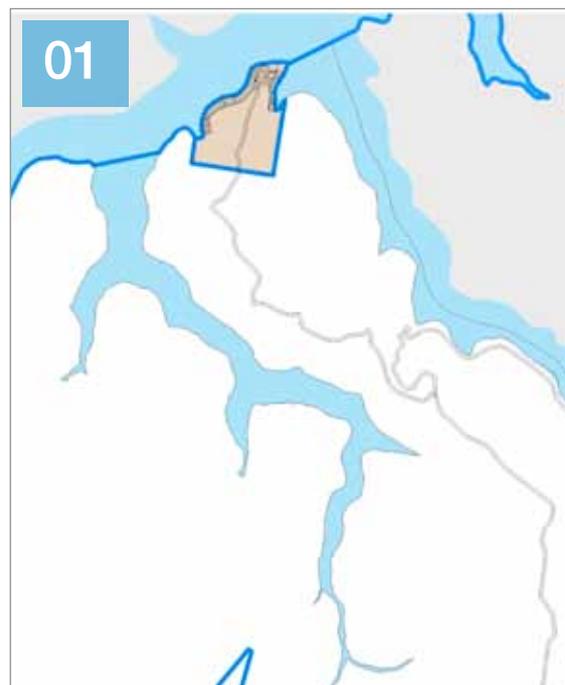


Figure 64: Non-urban Areas: Detail Area 01

02

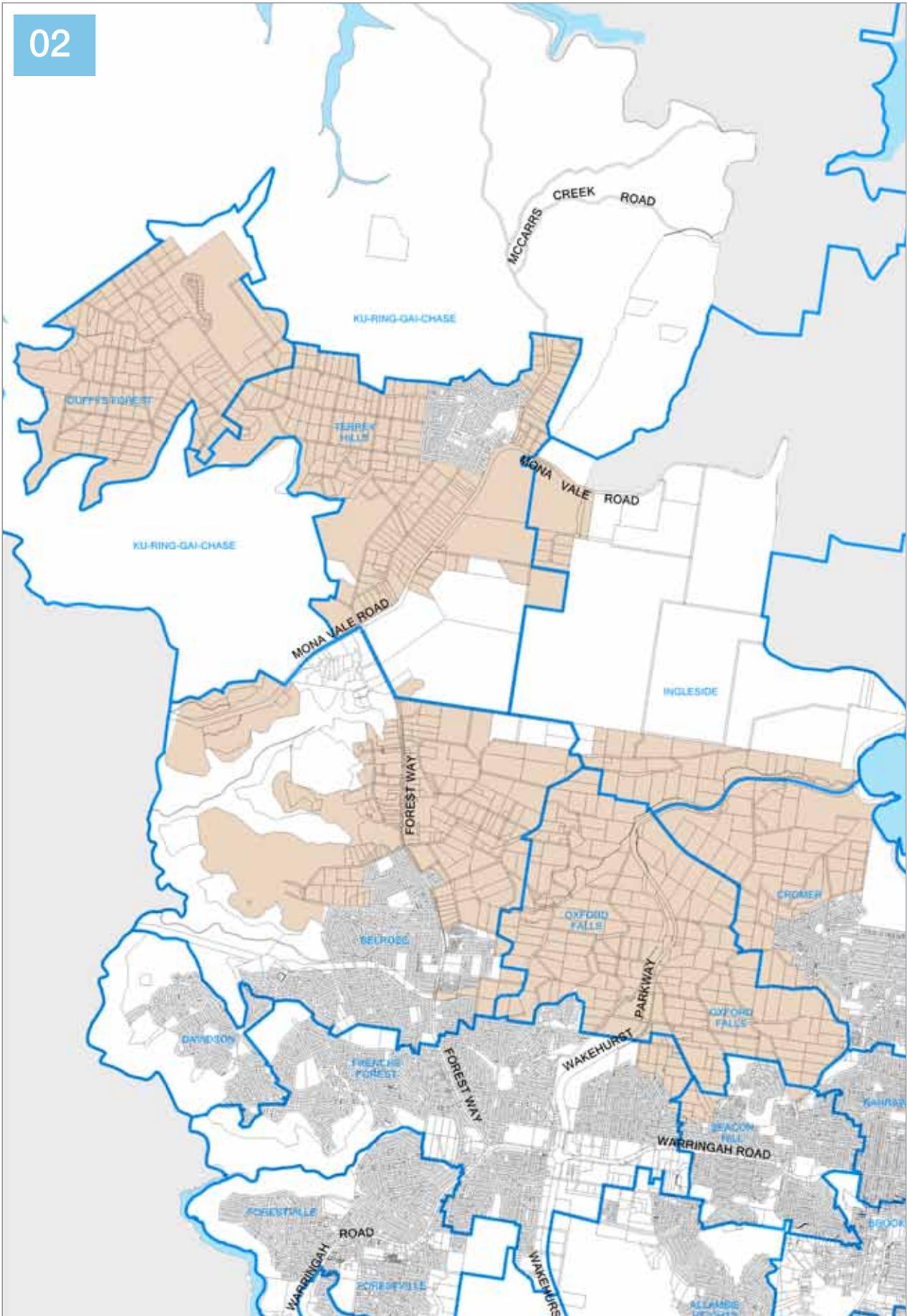


Figure 65: Non-urban Areas: Detail Area 02

C.5.2 TYPICAL STREET

Typical streets within Non-Urban Areas are vehicular roads which transect a mix of rural zones and bushland environments. They are characterised by both sealed and unsealed surfaces, and are often without kerbs or footpaths to either side. A typical street in Non-Urban Areas vary greatly in width and character, but generally should provide:

- Where possible, minimum 1.5m wide pedestrian footpath to one side of the road
- Infrastructure for commuters; bus shelters, telephone booths and seating
- Street trees of generous scale along road edge
- Planted/ turf verge between the footpath and road
- Where possible, setbacks should be mass planted with a mix of native shrubs and perennials, with additional tree planting
- Landscape zones abutting bushland should provide planting that supports endemic communities



Figure 66: Typical non-urban streetscape, Oxford Falls

C.5.3 MATERIALS PALETTE

Paving + Ground Surfaces

In situ Concrete Paving

	<p>Finish: Light broom</p> <p>Edges: 50mm wide edging tool</p> <p>Joints: Installed at right angles to the outer edge of the path.</p> <p>Expansion joints: 10mm thick, full depth of the slab using a preformed jointing material, intervals not greater than 4.8m .</p> <p>Dummy joints: at intervals of 1.2m max. or equidistant between expansion joints, and also being equalised between vehicular entrances.</p>	Typical Streets
---	--	-----------------

Pram Ramp, kerb, gutters and vehicular crossovers

	<p>Type: In situ concrete</p> <p>Kerb ramp colour: 'Apricot' colour oxide to Austroad and Australian Standards</p> <p>Refer to Council drawings;</p> <ul style="list-style-type: none"> • A4-2276: Standard kerb and gutter, vehicular crossing details • A4-7284: Standard kerb ramp detail 	Typical Streets
--	--	-----------------

Public Domain Furniture

Bench Seat

	<p>Type: 'Town and Park' SSD Metro Aluminium bench seat</p> <p>Armrests: Provided in high pedestrian areas</p> <p>Fixing: Surface</p>	Typical Streets
---	--	-----------------

Planting Elements

Turf Verge

	Turf verge with regular street tree planting	Typical Streets
---	--	-----------------

Mass Planted Verge

	Mass planting with low, hardy, lush groundcovers and grasses appropriate to the site conditions. Minimum width 1000mm	Typical Streets
---	---	-----------------

PART D

PARKS + RESERVES

Urban Parks and Reserves

Urban Parks and Reserves include a wide variety of public park types, including sporting fields, local and regional scaled parks, road reserves and playgrounds.

They are located within close proximity to populated areas, and provide a wide range of recreational, both active and passive, activities.

Key to their development is providing a unified palette to that of the streetscape surrounds, and ensuring a high durable palette to cater for high demand of use.

Bushland Parks and Reserves

Bushland Parks and Reserves are those adjacent to National Parks and waterways, or areas of significant remnant bushland.

Included within bushland parks and reserves are playgrounds, barbecue areas, walking trails and boardwalks.

These areas generally cater for low impact activities, and allow user interaction with the natural environment.

Key to the development of these areas is ensuring the protection of existing flora and fauna, ensuring that the palette of materials is durable to potential wet or saline conditions, and a palette that responds to the bushland character.

Beachfront Parks and Reserves

Beachfront Parks and Reserves include areas of parkland, playgrounds, reserves, beachfronts, rock pools, headland parks and boardwalks that are directly adjacent to the coastal edge.

They are places that have a high level of visitation by both residents and tourists, provide recreational opportunities, as well as including areas of significant natural environment.

Key to the development of these areas is providing a high quality palette of materials that is also able to withstand highly exposed conditions.

National Parks

Not within Design Guidelines scope

Note; This map is to provide a guide only. The design of every open space should be conscious of;

- Responding to the surrounding streetscapes and adjacent open space
- Responding to the site specific environmental conditions to ensure that longevity and durability of design is achieved



Figure 68: South Curl-Curl Bicentennial Coastal Walkway

D.1 TYPES OF PARKS & RESERVES

There are a wide variety of open space types in Warringah including;

- parks,
- sporting fields,
- headland trails,
- bush tracks,
- rockpools, and
- playgrounds.

General design guidelines for each type are given in this section, although each open space should be designed as a site specific response to topography, site features, usage and the role it serves at a regional or local level.

Development should refer to Warringah Council's Recreation Strategy 2009 for further detail.

D.1.1 PARKS

Design Objectives

- Cater for a range of recreational activities, both passive and active
- Cater for a range of age groups and user abilities
- Provide public facilities at parks that respond directly to type and frequency of use
- Provide adjacent parking and public amenities appropriate to use and future demand
- Respect and protect the natural environment and systems
- Provide links to Warringah's cycle paths where possible to encourage healthy living
- Include coastal erosion planning and considerations
- Public facilities should be sited with respect to natural systems, site features, views and vistas
- Provide seating and facilities that encourage group gatherings
- Ensure that designs meet Australia Standards for safety and access
- Use the standard palette of materials.



Figure 69: Dee Why Beach Park

D.1.2 ROCKPOOLS

Rockpools within Warringah assist in providing a diversity in recreational experiences within beachfront areas, as well as providing opportunities for organised events and community groups.

Design Objectives

- Reflect and respect the natural beachfront character, whilst providing appropriate amenities and fixtures, such as umbrella spigots.
- Ensure materials, furniture and fixtures reflect the corrosive environment with marine grade 316 stainless steel fixtures, and aluminium furniture elements.



Figure 70: Collaroy Rockpool

D.1.3 PLAYGROUNDS

Playgrounds are important places for child health and well-being. They encourage active and healthy lifestyles and should be designed to ensure inclusive, safe, and challenging play environments are created.

Design Objectives

- To maximise passive surveillance and views into and out of playspaces, and provide adequate safety buffer/ fencing from beach hazards
- To cater for a range of child ages and abilities
- To provide playspaces that conform to current Australian Standards and requirements
- To utilise natural topography and site features into the design of the playground where appropriate
- To provide play elements that give a range of experiences and use.

D.1.4 SPORTING FIELDS

Sporting fields in Warringah LGA are generally located within urban areas, close to residential communities and other public facilities such as schools. Sporting fields and facilities should be designed in accordance with Council's Recreation Strategy.

Design Objectives

- To provide public facilities that directly respond to the user demand and frequency of use of specific sporting fields
- To encourage multi-use, future adaptability of use, and future expansion for facilities where possible
- To use the standard palette of materials.



Figure 71: Michaela Howie Playground, Dee Why Beach



Figure 72: Michaela Howie Playground, Dee Why Beach

D.1.5 TRAILS, TRACKS AND BOARDWALKS

Trails, walking tracks and boardwalks vary greatly in type and scale within bushland areas of Warringah. Key to design is the choice of material type, scale of trail, type of trail in accordance with use, activity, and environment conditions.

The material palette give broad guideline to the use of ground surfaces and furniture elements, but design variation from this is subject to project specific sites design to Council's discretion.

Design Objectives

- Respect and protect the natural environment and systems through appropriate location and construction methods
- Provide opportunities for interpretation by locating trails with respect to natural site features, views and vistas, and artefacts of interest
- Generally, do not provide lighting along headland trails and paths

- Ensure safety standards are addressed through adequate provision of barriers and respect to fall heights etc
- Provide all inclusive access where viable
- Provide designs that respond to future sea level rise predictions
- Ensure trails, tracks and boardwalks are made from durable materials that provide a 50 longevity, and are sources from sustainable means
- Ensure designs provide a construction method that limits impact on surrounding bushland
- Provide opportunities for bush regeneration to offset construction



Figure 73: South Curl Curl Bicentennial Coastal Walkway

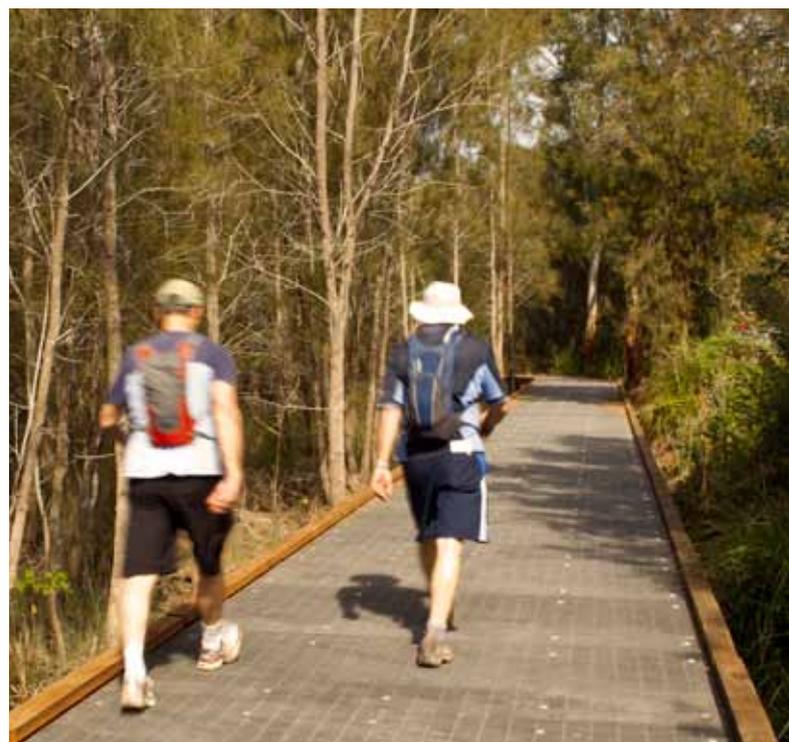


Figure 74: Bushland pathway, Narrabeen Lagoon Multi-Use Trail



Figure 75: Bushland pathway, Narrabeen Lagoon Multi-Use Trail



LEGEND

- Beachfront Parks and Reserves
- Suburb Boundaries

Figure 76: Beachfront Parks and Reserves

D.2 BEACHFRONT PARKS + RESERVES

INCLUDES

- Birdwood Park
- Berry Reserve
- Wheeler Park
- Wellington Street Reserve
- Collaroy Beach Rock Pool
- Dee Why Lagoon Wildlife Refuge
- Dee Why Beach Rock Pool
- Dee Why Headland
- The Glen (Surf Reserve)
- Dee Why Headland
- North Curl Curl Beach Rock Pool
- Flora and Richie Roberts Reserve
- John Fisher Park
- South Curl Curl Beach Rock Pool
- McKillop Park
- Freshwater Beach Rock Pool
- Freshwater Reserve
- Queenscliff Beach Rock Pool
- Aitkin Reserve
- Hinkler Park

D.2.1 DESIGN PRINCIPLES

Beaches and beachfront open spaces are highly used and valued recreational and natural environments within the Warringah LGA and greater northern Sydney region. They provide significant recreational opportunities for a wide range of people and community groups and are a significant draw card from both within and outside the region.

Beachfront reserves and open spaces provide important recreational opportunities whilst also encompassing dune environments vital for healthy beach systems. Objectives should reflect both natural and community requirements, and include:

- Provide a high-quality and durable suite of materials and elements which unify beachfront spaces whilst also allowing for local variation;
- Ensure open spaces allow for inclusive use and occupation;
- Protect natural environments and systems;
- Promote active lifestyles and healthy living;
- Ensure the design responds adequately to the harsh and highly corrosive coastal conditions; high wind, high sun exposure, salt spray impacts;
- Provide planting to landscape zones that support endemic vegetation communities whilst encouraging pedestrian safety and sightlines.

LEGEND



Bushland Parks and Reserves



Suburb Boundaries



Figure 77: Bushland Parks and Reserves

D.3 BUSHLAND PARKS + RESERVES

INCLUDES

- Anembo Reserve
- JJ Melbourne Hills Memorial Reserve
- Dardabong Reserve
- Belrose Reservoir
- Morgan Road Reserve
- Middle Creek Reserve
- South Creek Foreshore
- South Creek Reserve
- Narrabeen Lagoon Foreshore
- Dee Why West Reserve
- Jamieson Park
- Macfarlane Reserve
- Wayne Schimanski Reserve
- Woolrych Crescent Reserve
- Allworth Drive Reserve
- Lady Davidson Reserve
- Fitzpatrick Avenue Reserve
- Jindabyne Reserve
- Forestville Park
- Perentie Road Reserve
- Maybrook Avenue Reserve
- Wakehurst Parkway Reserve
- Nandi Reserve
- Peppercorn Park
- Corymbia Circuit Reserve
- Oxford Falls Peace Park
- Bantry Bay Road Reserve
- Manly Warringah War Memorial Park
- Allenby Park
- Red Hill Reserve
- Golden Grove
- Willandra Reserve
- Government Road Reserve
- Washington Avenue Reserve
- Moonarie Place Reserve
- Cromer Road Reserve
- Lillihina Reserve
- Towradgi Reserve
- McIntosh Road Reserve
- Stony range Flora Reserve
- Wingala Reserve
- Anzac Avenue Reserve

D.3.1 DESIGN PRINCIPLES

Bushland areas of Warringah often border National Parks, and are often adjacent to a water way. For this reason, they have significant value as natural assets, and future design should be consider potential impact of the natural systems.

Bushland Parks and Reserves usually include heavily vegetated areas, with small areas that have been cleared for passive recreational opportunities. These may be BBQ areas, bushland trails and boardwalks, boat launches or walking trails.

There is scope for variation in the design for some of these areas (subject to Council's discretion), but generally most Bushland Parks and reserves should be designed in accordance with the Material Palette.

Design objectives include;

- Provide a high-quality and durable suite of materials and elements which responds to the site specific environmental conditions
- Ensure open spaces allow for inclusive use and occupation where possible
- Protect natural environments and systems
- Promote active lifestyles and healthy living through a range of trails catering for a range of fitness levels
- Provide facilities that respond to user needs of today, whilst also consider increased or changed use over time
- Provide interpretative signage in accordance with Council's signage strategy
- Provide planting to landscape zones that support endemic vegetation communities.

LEGEND



Urban Parks and Reserves



Suburb Boundaries



Figure 78: Urban Parks and Reserves

D.4 URBAN PARKS + RESERVES

INCLUDES

- All other parks and reserves not listed in the Bushland or Beachfront sections

D.4.1 DESIGN PRINCIPLES

Parks and Reserves in Urban Areas of Warringah LGA are highly valued spaces for social and cultural interaction. They are public open spaces, including parks, sporting fields and playgrounds, that are located in close proximity to residential areas. They cater for medium to large numbers of visitors and provide a wide range of activities and recreational opportunities.

A palette of materials has been developed for Parks and Reserves in Urban Areas of Warringah. There are some instances where deviation from this palette is acceptable, to the discretion of Council.

Objectives for design include;

- To encourage active living through integration of open space with walking tracks and bicycle routes
- To encourage use of open spaces and recreational opportunities whilst protecting and conserving endemic flora and fauna communities;
- To provide a unified palette of materials for use in all urban parks and reserves

ELEMENT DESIGN NOTES APPLICATIONS

D.5 MATERIALS PALETTE

Paving + Ground Surfaces

In situ Concrete Paving

	<p>Colour: CCS 'desert buff' oxide</p> <p>Finish: Light broom</p> <p>Edges: 50mm wide edging tool</p> <p>Joints: Installed at right angles to the outer edge of the path.</p> <p>Expansion joints: 10mm thick, full depth of the slab using a preformed jointing material, intervals not greater than 4.8m .</p> <p>Dummy joints: at intervals of 1.2m max. or equidistant between expansion joints</p>	<p>In all Parks and Reserves</p>
	<p>Finish: Light broom</p> <p>Edges: 50mm wide edging tool</p> <p>Joints: Installed at right angles to the outer edge of the path.</p> <p>Expansion joints: 10mm thick, full depth of the slab using a preformed jointing material, intervals not greater than 4.8m .</p> <p>Dummy joints: at intervals of 1.2m max. or equidistant between expansion joints</p>	<p>In Urban Parks and Reserves where path marries in to concrete street footpath</p>

Decomposed Granite

	<p>Cement stabilised decomposed granite or crushed sandstone surface (Aggregate to cement mix appropriate for environmental conditions to prevent scouring)</p> <p>Install with edging surrounds</p>	<p>All Parks and Reserves where applicable</p>
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Boardwalk

	<p>Type: Timber, expanded metal or fibreglass surface, subject to location.</p> <p>Balustrades + fixings: Stainless Steel</p> <p>Consideration must be given to maintenance vehicle loading</p>	<p>In Bushland and Beachfront Parks and Reserves where required</p> <p>Fixings: Stainless steel in Beachfront Areas</p>
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ELEMENT

DESIGN NOTES

APPLICATIONS

Public Domain Furniture

Bench Seat

	<p>Type: 'Town and Park' SSD Metro Aluminium bench seat</p> <p>Armrests: Provided in high pedestrian areas</p> <p>Fixing: Surface</p>	<p>Urban Parks and Reserves</p>
	<p>Type: 'Town and Park' SSD Metro Timber bench seat</p> <p>Armrests: Provided in high pedestrian areas</p> <p>Fixing: Surface</p>	<p>Beachfront and Bushland Parks and Reserves</p>

Table Setting

	<p>Type: 'Town and Park' SSD Metro Timber/ Aluminium table setting</p> <p>Armrests: Provided in high pedestrian areas</p> <p>Fixing: Surface</p>	<p>All Parks and Reserves subject to approval</p>
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Rubbish Bins

	<p>Type: Gossi Park 'Foreshore', Wheel-in bins (or approved equivalent)</p> <p>Colour: 'Ironstone' Powder coat</p>	<p>All Parks and Reserves</p>
	<p>Sulo bin to galvanised steel post</p>	<p>Local Parks</p>

Drinking Fountain + Drink Station

	<p>Type: 'Aquafil' Integrated water refill station and drinking fountain (or approved equivalent)</p>	<p>Regional Parks + regional sporting fields</p>
	<p>Type: Replas drinking fountain</p> <p>Colour: Recycled plastic product (or approved equivalent)</p>	<p>Local Parks</p>

ELEMENT	DESIGN NOTES	APPLICATIONS
Bike Rack		
	<p>Type: Town and Park 'Hoop' (grade 316) stainless steel Bike Rack (or approved equivalent)</p> <p>Fixing: Subsurface fixings</p>	All Parks and Reserves where applicable
Fences		
Recycled Composite Plastic Fence	Post and Rail; black.	All Parks and Reserves where required
Galvanised Steel Rail fence	Recycle black plastic posts Galvanised steel rail	Urban and Bushland Parks and Reserves where required
Koppa Log Fence	Treated pine Koppa Log	In appropriate areas where treated timbers will not react with soils
Steel palisade Fence	Black powder-coated palisade fence with child safe gate to Australian Standards	Playgrounds in all parks and Reserves
Stainless Steel Post and Rail Fence	Marine grade 316 Stainless steel post and rail fence	Rock pools and Beachfront Parks and Reserves
Gates		
Stainless Steel boom gate	Stainless grade 316 tubular steel	Rock pools and Beachfront Parks and Reserves
Galvanised Steel boom gate	Galvanised tubular steel	Urban and Bushland Parks and Reserves where required
Bollards		
Galvanised Steel	Galvanised tubular steel	Where required in Bushland and Urban Parks and Reserves
Koppa Log	Treated pine Koppa Log	Local Parks, Sports fields
Stainless Steel	Stainless steel 316 tubular steel	Prominent recreation areas and Beachfront Parks and Reserves
BBQ		
Stainless steel on sandstone surround	Christies stainless steel double hotplate and top, sandstone block surrounds	All Parks and Reserves subject to approval

ELEMENT**DESIGN NOTES****APPLICATIONS****Lighting**

* Designed to AS2560 Guide to Sports Lighting and AS4282 Control of the Obtrusive Effects of Outdoor Lighting 1997

* All lighting and irrigation systems to have Playstate cellvisor - remote control and monitoring system for field irrigation and lighting, supplied by E State Automation ph.02 9836 2811.

Sports field lighting	Galvanised steel tapered post, to reduce visual prominence	Sports fields
Public domain safety lighting	Installed on galvanised steel post	All Parks and Reserves subject to approval

Landscape Elements**Turf Planting**

	Hardy, low maintenance species should be selected for sports fields.	All Parks and Reserves
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Mass Planting

	Low water-use, hardy, groundcovers, grasses and small shrub species appropriate to the site conditions should be selected whilst ensuring sight lines are maintained	All Parks and Reserves
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Tree Planting

	Species appropriate to the site conditions should be selected. If planted in hardstand, ensure porous paving surrounds are implemented.	All Parks and Reserves
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WSUD Planting

	WSUD planting should be considered within overland flow paths	All Parks and Reserves
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