Warringah Pedestrian Access and Mobility Plan

Warringah Council

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aurecon

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1. Introduction

1.1 Background

The Warringah Local Government Area (LGA) is located on Sydney's northern beaches, between 10 and 27 kilometres from the Sydney GPO, and is home to an estimated 140,000 residents. The Warringah LGA covers an area of 152 square kilometres, including 9 beaches over 14 kilometres of coastline, four lagoons (Narrabeen Lagoon on its northern boundary, Manly Lagoon marking the southern boundary, and Dee Why and Curl Curl Lagoons in between), and 6,000 hectares of natural bushland and open space. At a recent community forum, local Warringah attendees rated "a beautiful, natural environment, with access to the beach and the bush" as the top value (78%) of living in Warringah.

Warringah LGA also contains 55 schools (from large high schools to small primary schools and special schools), 15 shopping centres of varying sizes (with the largest being Warringah Mall and Dee Why town centre), 7 industrial estates, and significant community facilities, attracting Warringah residents as well as visitors from beyond the LGA.

With its relatively high socio-economic rating and low unemployment rate, coupled with its natural attributes described above, Warringah residents generally enjoy an attractive lifestyle. However, Warringah Council has identified the need to improve access and mobility in the LGA and to develop a Pedestrian Access and Mobility Plan (PAMP) for the entire Council area, focussing on 14 town/ local centres that have high levels of pedestrian activity. The reasons that a PAMP is required are listed below (taken from Council's brief):

- *to meet the present and future needs of its residents and visitors;*
- *as part of its Strategic Community Plan 2009 to provide a safe road environment and ensure a coordinated approach to transport planning;*
- *Council is committed to long-term planning for the provision of pedestrian access and mobility to the highest possible standard;*
- *in response to growing concern about the negative impacts of car use, Warringah Council has developed a series of policy documents and plans emphasising the need to promote and plan for alternatives to the private car, such as walking;*
- *the increased pedestrian activity in town centres , beaches, and other recreational areas highlights the need to develop a PAMP for each of Council's 14 town centres.*

Warringah Council engaged Aurecon Australia Pty Ltd (Aurecon) to prepare a Pedestrian Access and Mobility Plan (PAMP) for its 14 town centres (as listed below) and additional areas that have high levels of pedestrian activity, as illustrated in Figure 1.1.1. Council also wanted the PAMP to look at the whole Warringah LGA in general.

A consolidated list of the 14 town centres and the additional areas of high pedestrian activity was put together, and these have become the 20 PAMP Focus Areas (see Table 1.1.1 on the following page).

To fulfil its brief, Aurecon has identified prioritised pedestrian routes and suggested improvements to pedestrian access within the identified 20 focus areas, as well as important pedestrian links beyond the focus areas – to schools, surrounding residential areas, beaches, parks, industrial areas, etc, or along popular recreational routes – thereby producing an LGA-wide PAMP Pedestrian Network framework.

This PAMP network framework can then be a basis on which additional new routes can be identified as land-use, community needs, and the environment changes.

Table 1.1.1 Warringah PAMP town centres and Focus Areas

Council's 14 town centres		PAMP Focus Areas	
		1.	Allambie Heights
		2.	Allambie Grove
1.	Glen Street Village (Glenrose)	3.	Belrose
		4.	Belrose Austlink
2. 3.	Warringah Mall Pittwater Road, Brookvale	5.	Brookvale
4.	Collaroy	6.	Collaroy
		7.	Collaroy Plateau
		8.	Cromer
		9.	Cromer Heights
5. 6.	Dee Why Town Centre The Strand, Dee Why	10.	Dee Why
7.	Forestville Village	11.	Forestville
		12.	Killarney Heights
8.	Forestway Shops	13.	Forestway
		14.	Frenchs Forest
9.	Freshwater Village Town Centre	15.	Freshwater
10.	Condamine Street, Manly Vale	16.	Manly Vale
11. 12.	Pittwater Road, Narrabeen Narrabeen Village	17.	Narrabeen
		18.	Narraweena
13.	North Balgowlah	19.	North Balgowlah
14.	Terrey Hills	20.	Terrey Hills

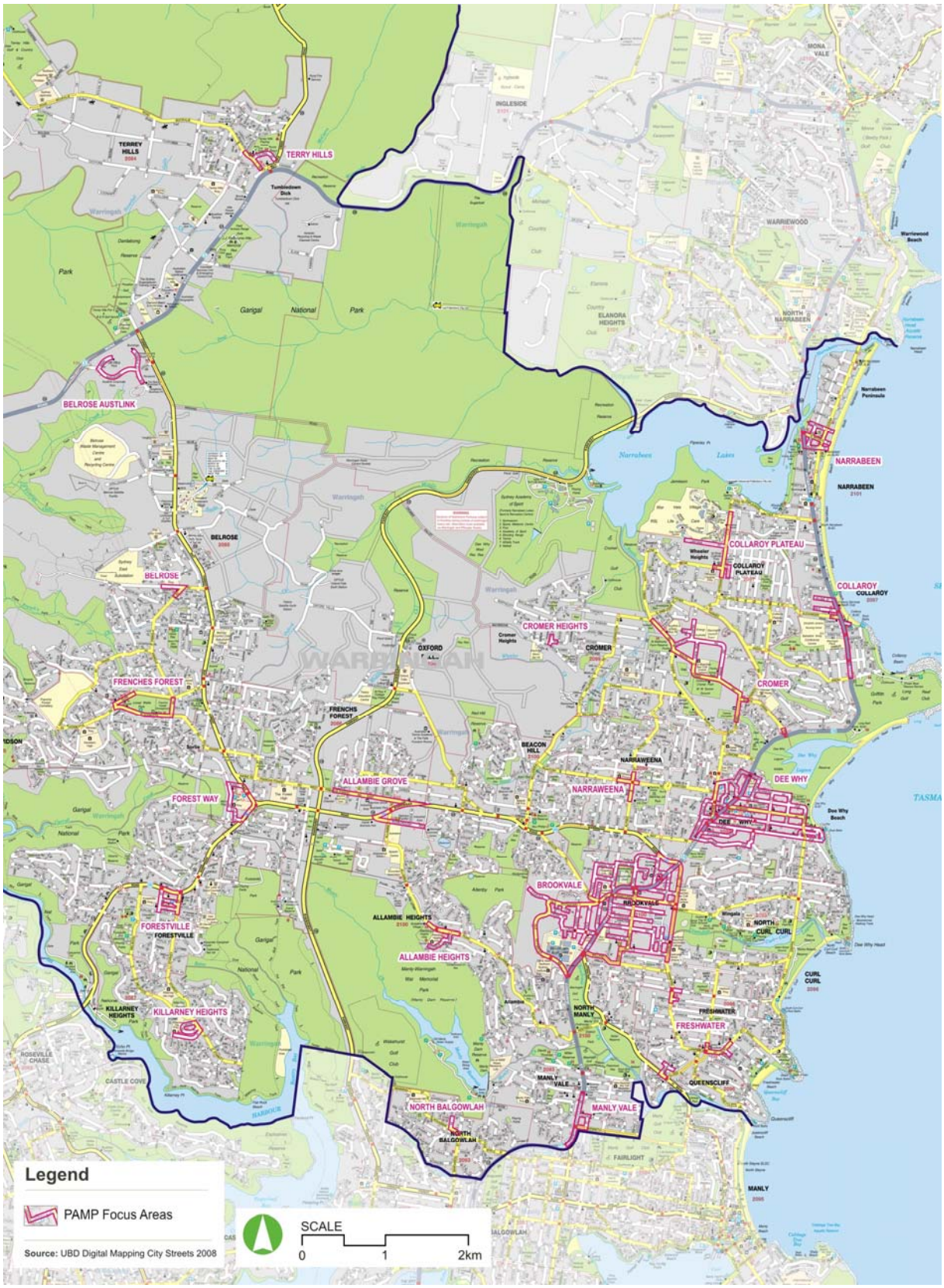


Figure 1.1.1: Focus Areas

1.2 Warringah's Vision for Pedestrians

Council's stated key objectives of the Warringah PAMP study are:

- To improve pedestrian access throughout the whole Warringah LGA particularly in focus areas identified by Council as having high volumes of pedestrians;
- To improve facilities for the whole community - including for people with a disability, parents with prams, the elderly, and all user groups with specific needs - through the provision of enhanced infrastructure and facilities;
- To provide links with other transport modes including bus stops;
- To facilitate the integration of walking as a legitimate mode of transport and discourage the use of private motor vehicles for short trips; and
- To identify opportunities for recreational walking.

The preparation of this PAMP is an important step towards achieving Warringah Council's aspiration to be ***a fully inclusive and accessible community***, including a commitment to providing high quality pedestrian facilities for its residents and visitors, and to encourage walking as a sustainable and legitimate mode of transport. To achieve this, Council aims to:

- **Provide a continuous accessible path of travel linking key places and public transport stops throughout the LGA**, with well-maintained footpaths (including shared paths), safe and convenient crossing locations, effective directional and information signage at a scale appropriate for pedestrians to key landmarks and attractors (such as shopping centres, recreational areas, community facilities, schools);
- **Improve the environment around pedestrian footpaths** so that it is safe for, and conducive to, walking, with active frontages, opportunities for casual surveillance, provision of good non-glare lighting, seating or rest areas, frequently-maintained vegetation, and clear of obstructions;
- **Support or lead programs that encourage walking and cycling** to replace trips that would otherwise have been made by private motor vehicles.

Key performance indicators are:

- **An increase in walking to work, education, shops, community facilities and social/ recreational activities** across all age groups (other than very young children) and all levels of ability;
- **Continued popularity and prevalence of walking** as a recreational activity in its own right.

The Steering Group acknowledges that these are medium to long-term goals, but steps can be taken immediately and persistently over time, to accelerate the achievement of this vision. The outcomes of this PAMP, if implemented, will improve the pedestrian network throughout the Warringah LGA.

1.3 PAMP Methodology Outline

The methodology undertaken for this PAMP is separated into three broad stages, as recommended in the New South Wales Roads and Traffic Authority (RTA) Guidelines, *How to Prepare a Pedestrian Access and Mobility Plan* (2002). This RTA methodology is illustrated in Figure 1.3.1 below.

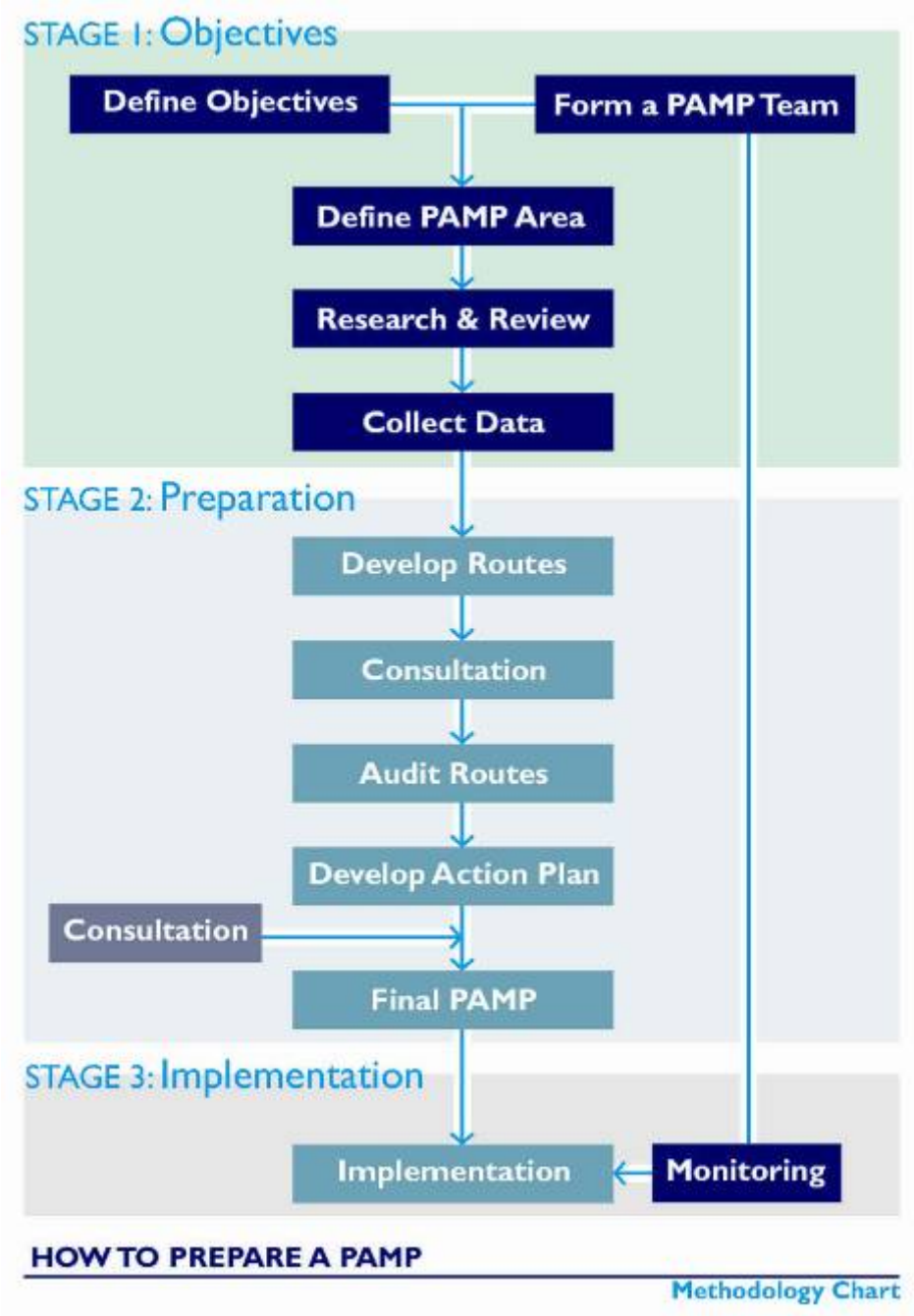


Figure 1.3.1: PAMP methodology

The Warringah PAMP prioritises areas for improvement to facilitate a coordinated approach to pedestrian provision. It outlines not only physical measures, but also encouragement and education programs, coordinates with other Council plans and is consistent with State Government directions and plans.

1.4 Useful Definitions

Pedestrian – Everyone is a pedestrian at some time, even if just walking from the car to a destination. In this PAMP, pedestrians include:

- A person on foot – all ages, ably or with an impairment (for example, using a cane, guide dog, walking frame, crutches; or with assistance from another person);
- A person using a wheelchair;
- A person pushing a pram, shopping trolley, wheelchair etc;
- A person using a motorised wheelchair or mobility scooter (that is limited to 10km/h);
- A person using a wheeled recreational device or wheeled toy.

Pedestrian attractor – In the simplest form, an attractor is a destination (whether built or natural) that attracts people, for example: a shop, shopping centre, beach, park, school, bank, post office, library, medical centre, office, or workplace. Below is a list of the types of attractors that are found in the Warringah LGA:

- ***Retail/commercial attractors***: including shopping centres (such as Warringah Mall, Forestway Shopping Centre); town centres (such as Dee Why, Freshwater, Collaroy); shopping strips (such as The Strand, Skyline Shops); village centre/ local shops (such as such as Forestville Shopping Village, North Balgowlah shops, Terrey Hills shops).
- ***Commercial/industrial attractors***: including offices, banks, smash repairs, salvage yards, business parks (such as Skyline Business Park and Austlink Corporate Park), and industrial areas (such as Winbourne Park, and sections of Brookvale and Cromer).
- ***Recreational attractors***: including the beaches and lagoons, Narrabeen Lakes, Manly Dam; National Parks (Garigal and Ku-ring-gai); sporting ovals and fields (such as Brookvale Oval, Cromer Park, John Fisher Reserve, Forestville War Memorial Playing Fields); local parks and reserves; golf courses, aquatic centres/ swimming pools; multi-use trails and walking/cycling paths (such as Bicentennial Walking Track, Narrabeen Lakes shared path).
- ***Educational facilities***: including day care centres, preschools, primary schools, secondary schools, tertiary education facilities (such as Northern Sydney TAFE).
- ***Community facilities***: including libraries, Council offices, community health centres, disability services (such as The Cerebral Palsy Alliance), community youth centres, community gardens.
- ***Health and medical facilities***: including doctors' surgeries, dentists, alternative health practitioners, medical centres, hospitals.
- ***Public Transport stops***: including bus stops, taxi ranks, community service vehicles.

Pedestrian generator – In the simplest form, a generator is where people live, and from where they commence their trips. Generators then are largely residential areas which can be classified as:

- ***Low density housing***: includes detached houses (these are the most common type of housing in Warringah, with over 70% of households living in a detached house), and semi-detached houses ('semis', uncommon in Warringah);
- ***Medium density housing***: villas, townhouses; definition as per the RTA Guide to Generating Developments is at least 2 but less than 20 dwellings; many congregating along Pittwater Road and Warringah Road; this higher-intensity housing is usually located close to strong attractors, such as town centres with express public transport stops and/or nearby beaches,

- ***High-density housing***: apartment blocks, flats, units; definition as per the RTA Guide to Generating Developments is a building containing 20 or more dwellings; generally found within or very close to town centres such as Dee Why, Manly Vale, Freshwater, Collaroy, and Narrabeen;
- ***Aged care facilities***: nursing homes, retirement villages, self-care or assisted care units; these residences for the elderly can range from the small to the very large (such as the War Veterans Retirement Village), and can cover a broad range of care needs and mobility abilities: from people who can walk well or with minimal assistance, to those who need a wheelchair or mobility scooter. Most residents at these facilities rely solely on others for driving, so it is important to provide accessible pedestrian facilities to nearby shops, library, or parks, to allow residents some autonomy in their personal mobility.
- ***Accessible housing***: these residences allow for semi-independent living for people with some form of developmental disability (for example, The Spastic Centre and Sunnyfield Association in Allambie Heights); accessible pedestrian paths and safe crossings to nearby facilities such as shops, parks, swimming pools, a community centre, or bus stops are important for fostering and maintaining independence.
- ***Public transport stops***: considered both pedestrian attractors and generators: bus stops and taxi ranks are attractors because people travel to these locations for further travel (forming part of their trip); public transport stops are also generators because pedestrians are generated from these locations, from outside the area.

Some focus areas in the Warringah LGA may have a mixture of the generators types within a close proximity of one another (such as Dee Why, with its range of retail/ commercial and recreational attractors; educational, community, and health & medical facilities; and public transport), while others may be smaller with fewer attractors (such as North Balgowlah, with just its retail/ commercial attractors) but require links to the wider area.

User groups with specific needs *[this replaces the term 'vulnerable users' by Council request]* – in the context of the pedestrian environment, user groups with specific needs include:

- Children;
- A person who requires assistance with walking (for example, using a guide dog, cane, walking frame, crutches or assistance from another person);
- A person using a manual wheelchair;
- A person pushing a pram, shopping trolley, wheelchair etc;
- A person using a motorised wheelchair or mobility scooter (that is limited to 10km/h);
- Cyclists, particularly learner cyclists and child cyclists.

2. Characteristics of Warringah LGA

This section outlines key characteristics of the Warringah LGA that impact on pedestrian demand and provision, including:

- **Population overview** – current and likely future demographics.
- **Key pedestrian attractors and generators** – Brookvale-Dee Why town centre, recreational areas, local village and neighbourhood centres, business parks and industrial areas, residential areas, community facilities;
- **Travel and movement infrastructure** – travel characteristics, traffic & road hierarchy, public transport, taxis and community transport, cycle provision, walking facilities.

2.1 Population Overview

2.1.1 Current Demographics

The population of the Warringah LGA was 133,900 on the night of the 2006 Census. The projected growth of the LGA is 6.4% by 2031, increasing the population by 8,565 to approximately 144,000.

The latest *Warringah Council Social Plan* (adopted June 2010) outlines the following community profile (changes between 2001 and 2006 Census, unless otherwise specified):

- The population of Warringah has grown at every Census since 1996, but at a lower rate than the Sydney average.
- The number of 35-49 year olds experienced the biggest increase in numbers of all age groups in Warringah, and the number of children has also increased (by 8.5% since 1996), higher than the Sydney average (of 8.1% since 1996).
- Older people continue to increase as a proportion of the Warringah population, with 15% aged over 65 (slightly higher than the Sydney average).
- There has been a decrease in the number of young people (12-24 year olds) and the overall working age population (15-54 year olds) has also declined – therefore, the "old age dependency ratio" has increased.
- Warringah has a higher and increasing proportion of family households (70.2%) and lone households (22.4%) compared to the Sydney average (68.6% and 21.8% respectively);
- High-density dwellings showed the largest increase in type of dwellings occupied by households in Warringah, but the proportion of housing types in Warringah is similar to Sydney as a whole, with 22% in high density dwellings, 13.4% in medium density dwellings, and 57% in a separate house.
- Overall, Warringah has a higher than average weekly household income, and a relatively low unemployment rate. However, there are pockets of disadvantage, particularly in the suburbs of Narraweena, Brookvale, Dee Why, Manly Vale, and Narrabeen.
- In the 2006 Census, 3.2% of Warringah's population reported needing assistance with core activities (such as eating, dressing, travel/ movement), compared with 3.8% across Sydney.
- The Australian Bureau of Statistics' (ABS) Survey of Disability, Ageing and Carers (SDAC) in 2003 found that 17% of the population in NSW had a disability (defined in the SDAC as "one or more of 17 impairments, activity limitations, or participation restrictions that have lasted, or are likely to last, for at least 6 months and restrict everyday activities."). The life expectancy of people with a disability has also increased in the last 10 years.

- With the proportion of older people in Warringah LGA increasing, and longevity increasing, it can be expected that the number of Warringah residents with a disability and needing assistance with movement will increase over time.

2.1.2 Potential Future Demographics

State Government planning

The Warringah local government area is part of NSW Planning's Metropolitan Strategy North East Subregion, which also includes Manly and Pittwater Council areas. Warringah Council is currently in the process of developing its Housing Strategy, based on the dwelling growth requirement identified in the North East Subregional Plan.

Population projections indicate that in the North East subregion, the population over 65 years of age is likely to grow from 33,170 (14.3 per cent of the total population) to 50,510 (19.6 per cent), from 2001 to 2031 (Bureau of Transport Statistics (formerly TPDC) 2004).The Metropolitan Strategy identifies the need for an additional 17,340 dwellings to be accommodated in the North East Subregion (an overall increase of only 5.3 per cent) by 2031, and of that, for Warringah LGA to accommodate 10,300 dwellings by 2031 (or an additional 343 dwellings per year between 2001 to 2031).

The Metropolitan Strategy also highlights that enabling residents to 'age in place' is an issue for the North East subregion. As the population ages, it is likely that the average number of people per household will continue to decrease, and the ageing population is likely to contribute to the need for greater housing choice and generate demand for higher density housing with good access to services and public transport.

Warringah's Housing Strategy development

Warringah Council has been evaluating options to determine how it can accommodate the 10,300 new dwellings by 2031, as outlined in the State Government's North East Subregional Strategy. Given the anticipated community interest in shaping the development of housing over the next 25 years, Council developed a comprehensive plan to engage with the Community on this issue.

A major part of this ongoing consultation process, was "Talk of the Town 2010 – Warringah's Housing Future" – a major community summit and a key element of Council's community engagement process in developing preferred directions for dwelling growth. The Summit was held in May 2010, with 440 local residents participating.

From the twelve locations Warringah Council put forward for accommodating some dwelling growth, participants selected four locations which they thought growth would best service the community. The four locations are: Narraweena, Frenchs Forest, Manly Vale and Forestville. However, these may not be the final residential growth areas agreed upon by Council and the broader community, and the number of dwellings targeted for each location has also not been agreed. Therefore, it is not possible at this stage to identify the pedestrian network, nor the specific PAMP works required to support future residential growth areas. However, general pedestrian policy guidelines and facilities criteria will be provided in this report that can be used to provide for better pedestrian access and mobility in all future developments.

Council has stated that its next step is to develop a Housing Directions paper for broader community and stakeholder participation and input. Key opportunities for the PAMP with regard to development of the Warringah Housing Strategy are:

- Integrate Council's strategic planning projects with PAMP recommendations. Council should consider planning for residential growth areas to have good pedestrian and cycle provisions, linked to Primary or Secondary PAMP routes. Growth areas should be supported by pedestrian and cycle networks to town/village centres, workplaces, community facilities, schools, public transport, and recreation.

- When the Warringah Housing Strategy is adopted, the PAMP should be updated by reviewing the pedestrian network in and around the proposed housing growth areas and developing additional pedestrian priority routes to link the housing growth areas to their town/local centres, schools, public transport, recreational routes and facilities, and other important attractors.

2.2 Key Pedestrian Attractors and Generators - Introduction to the LGA and 'Focus Areas'

Residents and visitors are attracted to the Warringah LGA by the casual lifestyle offered by the area, with its beaches, natural bushland, urban amenities, job availability and relatively close proximity to the city.

The terrain throughout the LGA is characterised by plateaus and ridges, dropping steeply towards the coast, lagoons, and creeks. While there are many parts of the LGA that are relatively flat, it is the prevalence of steep terrain that can be a major hindrance to the provision of a continuous, accessible path of travel throughout the LGA.

The east of the LGA is characterised by a series of town centres – Narrabeen, Collaroy, Dee Why, Brookvale, Freshwater – in close proximity to beaches and lagoons, but oriented around the arterial road (Pittwater Road/ Condamine Street). There are more units and apartments around these centres, taking advantage of good access to public transport (buses) and the combination of urban and coastal lifestyle opportunities.

Inland from the coast, the density of land use is lower. There are fewer town centres and more village and neighbourhood centres or stand-alone shopping centres. Housing is lower density, and activities are more dispersed.

Within each of the 20 focus areas identified by the Council, there are a number of pedestrian attractors and generators, generally comprising a combination of residential, educational, commercial, retail and industrial land uses. It is important that the pedestrian facilities in and around these centres are built to cater for a broad range of pedestrian activities.

2.2.1 Major Centre – Brookvale & Dee Why

Brookvale and Dee Why are the 'twin' major centres in Warringah LGA, both straddling Pittwater Road and less than two kilometres apart. The NSW Government's Metropolitan Strategy identifies Brookvale-Dee Why as the only 'Major Centre' for the North East subregion (an area encompassing the LGAs of Warringah, Pittwater, and Manly). Brookvale-Dee Why is therefore the major centre of the Northern Beaches.

Brookvale-Dee Why is identified as a major centre in the State Government's 30-year Metropolitan Strategy: North East Subregional Strategy. Dee Why is slated to develop as a highly liveable town centre and Brookvale is to be investigated for protecting and intensifying further employment lands. To this end, council officers are currently developing a Masterplan for Dee Why Town Centre and a detailed strategy for Employment Lands in Brookvale.

Warringah Mall in Brookvale is the regional shopping centre for the Northern Beaches, with a retail floor space of around 103,000 square metres. The Mall is a major attractor, if not the biggest single attractor, in Warringah LGA. However, most pedestrian activity occurs within the Mall itself: it is surrounded by car parking and has little relationship with the rest of the dispersed Brookvale centre.

The rest of the Brookvale centre is largely characterised by the commercial/ industrial areas to the east of Pittwater Road, and north and west of Warringah Mall. The commercial/ industrial area around Warringah Mall has little relationship with the Mall and is physically separated by the parking areas surrounding the Mall, and an 'enterprise corridor' (of largely car yards and 'big box' retail development) along Condamine Street/ Pittwater Road towards Dee Why. The Northern Sydney Institute of TAFE is just south of Warringah Mall, and Brookvale Oval is less than one kilometre north on Pittwater Road.

Eastward from Condamine Street, there are two Northern Beaches College campuses and a string of playing fields in John Fisher Park (on Abbott Road) towards Curl Curl Lagoon and Curl Curl Beach.

Dee Why is a more traditional town centre, with a broad range of attractors and a more pedestrian-friendly scale. However, Pittwater Road bisects the town centre and the high-volume, high-speed traffic environment is not conducive to pedestrian amenity or safety, which in turn affects business activity. Back from Pittwater Road towards Dee Why Beach there are some small shopping centres (Dee Why Square and Dee Why Centre), retail and commercial businesses, a post office, and a library. On the western side of Pittwater Road, there are council offices, another library, a medical centre, and retail and commercial businesses.

The Dee Why Beach area is another strong pedestrian attractor in Dee Why. It includes a shopping/commercial strip on The Strand, which contains many cafes and restaurants, reflecting the social and recreational amenity of the Dee Why beach area. There does not seem to be a strong relationship between Dee Why town centre and Dee Why Beach, about 800m to 1 km away (which represents a 15-20 minute walk for an able-bodied adult) via Dee Why Parade, Howard Avenue, or Oaks Avenue.

Key opportunities for Brookvale-Dee Why include:

- With its identification as a twin Major Centre for the North East subregion in the NSW Government's Metropolitan Strategy, there is a great opportunity for the urban environment of the Brookvale-Dee Why centre to be upgraded significantly – particularly with regard to the pedestrian environment along Pittwater Road; between Dee Why town centre and Dee Why Beach; and between Brookvale and Curl Curl Beach via Abbott Road. These are detailed in Sections 7.5 and 7.10.
- There is also opportunity to improve pedestrian links between the Brookvale-Dee Why Major Centre and nearby town/ village centres, such as Manly Vale, Queenscliff, Freshwater, Narraweena, Cromer and Collaroy.

2.2.2 Recreational Areas

The Warringah LGA offers a wide range of recreational environments and experiences to its residents and visitors. There are natural attractions, such as beaches and cliff lines along the coast; lagoons, lakes, creeks, and Manly Dam further inland; and National Parks (Garigal and Ku-ring-gai Chase), reserves and natural bushland throughout the LGA. The LGA also contains formal parks and playgrounds; as well as playing fields, ovals, golf clubs and sports centres for organised sports.

The recreational attractors in Warringah LGA include:

- *Garigal and Ku-ring-gai Chase National Parks* – extensive walking track systems along ridges, gullies and waterways, fire trails for use by mountain bike riders, some horse trails, picnic areas and lookouts;

- *Beaches, ocean baths, and headlands* – extending from Narrabeen Peninsula in the north to Queenscliff in the south (includes the beaches of North Narrabeen, Narrabeen, Collaroy, Fishermans, Long Reef, Dee Why, North Curl Curl, Curl Curl, and Freshwater; and headland walking tracks at Long Reef, Dee Why Head, and Lumsdaine Drive)
- *Narrabeen Lakes* – recreational water activities, multi-use trail, picnic areas;
- *Warringah War Memorial Park (Manly Dam)* - recreational water activities, picnic areas, informal walking trails;
- *Dee Why Lagoon and Wildlife refuge, Curl Curl Lagoon*;
- *Warringah Aquatic Centre* – indoor and outdoor heated swimming pools, learn-to-swim and social programs;
- *Sydney Academy of Sport* –athletics track, pool, gymnasium, Aquatic centre - for sailing, canoeing and kayaking, netball and tennis courts, multi-purpose ovals, kiosk and picnic areas;
- *Brookvale Oval*– stadium hosting sporting fixtures which draw large crowds, including games for the Manly-Warringah Rugby League club
- *Cromer Park* – sports stadium used for soccer, cricket, rugby, jogging;
- *John Fisher Reserve* – with playing fields, ovals, sports centre, and Youth & Community centre;
- *Golf Courses* – including Cromer, Long Reef, Terrey Hills, Wakehurst and Warringah Golf Clubs;
- Many other sports clubs, playing fields, clubs, parks and reserves throughout the LGA.

The natural environment and relaxed lifestyle is a significant attractor for people who settle in Warringah LGA. Findings from the Residents Telephone Survey of 2008 (see discussion on Warringah Council's *Recreation Strategy* in Section 3.1.3) supports anecdotal advice that many Warringah residents enjoy walking for recreation. There was also observed use of cycle paths, particularly along the coastal areas of Freshwater, Curl Curl, Dee Why, and Narrabeen.

Providing good pedestrian paths throughout the LGA, and in particular along key recreational access routes, could assist in minimising car trips by encouraging people to walk to where they play.

2.2.3 Local Village and Neighbourhood Centres

Besides the major centre of Brookvale-Dee Why, Warringah LGA contains a number of village and neighbourhood centres. The larger of these tend to be located along the eastern coastal areas where the population is denser and able to support more retail and commercial activities. The local centres serving these population concentrations are in the mould of traditional town centres: street-based, with local retail, banks, post office, and perhaps a shopping centre and a library or other community facilities.

These traditional centres need to be supported by good pedestrian facilities to encourage people to undertake multiple activities within the town/ village centre and thereby support local business activity. These focus areas identified by Warringah Council are:

- Narrabeen
- Collaroy
- Collaroy Plateau
- Freshwater
- Manly Vale

Inland from the coastal areas, some local centres consist of a single shopping centre with extensive parking. In these cases, pedestrian requirements are for access from the local residential area to the

shopping centre, preferably without having to navigate through a car park without dedicated pedestrian pathways. The challenge for these local centres is to improve pedestrian amenity by active street frontages – for example, with cafes, restaurants, newsagencies – and localised traffic calming. These focus areas identified by Warringah Council are:

- Forestville
- Forestway
- Frenchs Forest
- Allambie Grove (Skyline Shops)
- Allambie Heights

Other pedestrian attractors are neighbourhood centres which consist of a few shops and commercial premises, and include:

- Terrey Hills
- Belrose
- Killarney Heights
- North Balgowlah
- Narraweena
- Cromer Heights

2.2.4 Business Parks and Industrial Areas

Employment precincts such as business parks and industrial areas in Warringah LGA, like in most areas of Sydney, need to be protected and supported. Four industrial areas/business parks have been identified as focus areas for this PAMP:

- Austlink Corporate Park, Belrose
- Allambie Grove business parks (part of Allambie Grove focus area)
- Cromer industrial area
- Brookvale industrial areas (part of Brookvale focus area)

Key opportunities for the PAMP regarding employment precincts include:

- A challenge for business parks and industrial areas is to acknowledge that while clients and suppliers may need to access the site by private vehicles (whether car, truck or semi-trailer), encouraging and supporting staff to use public transport, walking or cycling has the benefits of minimising staff car parking requirements, and improving staff health by increasing their physical activity.
- Council can support these actions by strengthening planning provisions for employment areas by requiring them to be served by public transport, and have good pedestrian and cycle links. Council should also consider encouraging a mix of uses (such as a variety of cafés or sandwich shops, newsagents/ post office agents and convenience stores). These measures would encourage use of public transport, walking and cycling to work and other local services, thereby minimising car trips.

2.2.5 Residential Areas

While the low-density housing character and high quality housing stock within many areas of the Warringah LGA is highly valued by residents, increasingly there is demand for a broader mix of housing types, including medium- and high-density housing. This is driven by housing affordability, the long-term trend towards smaller household sizes, and the population wanting to 'age in place'.

The eastern coastal part of Warringah LGA tends to contain the larger local centres and denser population concentrations. Council's land use map clearly shows the higher-density residential areas along the eastern corridor (primarily along Pittwater Road and/or near the beaches) at Narrabeen, Collaroy, Dee Why, Freshwater, Queenscliff, and Manly Vale. Public transport access along this eastern corridor is also better, with many local and express bus services serving the eastern north-south spine, linking the Northern Beaches to Sydney CBD.

The middle-inland part of Warringah LGA is largely characterised by low density housing interspersed with small village centres.

Key objectives that are particularly relevant to residential areas are "improve pedestrian access throughout the whole Warringah LGA", "to facilitate the integration of walking as a legitimate mode of transport and discourage the use of private motor vehicles for short trips," and "to identify opportunities for recreational walking"

2.2.6 User groups with specific needs' Facilities

User groups with specific needs include children, parents with prams, people with mobility disabilities, and the elderly/ frail. User groups with specific needs' facilities are those facilities/ locations where there is likely to be a concentration of user groups with specific needs. In Warringah LGA these would include:

- Schools and colleges
- Childcare facilities
- Nursing homes
- Retirement villages
- Community facilities and centres (including libraries)
- Disability service providers
- Playing fields and sports facilities
- Parks, beaches, and other recreational areas

In most of the focus areas identified for this PAMP, there are vulnerable user facilities either within them, or nearby. The challenge is therefore to provide safe and accessible paths of travel between vulnerable user facilities and nearby local centres and recreational areas/ paths. In fact, to ultimately fulfil Warringah Council's aspiration to be a "fully accessible city", all areas in the LGA need to be considered user groups with specific needs' facilities.

2.3 Travel and Movement Infrastructure

The travel choices and existing movement infrastructure provision has important implications for future pedestrian needs and demand of people in Warringah LGA.

2.3.1 Travel Characteristics

According to the Census, for the journey to work (JTW), the majority of the Warringah population relies on private vehicles (includes car as driver or passenger, truck, and motorbike) to travel to work

(65.7%), whether for part or the entire trip, and 14.8% of the population uses public transport (including buses, train, ferry, taxi) for all or part of their trip to work.

While the Census captured only 4.8% of the Warringah population as using non-motorised transport as their main mode for the journey to work (with 3.4% walking to work, and 0.7% cycling), some of the public transport trips would include walking (or cycling) – to the bus, rail, or ferry stop – as part of the trip.

In addition, it should be noted that the Journey to Work data captured by the Census does not reflect non-work trip characteristics, which are largely undertaken during off-peak periods throughout the bulk of the day (and night). Nor does it capture trips by children aged under 15 years – hence it does not include walking or cycling to school, for example.

2.3.2 Traffic and Road Hierarchy

The Warringah LGA consists of various road hierarchies that interconnect the suburbs of Warringah and neighbouring LGAs. It is important that during the planning process for any development, the hierarchy of the road is considered. The road hierarchy can be used to determine the type of footpaths required, pedestrian crossing designs, location of footpaths and cycle facilities.

The road hierarchy can be separated into four classifications. The table below summarises the role of each road classification, with examples in Warringah LGA.

Table 2.3.2: Road Hierarchy in Warringah LGA

Road Classification	Role	Example in Warringah LGA
Arterial road (State Road)	- For through traffic, where vehicles generally travel a longer distance; - High traffic volumes and high speed (60 km/h or higher); - Carries express bus routes, including Strategic Bus Corridors, and freight routes.	8 arterial roads in the Warringah LGA (eg. Warringah Road, Pittwater Road, Condamine Street). Owned and maintained by RTA.
Sub-arterial road (Regional Road)	- Connects local areas and arterial roads, providing routes for through traffic between arterial roads; - Can have high traffic volumes but slower speed than arterials (50-60 km/h); - Carries bus routes and some freight.	31 sub-arterial roads in the Warringah LGA (eg. Old Pittwater Road, Allambie Road).
Collector street	- Primary function is to “collect” and “disperse” traffic between sub-arterial roads and local streets; - Lower volumes than arterials, but more than local streets, with speed limits generally 50km/h; - Can carry bus routes.	80+ collector roads in the Warringah LGA (eg Oaks Avenue, Frenchs Forest Road).
Local Street	- Primarily as access roads for properties, but sometimes used for ‘rat running’ by cars avoiding more congested roads. - Generally low traffic volumes, and low speed (50km/h speeds or lower).	Majority of the streets in Warringah LGA.

Pittwater Road is the busiest road in Warringah LGA, and it runs through the LGA’s busiest town centres: Narrabeen, Collaroy, Dee Why, and Brookvale. Providing safe and convenient pedestrian crossings within these town centres, in the context of the high volume and speed of traffic on Pittwater Road, is an ongoing challenge for Council and the RTA.

Other key traffic and pedestrian link roads are Warringah Road, Allambie Road, Frenchs Forest Road and Forest Way.

This PAMP highlights the pedestrian crash cluster locations within Warringah LGA (Section 4), and suggests additional crossing points and facilities (Section 7 and Appendix G3).

2.3.3 Public Transport, Taxis, and Community Transport

Bus services

Two bus operators – Sydney Buses (operated by State Transit, a government agency) and Forest Coach Lines (a local private bus company) – collectively cover the majority of the populated areas in the Warringah LGA. Sydney Buses cover the eastern part of the LGA with some links to the western part of the LGA (towards Chatswood), and Forest Coach Lines cover most of the western part of the LGA. There is some cross-over of routes.

There are three strategic bus corridors running through Warringah LGA:

- No. 15: Brookvale to City (L90, approx 40 mins total trip);
- No. 16: Mona Vale to City (L85, L90 – approx 1:15 total trip);
- No. 17: Brookvale to Chatswood (280 – approx 1:00 total trip).

Within the eastern section of the LGA, Pittwater Road/Condamine Street is a major corridor along which the bus routes would either travel on or cross. As a result, there are many high-intensity land uses along this route. Outside of this corridor, the bus routes serve less-intense pedestrian attractors and generators, but still provide a connection between the different land uses that are not located along the major routes.

Sydney Buses has over 1,900 buses in its fleet servicing both Sydney and Newcastle. Currently there are a variety of buses in this fleet shared between the different zones. State Transit's protocol is that all new buses now feature "kneeling suspension" to minimise the step height to get onto and off the bus, and "flat no-step floor" within the bus. Both these features make it easier for people with prams, wheelchairs, or other mobility challenges, to use bus services.

While 54% of the State Transit fleet are wheelchair accessible (June 2009), many buses still are not. Forest Coach Lines also has a number of wheelchair accessible buses in its fleet, but again, this is not a universal provision. Timetables for both bus operators specify whether the service is wheelchair accessible.

Even if the buses themselves are 'accessible', if there isn't an accessible, continuous path of travel from someone's home to the bus stop, and from the destination bus stop to the facility that person wishes to access, then that person still cannot make that trip easily, or at all. Identifying the facilities required for bus stops is recommended as a future piece of work arising from this PAMP (Section 9).

Community transport and Taxis

For those requiring additional assistance, there are three community transport options:

- Manly Warringah Pittwater Community Transport – door to door transport for shopping, social outings and appointments;
- Disabled Alternative Road Travel Service (DARTS) – home pick-up for people living in independent accommodation who have a physical disability and use a wheelchair; provides transport for social outings only; limited capacity; and
- Kaddy Transport – home pick-up for residents who use wheelchairs; provides transport for people with a mobility disability; for social outings only, limited capacity.

There are also ten taxi operators operating in the Warringah LGA. Some taxis are designed to transport passengers in wheelchairs, and these can generally be requested on booking.

It should be noted that the cost of relying solely on taxis is prohibitive for many people, and community transport is not always available at the times or for the trips people may want to make. Hence, providing affordable housing options close to existing footpath provision and public transport stops, and extending the footpath network so people can 'age in place', can allow people with mobility challenges to live in Warringah and enjoy its amenities.

2.3.4 Cycle Provision

Existing provision of cycle paths in Warringah LGA largely consists of the beginning of a network along the eastern corridor, and recreational paths. The extent of cycle paths is currently:

- Along part of Narrabeen Lakes
- From Collaroy Plateau to Collaroy beach and to Cromer, Narraweena, Dee Why, Freshwater, Brookvale;
- Through parts of Garigal National Park, adjacent to Manly Vale and Allambie Heights;
- Through parts of Ku-ring-gai Chase National Park;
- Along Mona Vale Road.

There are currently limited facilities for commuter cyclists, who generally prefer direct routes linking to employment areas (that is, the focus areas identified for this PAMP) rather than the more circuitous routes that are often chosen for recreational routes.

The adopted *Warringah Bike Plan*, discussed in Section 3.1.4 and shown in **Appendix F**, considerably extends the existing cycleway provision into a network that connects most of the pedestrian activity areas included in this PAMP. Some of these routes include shared paths (for cyclists and pedestrians).

The *Warringah Multi-Use Trail Strategy*, discussed in Section 3.1.5 and shown in **Appendix F**, includes additional proposed multi-use trails that would further add to the coverage of cycle paths, including a regional coastal multi-use trail connecting the beaches.

2.3.5 Walking Facilities

Council acknowledges that, for a well-established urban area, Warringah does not have extensive footpath coverage. While this may have suited the relaxed coastal and quasi-rural lifestyle aspirations of its residents, increasingly there is demand and need for more extensive footpath coverage that caters for all levels of mobility.

Many streets in the town and village centres throughout Warringah LGA have footpaths on both sides of the street, and some of the main collector and local roads in residential areas have at least a footpath on one side of the street. However, there are parts of the LGA where there are no footpaths, or where the existing footpaths are too narrow or obstructed for wheelchair or pram access, or even for able-bodied persons.

The design of footpaths, kerb ramps, and pedestrian crossing points is also inconsistent through the LGA. With the increasingly ageing population and growing prevalence of use of motorised wheelchairs and mobility scooters, the design minimum footpath width of 1.2m will need to be increased to accommodate these wider mobility aids. At the other end of the age spectrum, prams for babies are also tending to be wider, which adds to the need for increasing the minimum width of footpaths, to allow pedestrians using prams or wheelchairs/scooters to pass each other. Recommended design guidelines are discussed in Section 8.

Directional and information signage, lighting, and street furniture can have a great impact on the accessibility of the pedestrian environment. Providing directional signage from residential areas to the nearest town centre or nearby attractors – perhaps with distance information also - can encourage people to walk or cycle there.

Providing maps and information signage within town centres and near public transport stops can help people find key facilities, make walking or cycling to/from/within the town centres more attractive, and highlight preferred access routes to/from the town centres and recreational walking/ cycling routes. The Warringah Regional Multiple-use Trail Strategy (see Section 3.1.5) includes suggested trail signage which could be adapted to cover pedestrian and cycle routes.

Provision of seating along pedestrian routes can make walking more attractive by providing opportunities for rest stops, a place to pause and enjoy the view, or to wait for a bus (where seating is located at a bus stop).

Council has recently undertaken a signage inventory of the Warringah LGA. It is recommended that Council build on this and develop Public Domain Plan that identifies preferred siting and designs for directional and information signage, lighting, seating, public art, bike parking, bus stops, landscaping, etc. Improving the public domain, coupled with providing a connected pedestrian network, can have a significant impact in encouraging greater walking and cycling to local shops and thereby support local businesses.

2.4 Future Pedestrian Needs

The Warringah LGA offers numerous opportunities for people wanting to live in a quiet area of Sydney with the benefits of coastal proximity and urban amenities.

As indicated in Section 2.1, the majority of the population of Warringah are over 55 years old, or young families. Level footpaths and appropriate crossing facilities are a necessity to promote walking (especially for short trips) over other transport modes. Any new development should include facilities that provide high-quality amenity for pedestrians. This should be adopted as an integral component of the planning and approval process.

With the increasing number of people with a disability and people needing assistance with core activities, pedestrian facilities need to be designed to accommodate a broad range of mobility aids and increasing number of them in use – hence wider footpath and kerb ramp requirements. Anecdotally, Council is aware that many families with a child with a disability are attracted to Warringah because of the many service providers in the area.

Additional reasons for Council needing to prioritise pedestrian network (footpaths, kerb ramps, safe crossings, lighting, signage) provision include:

- The health and physical activity benefits of walking for all ages, amidst a growing obesity problem;
- The trend towards smaller households (of 1-2 persons) could increase feelings of isolation, particularly for the elderly who may no longer have access to alternative independent transport – a footpath to local shops or recreational facilities can reduce the isolation by at least providing the physical facility to be able to connect with the community;
- Popularity of ‘walking for recreation and enjoyment’ for Warringah residents;
- Growing traffic congestion can be counteracted by encouraging people to walk, cycle, or catch public transport to work, to school, to the shops or to recreation – all of which need to be supported by an extensive, continuous, accessible footpath network, connecting where people live, to their bus stop, schools, local parks/ beaches, local shops, etc;
- Some existing footpaths, kerb ramps, and crossings are unsafe for many users, with trip hazards or poor design – upgrading and improving these facilities can encourage greater use;

- With the increasing proportion and number of children, people 65+ years, and people with a disability in Warringah LGA, providing pedestrian networks that link residential areas with education, social and recreational facilities and opportunities, and local town/ village centres, will be particularly important to provide access to these facilities and for social equity.

3. Literature Review

This section contains a summary of the relevant aspects of State and Local government documents reviewed for the preparation of the Warringah PAMP. The documents reviewed include:

- Warringah LGA Draft LEP & DCP 2009
- Warringah Social Plan 2009
- Recreation Strategy 2009
- Warringah Bike Plan
- Warringah Regional Multi-use Trail Strategy, 2007
- Council's infrastructure Database – footpath requests assessment
- Warringah Council Development Control Plan
- Planning Guidelines for Walking and Cycling
- Healthy by Design: a planners' guide to environments for active living
- Disability Discrimination Act (DDA) 1992

3.1 Council Documents

3.1.1 Warringah LGA Draft LEP & Draft DCP

Warringah Council's Draft Local Environment Plan (LEP) is currently being reviewed by NSW Department of Planning. The associated Draft Development Control Plan (DCP) includes the following controls that are relevant to the Warringah PAMP:

Draft DCP Part D Design: D18 Accessibility – This control applies to all development for non-residential purposes on land shown on the Draft DCP Map "Warringah LGA".

Objectives

- *To ensure vehicular access points for parking, servicing or deliveries, and pedestrian access are designed to provide vehicular and pedestrian safety.*
- *To ensure convenient, comfortable and safe access for all people including older people, people with prams and strollers and people with a disability.*

Requirements

- *The design is to achieve a barrier free environment with consideration given to the design of door handles and switches, entrances and corridors. Steep, rough and slippery surfaces, steps and stairs and narrow paths should be avoided.*
- *There are to be continuous, independent and barrier-free access ways incorporated into the design of buildings.*
- *Pathways are to be reasonably level with minimal cross fall and sufficient width, comfortable seating and slip-resistant floor surfaces.*
- *Where there is a change of level from the footpath to commercial or industrial floor levels, ramps rather than steps should be incorporated.*
- *There is to be effective signage and sufficient illumination for people with a disability.*
- *Tactile ground surface indicators for the orientation of people with visual impairments are to be provided in accordance with the relevant Australian*

Standard.

- *Access for people with a disability is to be provided at the main entrance to the development.*
- *Development is to comply with Australian Standard AS1428.2.*

Note all applicants are reminded of their responsibilities under the Disability Discrimination Act 1992. The Residential Flat Design Code provides accessibility standards which are to be satisfied for residential flat building developments.

F1 Local and Neighbourhood Retail Centres – This control applies to land identified on the Draft DCP Map "Local and Neighbourhood Retail Centres" (which includes all the Warringah PAMP town/ village centre focus areas, besides the Major Centre of Brookvale & Dee Why and industrial areas).

Objectives

- *To encourage good design and innovative architecture.*
- *To provide a safe and comfortable environment for pedestrians.*
- *To provide a range of small-scale shops and business uses at street level with offices or low-rise shop-top housing to create places with a village-like atmosphere.*
- *To enhance the established scale and pattern of development and the continuity of existing streetscapes.*
- *To enhance the public domain.*

The Draft DCP also includes specific controls on Dee Why and Warringah Mall. These are discussed in Section 7 (Section 7.5 for Dee Why and Section 7.10 for Brookvale/ Warringah Mall).

The design standards used by Warringah Council are obtainable through the Council's webpage under "Standard details for vehicle crossings, footpaths, kerb, gutter, gutter crossings, paving". This describes the Council's requirements for the design and construction of footpaths, kerb access ramps and other related facilities. A summary of the guidelines are as follows:

- Footpaths
  - *Width: 1.2m (or as directed), 1.5m where footpath is placed against kerb*
  - *Crossfall: 2%*
  - *Location: generally located centrally within the road reserve and parallel to the street alignment*

- Kerb access ramp
  - *Width of ramp: 1.2m*
  - *Width of wing: 0.6m*
  - *Desirable gradient: 10% (1:10)*
  - *Maximum gradient: 12.5% (1:8)*
  - *Footpath approach: 1.2m (minimum)*

Currently the guidelines only provide for the minimum footpath width allowed by the Australian Standard. This report compares Council's guidelines against the Australian Standard and Austroads' guidelines in Section 8 of this report.

3.1.2 Warringah Council Social Plan

The *Warringah Council Social Plan* was adopted in June 2010, and from 2011 the issues covered in the Social Plan will be part of its holistic "Strategic Community Plan". The Social Plan commences with a summary of key demographic and socio-economic data, which has been discussed in earlier

chapters of this report. The Plan then discusses "General Community Issues" and specific "Target group issues". There are elements throughout the Social Plan that are particularly relevant in the consideration of pedestrian access and mobility for Warringah. These are:

- **Ageing and disabilities** – *The number of people with a disability increases with ageing because people develop age-related disabilities, and the expected number of years that a person will have a disability increases as the longevity in the population increases: life expectancy of people with a disability has increased in the last 10 years.* This means that providing access for people with a disability will become an increasing need in Warringah, hence the need to fast-track provision of more extensive pedestrian facilities.
- **Community connectedness** – *Identifying with a community, feeling connected, and having a sense of belonging has been shown to lead to many positive outcomes… Social connectedness is linked not only to the health of individuals, but to the health of communities.* The ability to physically access and 'connect' with neighbours, shops, the library, parks/ beaches, etc. is the fundamental aim of a PAMP.
- **Council consultation and leadership** – *In addition to service delivery, it is important for Council to work with and listen to its community and actively analyse social, economic, recreational, environmental, and cultural changes, and thereby provide leadership in fulfilling its responsibilities.* A prioritised plan based on consistent criteria can help ensure that it is not just the 'squeaky wheel' that gets addressed, but what is for the greater good of the whole community.
- **Strategic Asset Management** – *In reviewing its asset management and the mix of facilities it should be providing now and in the future, Council requires strategic direction as to the type, location, number of community facilities required to provide the relevant services to meet community needs in Warringah.* The PAMP aims to provide this strategic direction for pedestrian facilities, and to reinforce Council's aspiration for a "fully accessible community".
- **Healthy Urban development and Physical activity** – *Council needs to integrate principles and standards aimed at facilitating healthy active lifestyles into land use planning and development assessment practices for all developments in Warringah. These principles include:*
  - *mixed land use*
  - *housing density*
  - *footpaths and cycleways*
  - *facilities for physical activities (including pools, parks, playgrounds), and facilities enabling physical activity (that is, end of trip facilities such as bike racks, showers, lockers)*
  - *permeable, accessible, and safe street networks*
  - *transport infrastructure and systems linking residential, commercial, and business areas.*

Addressing these 'healthy urban development' principles also supports public transport, walking and cycling, and community connectedness.

- **Public transport, walking and cycling** – *The Plan highlights that with the high level of people living and working in Warringah (and not needing to travel far), the majority of work trips are short, and by private car. In addition to actively advocating the State Government to improve public transport provision in Warringah for residents and workers, Council needs to support and promote reduced car use through: car pooling, communal vehicles, bike fleets, walking school bus, walking and cycling; and provide infrastructure to enable walking and cycling.* The PAMP will further support these actions by highlighting infrastructure improvements as well as encouragement programs for walking.

3.1.3 Recreation Strategy 2009

Warringah Council's Recreation Strategy was adopted by Council in December 2009. The Recreation Strategy was developed to provide a long-term strategic direction for the provision and management of recreational assets, programs and services in Warringah.

In preparing the Strategy, a series of consultative and research activities were undertaken to understand current provision, usage, and community needs. This informed a set of 'guiding principles' and 'strategic directions', which provided a framework for the development of a four-year Recreational Strategy action plan for 2009-2013.

The 'vision' for recreation in Warringah is:

"A healthy and active Warringah community that has access to a wide range of appropriate, suitable, sustainable and quality recreational opportunities, both now and in the future."

Relevant 'guiding principles' in the Recreation Strategy include:

> *"2. Recognising and continuing to support high levels of participation of all ages and abilities by* ***providing accessible infrastructure****, programs, and services; …*
>
> *7. Incorporating a '****healthy active' planning approach to all physical and urban development****. …*
>
> *11. Balancing planning and management efforts to reflect* ***current and future demand for sport and recreational activities****."*

Relevant 'strategic directions' in the Recreation Strategy are:

> *"2.* ***Develop, manage, maintain, renew and fund assets****, programs and services that* ***support a highly active community, opportunities for people with special needs****, low participation groups and* ***address barriers to participation****…*
>
> *3. Planning and management is to* ***reflect high current and future demand sporting and recreational activities, particularly incidental, un-structured recreational activities such as walking****, swimming and cycling..."*

The Recreation Strategy reviewed a range of relevant documents and data, some of which are relevant to the Warringah PAMP study. A Residents Telephone Survey (2008) and a Children's/Youth Survey (2008) were undertaken in 2008, which provided information on participation in sporting and recreational activities by Warringah residents over the previous 12 months, residents' use of sporting and/or recreational facilities, and residents' level of satisfaction with those facilities. Some the relevant findings from those surveys are that:

- The most popular recreational activity of adult Warringah residents is walking. 54% of adults had walked in their free time for "fun, enjoyment, fitness or health";
- For children/ youth, walking was the fifth-most popular recreational activity, with 75% participation;
- Walking, bike tracks, and trails (including bushland) are the third-most visited facilities by adult residents of Warringah (69%), with 73% of users satisfied with those facilities.

Key relevant actions in the "*2009-2013 Recreation Strategy Action Plan*" are:

> *"4.* ***Continue to develop a network of*** *walking tracks,* ***pedestrian pathways****, linkages, cycleways and multi-*

*use trails, **concentrating initially around high-use sites to connect with transport routes and residential areas**. This should be achieved by:*

*- **Develop and implement a series of PAMPs** which outline the provision of safe, convenient and connected pedestrian routes throughout Warringah.*

…
*23. Consider **the integration of principles and standards aimed at facilitating healthy active lifestyles into land use planning instruments**. Ensure that the following are considered:*

*- **footpaths** and cycleways."*

The Warringah PAMP supports and is consistent with Warringah Council's Recreation Strategy. The PAMP incorporates recreational paths within its priority routes.

3.1.4 Warringah Bike Plan

The *Warringah Bike Plan* provides the basis for cycling infrastructure and education to deliver a better environment for cycling in Warringah. It also outlines various promotion strategies and events to encourage more people to ride their bikes for local trips.

The Bike Plan includes a "Warringah Bicycle Network" map showing proposed on-road, off-road sealed shared paths, off-road unsealed shared paths, and bicycle parking. This map is shown in **Appendix F**. The Bike Plan also includes a map showing "Route Network Priorities: Council and RTA routes", which prioritises sections of the proposed bicycle route network on a scale of 1 to 4 (with 1 being the highest priority). It should be noted that some proposed routes are shown as indicative lines on a map only, with the actual route to be determined in the concept design for that route.

The bicycle route network has been included as a GIS layer in the PAMP maps, and where there are opportunities to share provision, these have been incorporated in the PAMP.

A number of the Warringah PAMP focus areas include sections of existing or proposed bicycle routes. Where the focus areas include sections of pedestrian and cyclist shared paths, these paths have been considered as part of the PAMP.

3.1.5 Warringah Regional Multiple-use Trail Strategy

The *Warringah Regional Multiple-use Trail Strategy* was adopted in 2010. The Strategy identifies these key trail user groups in Warringah LGA:

1. *challenging off-road bike touring*
2. *easy off-road bike touring*
3. *local bushwalkers/ joggers*
4. *bushwalkers seeking iconic experiences*
5. *horseback trail riders.*

It should be noted that the fact that a trail may be "multi-use" does not imply that all the above activities will be appropriate for all trails: each land manager will have different restrictions for different trails.

Key planning principles for the regional trail network that are relevant to this PAMP are:

- *link to other trails where possible to expand recreational opportunities;*
- *provide access to popular destination nodes (attractors);*

- *give people opportunity to experience a natural environment as directly as possible from their homes;*
- *provide for linkages with existing and/or proposed Bike Plan and public transport; …*

The Strategy identifies existing and potential future multi-use trails (which include bushland trails and urban link routes) in a network consisting of short loops, long loops, and connecting trails (regional and intra-regional). These routes are also shown in **Appendix F**, and form part of the base mapping for the PAMP. We have taken the identified multi-use trail routes into account when developing the PAMP network.

The document also includes indicative directional and information signage for multi-use trails that could be used more broadly for recreational routes throughout the LGA.

Warringah Council's Bike Plan is intended to also complement Council's Bike Plan Multiple-use Trail Strategy by ultimately providing safe on-road bike or shared routes to connect to the off-road trails. In turn, the PAMP also complements both the Regional Multi-Use Trail Strategy and the Bike Plan by outlining a pedestrian network that connects to or reinforces the routes identified in the proposed multi-use and bike networks.

The interconnection of these three plans/ strategies – the *Regional Multiple-use Trail Strategy,* the *Warringah Bike Plan,* and the *Warringah PAMP* – suggests that they must all be taken into account when there are any changes proposed for any one of them.

3.1.6 Council's infrastructure Database – footpath requests assessment

Warringah Council's *Footpath Request Priority System*' (FRPS) is a large electronic spreadsheet with over 270 footpath requests from 2001. The spreadsheet contains over 60 cells of details for each request, including:

1. Date of request, name and address of requestor/ proposer, UBD map reference;
2. Location address, extent (length, width), estimated cost of work;
3. Priority calculation based on origin factor, pedestrian route factor, pedestrian generating destination factor (based on land use types: beach, bus routes, church, cinema, club, commercial centre, pub, shop (number of), school, other;
4. Additional considerations (with true/false responses, except comment for safety): use by children, elderly & mobility impaired, community support, likely to be used by cyclists, any safety considerations, any construction difficulties, wear paths, does the footpath link with existing path, does proposal fit with the streetscape;
5. Name of Council's assessor, whether the site has been visited, date visited, inspection comments;
6. CAPEX rating (high, medium, low priority)
7. Follow-up inspection date & comments, built (true/false).

The FRPS aims to be very specific with regard to highlighting the pedestrian attractors and generators that may be served by the requested footpath. However, there are other significant pedestrian attractors that are not currently included, such as community facilities (libraries, youth centres, community health centres), recreational facilities other than beaches (passive recreation such as parks, or rivers, lakes, lagoons; or active recreation such as playing fields, aquatic centres, tennis courts, ovals) industrial premises, and medical facilities. The FRPS also does not include strong generators such as high-density residential flats/ units, villas & townhouses, and aged care facilities. Including all these pedestrian attractors and generators under "other" does not seem balanced.

This PAMP study compared the FPRS against the RTA's '*Weighted Criteria Scoring System for PAMP works prioritisation'* (taken from the RTA's *How to Prepare a PAMP* guidelines, and shown in Table

6.3.1), and the RTA's table was considered more appropriate for prioritising the proposed PAMP works.

3.2 Other documents

3.2.1 Planning Guidelines for Walking and Cycling

The *Planning Guidelines for Walking and Cycling* (NSW Department of Planning, 2004) provide comprehensive guidelines, examples, and case studies for the strategic, concept and detailed design of an extensive range of walking and cycling strategies, infrastructure, facilities, and programs, including funding sources.

Key guidelines and recommendations relevant to the Warringah PAMP include:

1. ***Provision of footpaths that allow a clear and continuous path of travel for all users along all streets is an important element of neighbourhood design for walking and cycling.*** *This element is most important in and around centres and major trip generators and along heavily used walking routes.*
2. *Users include people walking alone and in groups, and people pushing prams, riding in wheelchairs and motorised scooters, wheeling trolleys and using other mobility aids. Users also include children (and accompanying adults) on bicycles.*
3. ***Footpaths should generally be provided on both sides of all streets within a 400m catchment of accessible centres and major trip generators such as schools. They should also be provided on both sides of streets that serve as key routes between trip generators,*** *e.g. a walking route between a railway station and a university. A minimum width of 2m is appropriate for these footpaths.*
4. ***Sealed footpaths should be provided on at least one side of all streets that do not serve as key walking routes and those outside the 400m catchment of centres and major trip generators.*** *Whilst a minimum width of 1.5m is suggested, 2m may be appropriate in some instances.*
5. ***Kerb ramps should be provided at all corners, through road closures and wherever there is significant pedestrian traffic across a road****. Kerb ramps can also assist cyclists to pass through road closures.*
6. *Medians should be introduced at strategic locations on busier roads to allow staged pedestrian crossings mid-block, adjacent to roundabouts and at traffic signals.*
7. ***Street furniture and street trees can improve the pedestrian environment, but should not obstruct the continuous path of travel****. For older pedestrians, trees and seats provide much needed shade and places to rest. Trees however can make the footpath unusable if planted along the path of travel.*
8. Above and below ground services should be located so as not to obstruct footpaths or unduly damage them when services are replaced or repaired.

This PAMP does not use a radial approach (that is, "all streets within 400m catchment") to identifying where footpaths should be provided, but rather identifies preferred pedestrian routes to maximise footpath continuity.

The guidelines also discuss funding opportunities for walking and cycling objectives, including developer contributions in established areas:

9. *In established urban areas, council developer contributions plans vary considerably in terms of strategic direction, items funded, contribution amounts and area of application.*
10. *The greater the rate of redevelopment, the greater the opportunity to levy developer contributions.*
11. *Good practice contributions plans in established areas generally include walking and cycling objectives and complementary works schedules. These schedules are oriented toward footpath*

improvements, bus shelters, cycleways and the like, rather than motor-vehicle-related roadworks and car parking.

12. *Good practice contributions plans benefit from supportive policies. In particular, they benefit from walking and cycling works schedules that have been transferred from bicycle and pedestrian plans.*

These guidelines provide a good basis for provision of pedestrian facilities in Warringah LGA. The suggestions numbered 3 and 4, that a *minimum of 2m wide footpaths should generally be provided on both sides of all streets within a 400m catchment of accessible centres and major trip generators such as schools; and that sealed footpaths (minimum 1.5m wide, but 2m where appropriate) should be provided on at least one side of all streets that do not serve as key walking routes and those outside the 400m catchment of centres and major trip generators*, could be particularly onerous on Council, where most – if not all – its area is within 400m of an accessible centre or major trip generator.

Rather than suggest a 'blanket' 400m radius for pedestrian facilities provision, this PAMP identifies a prioritised pedestrian network that can help maximise the impact of Council's investment in footpaths and pedestrian facilities provision.

3.2.2 Healthy by Design: A Planners' Guide to Environments for Active Living

The *Healthy by Design* guide was prepared by the National Heart Foundation of Australia - Victoria Division, in 2004. It includes guidelines for the design of safe, accessible pedestrian facilities:

- ***Enable comfortable passage for people in wheelchairs, people with prams, learner cyclists and people walking comfortably side by side*** *with footpaths that are:*

A minimum of 1.5 metres wide along collector or lower order streets.
A minimum of 2.5 metres wide along arterial roads and approach routes to predictable destinations such as schools, parks and shopping precincts. (Three metre paths or wider are preferred to allow for greater contingency).

- ***Provide protection from passing cars for people on paths with a minimum outer nature strip provision of 0.5 metres. Choose 'barrier' not 'rollover' kerb design****.*
- ***Provide footpaths, ideally, on both sides of all streets****.*
- ***Provide walking routes along predictable paths of travel,*** *including approaches to schools, parks and shopping precincts.*
- ***Ensure a durable, non-slip surface and even paving*** *designed and constructed for minimum maintenance.*
- ***Provide continuous footpaths****, uninterrupted by variations in surface material.*
- ***Keep paths clear, accessible and free of obstructions*** *such as vegetation and tree debris. Develop a maintenance regime to ensure vegetation does not overhang walking and cycling paths and restrict access for users.*
- ***Prohibit parked cars in driveways*** *that block footpath access.*
- ***Ensure gradients from footpaths to streets are minimal****, safe and comfortable for people with limited mobility and those using wheelchairs, prams and trolleys.*
- ***Align gradients and ramps with desired paths of travel*** *for pedestrians and cyclists.*
- ***Ensure a smooth transition from ramps to roads*** *for people using wheelchairs or prams. Ramps should be at least as wide as the footpath or marked crossing point to eliminate squeeze points at transition areas.*
- *Paths, ramps and walkways should comply with AS1428.1, 1428.4 and 4586.*

These guidelines are generally supported by this PAMP. Recommended footpath widths for the different pedestrian priority route levels, and gradient and kerb ramp design standards are described in Section 8.

3.2.3 Metropolitan Strategy North East Subregional Plan

The NSW State Government's *Metropolitan Strategy North East Subregional Plan* highlights the following actions relevant to this PAMP:

- *The Metropolitan Strategy housing target for the North East Subregion is 17,300 new dwellings (10,300 for Warringah LGA) by 2031.*
- *An employment capacity target of 19,500 additional jobs (12,500 for Warringah LGA) has been established for the North East Subregion between 2001 and 2031.*
- *While the area of Employment Lands in the North East Subregion is relatively minimal compared to other subregions, these small pockets of industrial zones and business parks are of strategic value to the subregion. Through the subregional planning process, various Employment Lands precincts were identified as being of strategic importance to be retained for industrial uses. These include Brookvale, Frenchs Forest, Austlink/Terrey Hills, Cromer and Mona Vale.*

- ***NE** A2.2.3: **Warringah Council to consider preparation of a master plan for the Frenchs Forest local area in association with Department of Health, Department of Planning and the Roads and Traffic Authority.***

  The planned Northern Beaches Hospital at Frenchs Forest presents an opportunity to attract complementary and supporting activities. There are existing Employment Lands at Frenchs Forest and Allambie Heights which provide potential for industry related growth. This area is serviced by Strategic Bus Corridors 15 and 17, Warringah Road and the Wakehurst Parkway.

It is recommended that this master plan have a strong focus on the pedestrian environment, including providing fine-grained pedestrian access around the various facilities, designed to encourage patients to walk/move around for exercise and stimulation, as well as provide access for visitors and staff; locating staff accommodation close to the facilities and designed with safety in mind, so that staff parking can be minimised.

- ***NE** B3.1.1: **Local government and State Government to investigate creation of a commercial core and associated improvements to create a stronger, safer and higher amenity centre in the medium to long–term at Brookvale.***

  The investigation of creation of a commercial core in the Brookvale Centre may provide new opportunities to build on the advantages of the North East Subregion and the existing businesses and workforce. The Metropolitan Strategy outlines some key aspects of successful centres as being:

  - *accessible and pedestrian friendly;*
  - *providing good public transport options;*
  - *containing good jobs, learning opportunities and cultural activities; and*
  - *have good, safe public domain spaces.*

Section 7.5 of this PAMP presents a pedestrian priority network that supports this action.

- ***NE** C2.1.1: **Warringah Council to investigate through structure planning and other means the Brookvale–Dee Why Major Centre as a location for additional housing.***

  Dee Why is identified as a location for additional housing. To strengthen its role as a liveable centre, opportunities for greater housing densities, compatible with the achievement of the employment capacity target for the centre should be explored. Brookvale may also be an appropriate location for high density housing for the subregion, however this would only be

appropriate for consideration if the employment capacity target is able to be met within the existing industrial zone and any potential commercial zones that may be introduced.

As discussed in Section 2.1.2, Warringah Council is developing its Housing Strategy to determine its preferred locations for the provision of additional housing to 2031. This PAMP recommends locating housing growth near areas with existing good pedestrian facilities, and/or near identified Primary and Secondary pedestrian routes. The PAMP supports the Brookvale and Dee Why major centre with an extensive pedestrian priority network, as shown in Section 7.5 and 7.10.

- ***NE** f1.3.1: **Council to work in partnership with the Department of Environment and Climate Change and the Roads and Traffic Authority to explore opportunities to improve access to waterways and links between bushland, parks and centres.***

  There are a number of opportunities to improve access to waterways and links between bushland, parks and centres including:

  - *developing a recreational trail east–west from Chatswood to Dee Why via Middle Cove and from Narrabeen Lakes to St Ives;*
  - *improving recreational trail access along Pittwater to West Head;*
  - *completing gaps in the Manly to Palm Beach trail;*
  - *improving pedestrian access along major foreshore roads between Town Centres and the beach/foreshore reserves;*
  - *improving cycleways from the Spit Bridge, north to Warringah and the Ku–ring–gai Chase National Park;*

This PAMP incorporates extensive recreational pedestrian links along major foreshore roads between Town Centres and the beach/foreshore reserves, as outlined throughout Section 7.

- ***NE** f2.3.1: **In planning for future growth of centres councils to consider the need for civic space. Councils should identify opportunities to enhance existing civic space and provide new civic spaces.***

  Urban civic space, such as town squares, widened footpaths and boulevards, and other pedestrianised areas, is an important part of the urban environment. In planning for future growth of strategic and larger local centres there are opportunities to enhance existing civic space and identify new civic space.

  High quality and appropriately located civic space can create more vibrant and interesting centres. They provide a place for people to gather, attract shoppers to retail strips and may provide a location for cultural activities such as markets and festivals.

This PAMP reflects and supports these recommendations. The PAMP recommends a minimum of 2.0m wide footpaths in Primary areas, which are generally in town and local centres and any other areas where there is likely to be a high pedestrian concentration.

3.2.4 Disability Discrimination Act 1992 (DDA)

The Disability Discrimination Act 1992 (DDA) provides that a person with a disability has a right to have access to places used by the public. The definition of "disability" in the DDA includes physical, intellectual, psychiatric, sensory, neurological, and learning disabilities, as well as physical disfigurement, and the presence in the body of disease-causing organisms. This broad definition is meant to ensure that everyone with a disability is protected.

The Disability Discrimination Act (DDA) makes it against the law for public places to be inaccessible to people with a disability. Places used by the public include: public footpaths and walkways, parks, public swimming pools, public toilets, pedestrian malls, libraries, retail and commercial premises, sporting venues, social and sporting clubs, Government offices, public transport, hospitals, Government-run services.

This applies to existing places as well as places under construction. To comply with the DDA existing places may need to be modified to be accessible (except where this would involve "unjustifiable hardship").

Every area and facility open to the public should be open and available to people with a disability. They should expect to enter and make use of places used by the public if people without a disability can do so.

4. Pedestrian Crash Data

Pedestrian crash data for the Warringah LGA for five years (from January 2004 to December 2008 inclusive) were provided by Warringah Council and the RTA. This data was examined and plotted on GIS maps to identify crash clusters and issues that may have contributed to the accidents. Maps of the crash data are shown in **Appendix A**.

4.1 Crash Summary by Suburb and Street

The results of the crash analysis can be summarised as follows:

- **193 crashes** occurred, including 5 fatal crashes and 188 crashes causing injuries (including crashes where more than one person was injured);
- **5 fatalities** and 200 injuries were reported – it should be noted that all pedestrian crashes result in injury to the pedestrian;
- 4 crashes were reported as vehicle speed-related crashes, 4 crashes were reported as alcohol-related crashes, and 3 crashes were reported as driver fatigue-related crashes;
- 53 crashes were reported to occur during night time, 11 crashes during dusk, 7 crashes during dawn, and the majority of 122 crashes were in day time.

Table 4.1.1 lists the suburbs within Warringah LGA in which more than one crash occurred, and the number of crashes that occurred in those suburbs.

Table 4.1.1: Number of Crashes by Suburb

Suburb	Number of Pedestrian related crashes from January 2004 – December 2008*
Dee Why	44
Brookvale	31
Collaroy	17
Narrabeen	16
Frenchs Forest	13
Forestville	11
Freshwater	9
Belrose	8
Manly Vale	7
Narraweena	7
Beacon Hill	6
Cromer	5
North Manly	4
Allambie Heights	3
North Balgowlah	3
Collaroy Plateau	2
North Curl Curl	2

Note: * More than 1 crash from January 2004 - December 2008

From Table 4.1.1, it can be seen that a high number of pedestrian related crashes occurred in areas with high pedestrian activity, such as Dee Why (shopping area and beach), Brookvale (Warringah Mall), Collaroy (beach and shops) and Narrabeen (beach and shops).

Over 50% of all pedestrian crashes in the past 5 years in Warringah LGA have occurred in these four suburbs, with over 25% occurring in Dee Why alone. While this reflects the high level of pedestrian

activity in these suburbs, it also highlights the need to significantly improve pedestrian safety and driver awareness in these areas.

Table 4.1.2 lists sections of road in Warringah LGA in which more than one crash occurred and the number of crashes that occurred in the road sections within the selected areas.

Table 4.1.2: Number of Crashes by Road Section

Road	Suburb	Number of Pedestrian related crashes from January 2004 – December 2008*
Pittwater Road	Dee Why	25
Pittwater Road	Brookvale	18
Pittwater Road	Collaroy	17
Pittwater Road	Narrabeen	16
Warringah Road	Forestville	7
Howard Avenue	Dee Why	6
Forest Way	Belrose	4
Warringah Road	Beacon Hill	4
Warringah Road	Frenchs Forest	4
Blackbutts Road	Frenchs Forest	3
Cross Street	Brookvale	3
Harbord Road	Freshwater	3
Old Pittwater Road	Brookvale	3
Oliver Street	Freshwater	3
Pittwater Road	North Manly	3
The Strand	Dee Why	3
Alfred Road	Narraweena	2
Campbell Parade	Manly Vale	2
Condamine Street	Manly Vale	2
Fisher Road	Dee Why	2
Forest Way	Frenchs Forest	2
Kentwell Road	Allambie Heights	2
Koorala Street	Manly Vale	2
Lawrence Street	Freshwater	2
South Creek Road	Cromer	2
Warringah Road	Narraweena	2
Winbourne Road	Brookvale	2

Note: * More than 1 crash from January 2004 - December 2008

The following observations are made from Table 4.1.2:

- The majority of the pedestrian related crashes occur on State and Regional Roads. A total of 86 (approximately 45% of all pedestrian crashes) crashes were reported to occur along Pittwater Road.
- Over 40% of all pedestrian crashes occurred on Pittwater Road, through town centres with high pedestrian activity: Dee Why, Brookvale, Collaroy, and Narrabeen.
- A maximum of six (6) crashes were reported on a local/collector road (Howard Avenue) within the Warringah LGA during the analysis period. Howard Avenue provides access to Dee Why shops and Dee Why Beach. It is also noted that a total of 3 crashes occurred along The Strand which provides access to Dee Why Beach.
- A total of six pedestrian crashes occurred along Cross Street and Old Pittwater Road which are located in the vicinity of Warringah Mall.

4.2 Pedestrian Fatalities

Of the five pedestrian fatalities reported over the 5-year period within the Warringah LGA, three (3) occurred on Pittwater Road in Narrabeen, within 700m of each other. The locations of the five fatalities were:

- **Pittwater Road, Narrabeen** (22m north of Devitt Street)– A pedestrian fence is currently provided in the median to discourage pedestrians from attempting to cross at this point
- **Pittwater Road, Narrabeen** (50m north of Devitt Street) – The crash occurred during night time and a pedestrian fence is currently provided in the median to discourage pedestrians from attempting to cross at this point.
- **Pittwater Road, Narrabeen** (50m south of Waterloo Street) – The crash occurred during night time and this crash is reported as being speed-related.
- **Pittwater Rd/ Howard St/ St David Ave intersection, Dee Why** – The crash occurred during day time with fine weather conditions and involved a station wagon.
- **Warringah Road/ Ferguson Street intersection, Forestville** – This intersection is located on a bend. The crash occurred during night time with wet weather conditions and involved a light truck.

The RTA crash data does not include the reason for the crashes, however contributing factors are provided such as time of day, weather conditions, type of vehicles involved, and whether alcohol, speed, or fatigue was a factor. These have been noted above.

For the three fatalities on Pittwater Road in Narrabeen, a possible conclusion is that this long stretch of straight, 3-lane divided carriageway encourages a high traffic speed that is not appropriate in an urban environment with significant pedestrian activity. There are also bus stops on both sides of the road, and anecdotal advice is that people will often cross Pittwater Road to run to catch a bus, without using the signalised crossings (which require people to detour from their desire line).

➔ While a pedestrian fence has been installed along the median at Devitt Street to discourage these random pedestrian crossings, it is recommended that RTA be approached to consider altering the road environment on Pittwater Road (particularly through Narrabeen) to reduce traffic speeds.

4.3 Pedestrian Crash Clusters

RTA defines ‘crash clusters’ as locations (generally within a 150m length) that exhibit a relatively high number of pedestrian crashes over the analysis period. The number of crashes that constitute a ‘high number’ is arbitrary, but is often 3 or more. The locations of pedestrian crash clusters in Warringah LGA and the identified crash characteristics are provided in **Appendix B**.

These crash cluster locations (which had 5 or more crashes) are all on Pittwater Road, generally in retail areas on an arterial road, along major public transport routes.

- **Narrabeen** – from Pittwater Rd/ Waterloo St intersection to 110m south (8 crashes, including 2 fatalities).
- **Dee Why** – Pittwater Rd intersections with Oaks Av, Fisher St and Pacific Pde (8 crashes).
- **Dee Why** –from Pittwater Rd/ Hawkesbury Ave intersection to 20m south (7 crashes).
- **Dee Why** – from Pittwater Rd/ Howard St/ St David Ave intersection to 100m south (6 crashes, including one fatality).
- **Brookvale** – from Pittwater Rd/ Chard Rd to Pittwater Rd/ Winbourne Rd/ Old Pittwater Rd (6 crashes).
- **Collaroy** – from Pittwater Rd/ Collaroy St intersection to 100m north (5 crashes).

➔ Detailed pedestrian safety investigations should be undertaken at pedestrian crash cluster and fatality locations to help determine the likely causes of the crashes, and to recommend actions to improve pedestrian safety without unduly limiting access, and raising driver awareness of pedestrian activities and the need to reduce speed particularly through town centres.

5. Community and Stakeholder Consultation

Public consultation is a key element of preparing a PAMP. The local community is directly affected by pedestrian facilities, using them on a day-to-day basis whether for work, shopping, or for exercise. As part of the preparation of the PAMP, a number of stakeholder consultations were held. These were undertaken with a broad range of people and organisations within the Warringah LGA, aiming to capture a wide range of users with different points of view.

Warringah Council's webpage, the local newspaper, and an information brochure were used to advertise the preparation of the PAMP and to inform the public of the stakeholder consultation dates, times and locations. A weblink and website address were also included to allow the community to complete an online questionnaire survey and/or to leave comments.

An information brochure was distributed at the public stalls and made available at Council offices and libraries.

This section summarises the consultation undertaken.

5.1 Focus Group Meetings

Two separate Focus Group Meetings (FGM) were undertaken on Wednesday 31 March 2010: one for people with a disability, and one for the aged.

The notes taken during the two focus group meetings are attached in **Appendix C1**, and are summarised as follows:

- Lack of footpaths;
- Unsafe footpaths due to obstructions (eg. poles);
- Uneven and damaged footpaths (mainly caused by vegetation);
- Vegetation encroaching on footpath from beside the footpath and overhead;
- Lack of safe pedestrian crossing facilities (especially on major roads);
- Short duration of signalised pedestrian crossing phase;
- Awkward location of the call button at signalised crossings;
- Obstructed view from traffic to pedestrians waiting to cross;
- Lack of handrails at steps;
- Unsafe kerb ramps (lip too pronounced, each side not lining up, kerb directing the user to the centre of intersection, gradient too steep);
- Lack of kerb ramps;
- Unsafe crossings (traffic volume and/or speed too high);
- Condition and continuity of nature strip; and
- Recreational path opportunity.

One area of significant concern raised by the FGM for people with a disability was the pedestrian facilities around Allambie Heights, especially along Allambie Road and Aquatic Drive. This area is used by both the aged and people with a disability. These issues are considered in Sections 7 and 8: Section 7.1 discusses the context of the Allambie Heights area and identifies priority pedestrian routes for improvement works, and Section 8 discusses design standards that should apply to those works.

Similarly, other issues raised about specific areas – such as kerb ramps in Dee Why, and lack of safe crossing points on Fisher Road in Cromer – are discussed in the relevant sub-section in Section 7.

Actions arising from those issues are included in the PAMP Infrastructure schedules in **Appendix G**.

5.2 Questionnaire Surveys

A questionnaire was developed and made available online. In addition, paper copies were distributed to community groups who did not have access to a computer. Schools and libraries were sent links for distribution amongst parents and members. The questionnaire is included in **Appendix D1**.

The aim of the questionnaire was to gain a local perspective and identify where people visit, how they travel there, the reason for that form of travel, their level of satisfaction with pedestrian provision, and any access issues. A total of 114 questionnaires were submitted, with 69 fully completed. Some of the incomplete surveys provided sufficient data on some questions and so were included in the results.

The questionnaire survey results indicate that the majority of the people responding to the questionnaire were aged between 25 and 54 years, with nearly 75% of responses coming from females. The responses came from a broad range of the community: 17% of the responses were from people with a disability, or carers of a person with a disability.

Respondents were asked to select up to three focus areas in Warringah that they visited the most. The area visited by most respondents was Warringah Mall (27%), followed by Dee Why Town Centre (15%) and Dee Why Beach (10%). All the other focus areas attracted a relatively small proportion of respondents (less than 9%).

64% of respondents drove to the area, with most choosing to do so because they considered it the quickest form of travel for that trip. Approximately 25% of respondents walked to their most visited areas, and of these 9% preferred to walk or cycle to improve their health.

78% of respondents felt safe walking within their selected focus areas and are generally satisfied with the pedestrian facilities provided but improvements were required. The most commonly identified improvement needs include:

- Footpath cleaning and clearing
- Footpath repair (removal of trip hazards)
- Safer pedestrian crossings
- Improved kerb ramps
- Lack of footpath continuity/missing footpaths
- Need to prevent vehicles from parking over the footpath (wheel stops)
- Driver education
- Improvement to the streetscape
- Control of temporary furniture - to be outside of the pedestrian area
- Safety issues

The detailed results of the survey and responses are shown in **Appendix D2**. The footpath maintenance and kerb ramp issues are addressed in the Footpath maintenance schedules in **Appendix G**. Missing footpaths and specific safety issues are included in the focus area-by-focus area' review of the LGA outlined in Section 7, and incorporated into the detailed PAMP Infrastructure action plan, also in **Appendix G**. Control of temporary furniture is discussed in Section 8.2 Design Standards for footpath width.

5.3 Public Information Stalls

Additional consultation was held at five Public Information Stalls at locations nominated by Council within the Warringah LGA over two separate days:

- Thursday 22 April 2010 at Warringah Mall;
- Saturday 24 April 2010 at Dee Why Town Centre, Forestville Shopping Village, Forest Way Shopping Centre and Terrey Hills village centre.

These stalls were designed to inform the community about the preparation of the PAMP and to allow the public to give comment on issues.

Issues raised generally covered similar topics to those identified during the focus group meetings. A summary of the comments received is shown in **Appendix C2**.

5.4 Consultation with Schools

As part of the PAMP, schools were given the opportunity to respond to the online questionnaire. Also as part of the PAMP, a number of schools were selected to be contacted (based on size or location) to provide input into the PAMP. The following schools provided responses for the PAMP:

- Collaroy Plateau Public School
- Terrey Hills Primary School
- The Forest High, Frenchs Forest
- Killarney Heights High School
- St Augustine's College, Brookvale
- Harbord Public School, Freshwater
- Narraweena Primary School

The specific comments from schools are included in **Appendix C3**.

In September 2010, Council's Traffic Committee considered a number of submissions from Collaroy Plateau Public School. Some requests were adopted, and others were rejected. Many schools are likely to have similar concerns, related to new footpaths and crossing facilities, speed limit extensions and speed bumps, extension of pedestrian fencing, and parking controls.

Provision of safe routes to school is an important concern of all schools, and the broader community. Where requests for facilities or changes in traffic or parking controls are rejected by Council (following Council observations and/or data collection and analysis), the issues of concern remain. A useful process towards resolution of the issues may be for representatives from Council (officers), the school (parents, teachers, even children), bus operators, and other stakeholders (such as an access consultant, or a member of a bicycle user group) participate in a collaborative process to discuss the issues or concerns of the school, preferably with a site inspection, and develop solutions collectively. Such a process is encompassed in the 'Safety around Schools' program, outlined in **Appendix H** with internet addresses for more information.

It is recommended that Council trial a 'Safety around Schools' or similar program with one or two schools in Warringah LGA, with a view to offering the program to all primary and secondary schools in the LGA. This action is included in Section 9.3.

5.5 Public Exhibition of the Draft PAMP

The Draft PAMP was on public exhibition from 24 March to April 29, 2011, at the following locations:

- Warringah Council's Civic Centre
- Warringah Council's Cromer Administration Building
- Warringah Council libraries (at Belrose, Dee Why, Forestville and Warringah Mall)
- Terrey Hills Community Library
- Terrey Hills Shopping Centre
- Warringah Council's website.

Warringah Council received a total of six (6) public submissions during the public exhibition period. These submissions were assessed and amendments have been incorporated in this final version of the PAMP report.

6. Development of the Prioritised Pedestrian Network

The proposed prioritised pedestrian network developed through this PAMP study is illustrated in **Appendix E**. The PAMP network comprises a series of integrated routes within the focus areas and links between these areas, where appropriate. It is a network of footpaths and road crossings that links concentrations of pedestrian generators and attractors, and provides useful local and intra-regional connections for pedestrians.

6.1 Pedestrian Route Hierarchy

Development of a route hierarchy is a structured approach to assist planners identify the type of infrastructure required for each street. When the purpose and role of a route is understood, decisions with regard to its width and type of road crossing can be consistently adopted.

The proposed PAMP pedestrian network is prioritised into Primary, Secondary or Collector pedestrian routes based on a number of factors, including:

- The number and intensity of pedestrian generators and attractors;
- Evidence of a pedestrian desire line;
- Use or potential use by user groups with specific needs; and
- Adjacent road hierarchy and presence of a bus stop.

These are summarised in Table 6.1.1 below, and described in more detail following the table.

Table 6.1.1: PAMP Pedestrian Route Hierarchy characteristics

Primary pedestrian route	Secondary pedestrian route	Collector pedestrian route
• Area where high pedestrian volumes are present/ expected (where there are many pedestrian attractors and generators, or a major single generator).	• Areas where there are medium-intensity pedestrian activities	• Areas where there are medium- to low-intensity pedestrian activities, but provision of pedestrian facilities is an important strategy
	• Connection between nearby Primary routes	• Connection from dispersed pedestrian generators/ attractors to Secondary or Primary routes
• A strong pedestrian desire line	• Along strong recreational or local routes	• Intra-regional recreational routes
• Significant number of user groups with specific needs anticipated	• User groups with specific needs links	• Intra-regional links between centres
• Adjacent to an arterial road or a collector road served by public transport	• Adjacent to an arterial road, sub-arterial, or a collector road served by public transport	

6.1.1 Primary Routes

Primary routes are generally identified where all or a number of these characteristics are present along the route:

- ***A major single generator*** – such as a shopping centre; where pedestrian concentration is high and people tend to congregate, for example, Warringah Mall.
- ***Many pedestrian attractors and generators*** – a mixed-use town centre; commercial/ retail strips; linking many related pedestrian attractors and generators (retail/commercial, high- or medium-density residential, schools, community facilities, public transport stops, recreation); These routes generally attract a broad range of pedestrians (including families, elderly, and people with a disability).
- ***A strong pedestrian desire line*** – for example, from Cromer campus of the Northern Beaches Secondary College to across Fisher Road near Carawa Road, or Howard Avenue, linking Dee Why town centre to Dee Why Beach and The Strand.
- ***Significant number of user groups with specific needs anticipated*** – near strong generators of user groups with specific needs; providing access between schools, aged care facilities, disability services. etc. to their nearest shops or library or recreational attractors; for example, between The Spastic Centre and Skyline shops and the Warringah Aquatic Centre.
- ***Adjacent to an arterial road or a collector road served by public transport*** – these locations are significant attractors and generators to/from the surrounding area; for example, Frenchs Forest Road East along Allambie Grove business parks, and Pittwater Road through Narrabeen, Collaroy, Dee Why and Brookvale.

The design of a Primary route should focus on maximising pedestrian amenity, with consideration of the mix of pedestrian types and activities that the area attracts and generates.

Design elements of Primary routes should include: a minimum of a 1.8m wide footpath (preferably 2 to 2.4m wide especially at the centre of high pedestrian activities) on both sides of the roadway; good street lighting; directional signage (pedestrian scale, with information and maps where appropriate, not just road signs); seating at regular intervals; bus stops should have sun and rain protection (either under awnings or with a covered shelter); convenient road crossing points (following pedestrian desire lines, and near bus stops) with accessible kerb ramps.

6.1.2 Secondary Routes

Secondary routes are generally identified where a number of these characteristics are present:

- ***Connection between nearby Primary routes*** – for example, on Pittwater Road between Dee Why and Brookvale, and between Narrabeen and Collaroy.
- ***Areas where there are medium-intensity pedestrian activities*** such as at village/ neighbourhood centres – for example, North Balgowlah and Killarney Vale village centres.
- ***Along strong recreational or local routes*** – for example, along Edgecliffe Boulevard in Collaroy Plateau, and the recreational link between Cromer and Dee Why Beach via Dee Why Lagoon.
- ***User groups with specific needs links*** – providing access between schools, aged care facilities, disability services. etc. to their nearest shops or library or recreational attractors; for example, Wyadra Avenue in Brookvale/ Freshwater, and Campbell Parade in Manly Vale.
- ***Adjacent to an arterial road, sub-arterial, or a collector road served by public transport*** – these locations are significant attractors and generators to/from the surrounding area.

The design of these routes still has to focus on the potential mix of pedestrian types and activities. A minimum footpath width of 1.5m would be appropriate on Secondary routes unless there is likely to be

strong use by people with wheelchairs, mobility scooters, bikes, and/or prams, where either regular wider passing bays should be provided, or 2m wide footpaths along the whole route.

Crossings would be signalised across arterial roads, or zebra and/or with a median refuge on collector roads, based on meeting RTA warrants.

6.1.3 Collector Routes

Collector routes are generally identified where a number of these characteristics are present:

- ***Connection from dispersed pedestrian generators/ attractors to Secondary or Primary routes*** – for example, Starkey Street between Forestville and Killarney Heights, Wattle Road and Amourin Street in Brookvale, and Myoora Road in Terrey Hills.
- ***Areas where there are medium- to low-intensity pedestrian activities, but provision of pedestrian facilities is an important strategy*** – for example, around the Cromer industrial area, and Waratah Parade-Ronald Avenue in Narraweena.
- ***Intra-regional recreational routes*** – for example, around Narrabeen Lakes, on Pittwater Road between Brookvale and Queenscliff (alongside Warringah Golf Club, Manly District Park, and Nolan Reserve).
- ***Intra-regional links between centres*** – these routes may not have large numbers of people using their whole length, but it provides that opportunity if people want to, and provides local access; for example, between Forest Way and Forestville and Frenchs Forest, between Allambie Heights and Warringah Mall, and between Collaroy and Dee Why.

Collector routes generally connect to Secondary or Primary routes, providing a 'capture and guidance' role linking the Primary and Secondary routes to the wider pedestrian population. Collector routes still have a mixture of pedestrian types, however the concentration is lower and there is less pressure on the facilities.

Collector routes can be short routes providing local linking opportunities to increase pedestrian permeability, or stretch for longer distances providing an intra-regional link between centres. The minimum footpath width of 1.5m should be provided as a general rule for all Collector routes.

6.1.4 Additional Route Considerations

Recreational links

Because recreational walking is such an intrinsic part of many Warringah residents' lifestyles, Primary, Secondary, and Collector routes have been identified with recreational walking in mind. Hence, recreational routes are incorporated as part of the recommended PAMP routes.

Some recreational routes are designed for walking only (for example, many trails in the National Parks) due to factors such as available width, sensitive environments, or uneven terrain. However, consideration is to be given to provide recreational paths where cycling is possible to assist with young families (children under 12 years of age and/or with strollers) and for the less mobile members of the community that use wheelchairs or mobility scooters.

It is intended that the Warringah PAMP complements the *Warringah Bike Plan*, and the *Warringah LGA Multi-Use Trail Strategy*. As the recommendations of these documents can change over time, it is recommended that wherever overlaps between them are identified (for example, an identified PAMP Primary route coinciding with an identified Priority 2 bike route or a proposed regional multi-use trail) that opportunities to co-locate them be explored, ensuring that all potential users are satisfactorily catered for.

This PAMP supports prioritising the Bicentennial Coastal Walk (as shown in the *Warringah Regional Multiple-Use Trails Strategy*, 2007), and includes links from the eastern focus areas to the beaches and coastline where possible.

School links

Through the various consultations undertaken during preparation of the PAMP, provision of accessible and continuous walking routes to and from schools across the Warringah LGA was a common issue raised. Many comments related to footpaths not being continuous or wide enough (particularly for parents also pushing prams), and lack of safe crossing points.

As with recreational links, consideration of school access links have been included as part of Primary, Secondary, or Collector routes across the Warringah LGA. However, each school will have different pedestrian facilities requirements depending on factors such as its catchment, mode of travel, or propensity to walk or cycle.

As part of this PAMP, it is recommended that all schools in Warringah LGA be encouraged to undertake the 'Safety around Schools' (or similar) initiative in partnership with Council, to identify preferred access routes for children walking/ cycling to school, preferred locations for car drop-off and pick-up and parking, and access to bus stops. From this, additional footpath, crossing, and signage requirements can be included in the PAMP.

6.2 Pedestrian Route Audits

The focus areas were audited through an in-depth "on-foot" field survey, undertaken in March 2010. Traffic engineers with road safety auditing skills and/or design for access and mobility experience walked along all the streets identified by Council as part of each focus area. The auditors each carried a Personal Digital Assistant (PDA, a mobile computer device) with Global Positioning System (GPS) capabilities and Geographic Information System (GIS) data, which allowed the auditor to log the location of deficiencies with the existing pedestrian facilities, and the approximate width of the existing footpath (if present).

The following issues were considered during the audit:

- Footpath condition and width
- Missing links
- Trip hazards/Slip hazards
- Obstructions
- Vertical clearance
- Crossing facility design and alignment
- Kerb ramp design, missing kerb ramps

In each of the focus areas, pedestrian facilities were audited with specific consideration of the needs of less mobile members of the community.

The issues and deficiencies identified in each of the focus areas are discussed in detail in Section 7 and illustrated in **Appendix A**.

The detailed nature of the audits in the focus areas identified the need for many maintenance works. Prioritisation of the maintenance works as "high", "medium" or "low" was determined using the RTA's

'*Weighted Criteria Scoring System for PAMP works prioritisation'* (as shown in Table 6.3.1). These prioritised maintenance works are incorporated in the PAMP Infrastructure Works Schedule in **Appendix G2 – Footpath Maintenance Schedule**.

6.3 PAMP Works Prioritisation Criteria

In establishing the Works Prioritisation Criteria, Council's '*Footpath Request Priority System' (*FRPS, reviewed in Section 3.6.1) was compared to the RTA's '*Weighted Criteria Scoring System for PAMP Works Prioritisation'* (as shown in Table 6.3.1, taken from RTA's *How to prepare a PAMP* guidelines, and referred to as "RTA's table" in the remainder of this section), and the RTA's table was considered more appropriate for prioritising the proposed PAMP works.

RTA's table does not include consideration of likely use by user groups with specific needs, while Council's FRPS does. However, it is not clear how the FRPS incorporates the additional considerations (listed under point 4 above), as these considerations do not seem to be part of the 'priority calculation'. In this regard, the RTA's table is preferable, as scores for all factors are included in its final 'project priority' calculation.

RTA's table includes consideration of the crash history of the area, which is not specifically included in Council's FRPS, although it could be noted under 'safety considerations'. Council's FRPS only covers footpath request, whereas RTA's table is used for prioritising all other pedestrian facilities, including road crossings, kerb ramps, signage and lighting. On balance, therefore, RTA's table was used for prioritising the PAMP works identified.

While prioritising the pedestrian routes (that is, as Primary, Secondary, and Collector routes) helps to determine what facilities are appropriate for each route, the works required on each route must also be prioritised (high, medium, and low priority). While generally high priority works should be completed before medium or low priority works, in reality, implementation may sometimes be 'opportunistic' or have to wait for a more opportune time: for example, if an area has been identified for footpath grinding, all locations in that area that require it would be done at the same time, regardless of whether they were listed as high, medium or low priority; or if a road is to be resurfaced, a crossing facility identified for improvement may also be done at the same time; or if a redevelopment is proposed, footpaths may be included as part of that redevelopment.

It should be noted that the Primary, Secondary, and Collector routes relate to walking access only. Council will have priorities regarding urban design, economic development etc. that could influence how and when resources are used. The priorities for pedestrian access need to be brought into the mix.

The pedestrian routes were prioritised for construction or upgrade based on the RTA's table. This allowed each action to be ranked as either high, medium or low depending on the score weighting.

The scoring system in RTA's table takes into account the following categories and the performance conditions:

- **Land use** – the number of attractors and generators in the area, the type of land use, distance and future developments. If there are multiple land use types, the land use type with the highest score is used;
- **Traffic impact** –based on the road hierarchy (eg. Pittwater Road is a State Road);
- **Safety** – how safe the public feel about the area, and the accident history;
- **Facility Benefit** –the demonstrated usage of the route. This has some connection to the land use category, however has input from observed activities and community consultation;
- **Continuity of routes** – based on how the route links up with the existing pedestrian network, whether it is to or from an existing footpath, or to an attractor and/or generator; and
- **Priority** – The priority relates to the identified route priority.

Table 6.3.1. Weighted Criteria Scoring System for PAMP Works Prioritisation.

Category	Criteria	Performance Conditions	Score
Land Use	Number of pedestrian attractors/generators (locations)	more than 5 locations	10
		3-5 locations	8
		1-2 locations	5
		0 locations	0
	Land use type	schools	10
		commercial/retail	8
		residential	5
		other	0
	Proximity to generators/attractors	less than 250 metres	10
		>250-500 metres	8
		>500-1000 metres	5
		>1000 metres	0
	Future developments with attractors/generators	high	5
		medium	3
		low	1
Traffic Impact	Road hierarchy	State Road	10
		Regional Road	8
		local road	6
		special use	4
		other	0
Safety	Identified hazardous area	high	10
		medium	8
		low	5
		none	0
	Identified pedestrian crashes (reported to police or local knowledge) as a 3 year average)	>3 reported injuries per year, or any fatalities	15
		3 reported injuries per year	10
		2 reported injuries per year	8
		1 reported injury per year	5
		0 reported injuries per year	0
Facility Benefits	Demonstrated path	high usage	10
		medium usage	8
		low usage	5
		not demonstrated	0
Continuity of routes	Addition to existing facility	link up footpath	10
		extension of footpath	8
		add to devices	5
		other	0
Priority	Pedestrian route hierarchy	Primary	10
		Secondary	6
		Collector	4
		Other	0
	Project Priority	**Total Score**	
	High Medium Low	70 to 100 50 to 69 0 to 49	

Source: *RTA Guidelines, How to Prepare a Pedestrian Access and Mobility Plan (2002)*

7. PAMP Pedestrian Network – by Focus Area

This section breaks down the PAMP Pedestrian Network into the focus areas identified by Council for the study, to better describe how the network was developed.

Each sub section provides a street map of the focus area, adjacent to an extract from the PAMP Pedestrian Network map (shown in **Appendix E**) of approximately the same focus area, and describes each of the focus areas in terms of:

- key pedestrian attractors and generators (both within the focus area and beyond it, if relevant),
- any pedestrian crash clusters;
- issues raised during consultations or identified in the focus area audit;
- any future developments or pedestrian link opportunities; and finally,
- Primary, Secondary, and Collector routes proposed for each focus area.

The recommendations for each focus area are discussed below and detailed in the Work Schedules located in **Appendix G**.

It should be noted that the PAMP network is strategic rather than detailed, balanced against the likely use in terms of resident and visitor populations and anticipated future development. It is not intended to cover all possible pedestrian routes within a focus area. Those focus areas with more intensive pedestrian activity, a high number of pedestrian attractors and/or generators, a high proportion of vulnerable user attractors/ generators, or strong recreational attractions, are likely to have higher priority routes and more routes identified compared to quieter neighbourhood centres.

Links between nearby town/ village/ neighbourhood centres and recreational attractors have been included as part of the network.

It is intended that this PAMP Pedestrian Network can provide the ‘backbone’ on which further pedestrian connections can be identified and extended.

7.1 Allambie Grove

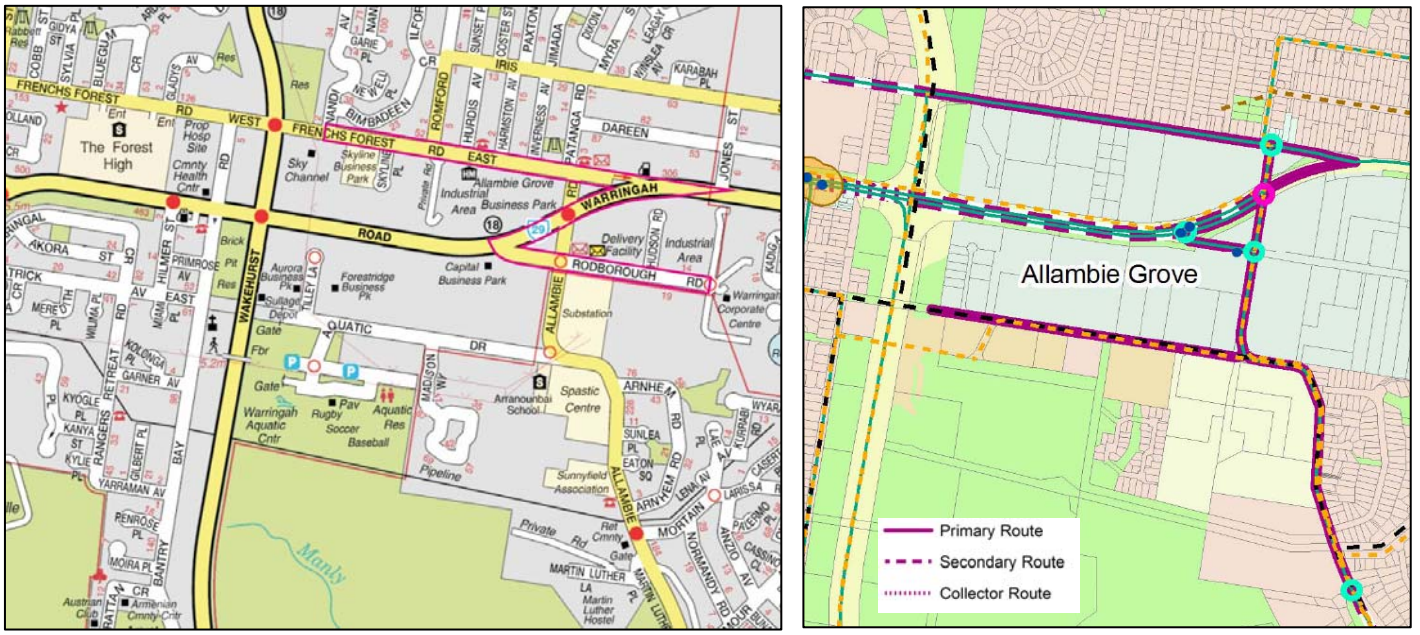


Figure 7.1.1: Allambie Grove focus area

The Allambie Grove (located in Frenchs Forest East) focus area includes:

- Skyline shops (on Frenchs Forest Road East)
- Business/ industrial parks: Skyline, Allambie Grove, Aurora, Forestridge, Capital Business Parks

Skyline shops is a commercial/ retail strip, served by bus routes along Frenchs Forest Road East. The south side of the road is largely occupied by business parks, with access to/from Frenchs Forest Road East. Pedestrian activity is high due to the mix and intensity of land use.

North of the focus area is a low-density residential area. South of the focus area on Allambie Road and Aquatic Drive are a number of significant pedestrian attractors and generators which would have a high proportion of user groups with specific needs, including:

- Warringah Aquatic Centre
- Aquatic Reserve – includes playing fields
- The Spastic Centre
- Arranounbai School – a special school operated by the Spastic Centre;
- Sunnyfield Association – employment and living skills facility for people with disabilities;
- Allambie Heights Village/ Martin Luther Hostel – a large retirement and aged care village.

The disability and aged attractors and generators close to this area require footpaths free of obstructions, low gradients and good crossing facilities along links to both Skyline Shops, the Warringah Aquatic Centre, and to Allambie Heights village centre (discussed in above). Pedestrian access to/from these facilities is generally substandard for wheelchair access, with no footpath along Aquatic Drive, and narrow and unsafe footpaths on Allambie Road where provided. Bus stops are also poorly designed, without sufficient space for pedestrians to pass waiting passengers, and one bus stop on Allambie Road does not have a footpath connected to it.

Issues raised in consultations include:

- Some kerb ramps in the area are either missing or are not designed to standard making it difficult to cross the road;
- Difficulties crossing Allambie Road and Frenchs Forest Road East (at Skyline shops) in a wheelchair/ mobility scooter – sight distance issues;
- Pedestrian crossing required at Capital Business Park (bus stop);
- Difficulties crossing Allambie Road near Warringah Road and Rodborough Road.

The Allambie Heights focus area includes a section of Warringah Road, an RTA State Road. There is a signalised crossing at the Warringah Road/ Allambie Road intersection, with a pedestrian crossing on the eastern leg only. It is recommended that pedestrian crossings be installed on all other legs of this signalised intersection to improve pedestrian access between the commercial and industrial business parks on either side of Warringah Road.

There is a zebra crossing just to the west of the Frenchs Forest Road East/ Allambie Road intersection, and a pedestrian refuge island to the west of Romford Road. There is potential to improve pedestrian amenity around Skyline shops and business parks by providing additional crossing locations along Frenchs Forest Road East, and improving the pedestrian facilities between Allambie Grove and Allambie Heights to encourage walking in the area, particularly by the user groups with specific needs of the various schools, centres, and aged care facilities in the area. Following requests for improved pedestrian facilities on Frenchs Forest Road East, in June 2009, Council undertook pedestrian counts on Frenchs Forest Road East near Romford Road, and recommended that a concrete and painted median east of Romford Road be installed. Footpaths along the Skyline shops also need maintenance attention.

Conversion of the 2-lane roundabout at the Allambie Road/ Rodborough Road intersection to signals with pedestrian phases would improve pedestrian safety and amenity, and address an issue raised during consultation.

Primary Routes

Frenchs Forest Road East (between Wakehurst Parkway and Warringah Road): Access along Skyline Shops, business parks, and also served by buses. Due to the strong pedestrian activity at Skyline Shops and to/from the bus stops there, it is recommended that a concrete and painted median on Frenchs Forest Road East, east of Romford Road be installed.

Allambie Road (between Mortain Avenue and Frenchs Forest Road East): Currently footpaths are provided on both sides of the road, but are only 1.2m wide. Crossing facilities are also substandard and require upgrading. Bus stop areas need to be wide enough to allow wheelchairs/ prams/ mobility scooters to pass another waiting. Council has identified the need to add pedestrian signal phases on the western and southern legs of the Allambie Road/ Warringah Road signalised intersection.

Aquatic Drive: This route includes a number of significant pedestrian attractors and generators – Warringah Aquatic Centre, Aquatic Park, and Arranounbai School – and has potential to be a strong recreational route. It does not have any formal pedestrian facilities along its southern side, but could serve access to/from the Aquatic Centre by user groups with specific needs, hence a minimum 1.8m wide footpath is recommended.

Rodborough Road: provides access for the employees of the industrial/ business parks to Skyline shops.

Secondary Route

Warringah Road (between Wakehurst Parkway and Allambie Road): provides access for the employees of the industrial/ business parks to Skyline shops.

Collector Route

Warringah Road (between Wakehurst Parkway and Starkey Street, Forestville): provides an intra-regional link between Allambie Grove, Forestway, and Forestville.

7.2 Allambie Heights

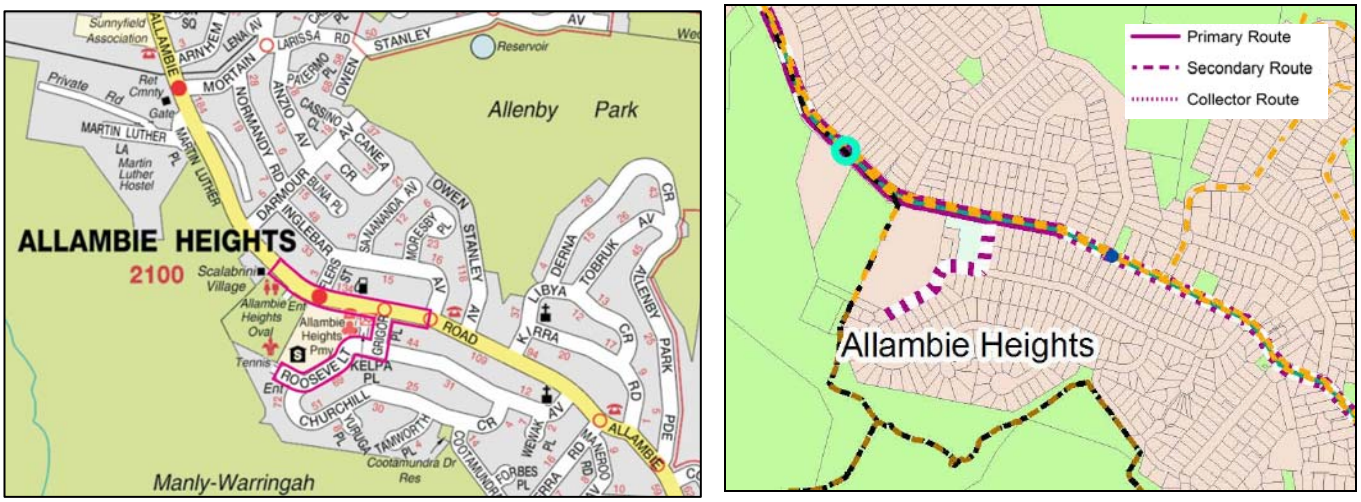


Figure 7.2.1: Allambie Heights focus area

The focus area of Allambie Heights is a small village centre located on Allambie Road (a RTA regional road), and includes Grigor Place and part of Roosevelt Avenue. The focus area includes the following pedestrian attractors and generators:

- Allambie Heights Shops consisting of small businesses;
- Allambie Heights Primary School;
- Allambie Heights Oval, tennis courts, and link to Manly-Warringah War Memorial Park multi-use trail;
- Scalabrini Village, an aged care facility consisting of a nursing home, hostel and self-care units;
- Bus route along Allambie Road.

Beyond the Allambie Heights focus area is low-density housing, bounded by Allenby Park to the north and north east, and Manly-Warringah War Memorial Park (Manly Dam Reserve) to the south and south-west. There are also three potentially significant pedestrian generators for the Allambie Heights village centre between 0.5-1kms northwest from the focus area, along Allambie Road:

- Allambie Heights Village retirement village
- Sunnyfield Association
- The Spastic Centre

Pedestrian activities in this focus area are largely local trips. Due the types of attractors and generators in the area, there is a broad variety of users, with a potentially high proportion of user groups with specific needs. Families with young children are attracted to the areas for the primary school and parks, while Scalabrini Village, Allambie Heights Village, Sunnyfield Association, and The Spastic Centre, generate aged persons and persons with a disability.

While there are footpaths along both sides of Allambie Road in the focus area, some sections of the footpath and kerb ramps require upgrading (intersection of Allambie Street/Flers Street). There is footpath on one side of the road along Grigor Place/ Roosevelt Avenue. There is also a multi-use trail link from Allambie Road alongside Allambie Heights Oval, into the Manly-Warringah War Memorial Park multi-use trail.

One issue raised regarding this area during consultation is that kerb ramps are too steep. Key issues noted in the route audit were: informal walking tracks were noted on Roosevelt Avenue on the side without a footpath; some uneven footpath locations (trip or fall hazard).

Primary Route

Allambie Road (between Inglebar Avenue and Darmour Avenue): This route would provide access to Allambie shops for a large population of user groups with specific needs from The Spastic Centre, Sunnyfield Association, Allambie Heights Village retirement village, and Scalabrini Village. Currently footpaths are provided on both sides of Allambie Road along most of this section. The footpath is narrower than preferred for a Primary route (majority 1.2m width), so will require widening to 2.0m preferably (due to the high proportion of wheelchairs and mobility scooters expected).

Secondary Route

Allambie Road (between Darmour Avenue and Mortain Avenue): links user groups with specific needs with the village centre. There is a footpath only on the western side of Allambie Road along this section, and along this section (between Darmour Avenue and Arnhem Road) the footpath is often unsafe: too narrow for many wheelchairs, with no passing opportunities; directly beside the kerb; and often obstructed by signage/ telegraph poles. The footpath at the bus stop should be wide enough to allow a wheelchair/ pram/ mobility scooter to pass a person waiting at the bus stop.

Collector Routes

Grigor Place and Roosevelt Avenue: The provision of additional footpaths would improve access to the village centre, Allambie Heights Primary School and recreational facilities, and benefit the local community. This route also links the Allambie Heights shops with the Manly-Warringah War Memorial Park multi-use trail at the end of Roosevelt Avenue.

Allambie Road (between Inglebar Avenue and Ornwell Road, Allambie): Local access pedestrian link to Warringah Mall, via Allambie Village (not an identified focus area in this study, but contains a number of shops).

7.3 Belrose

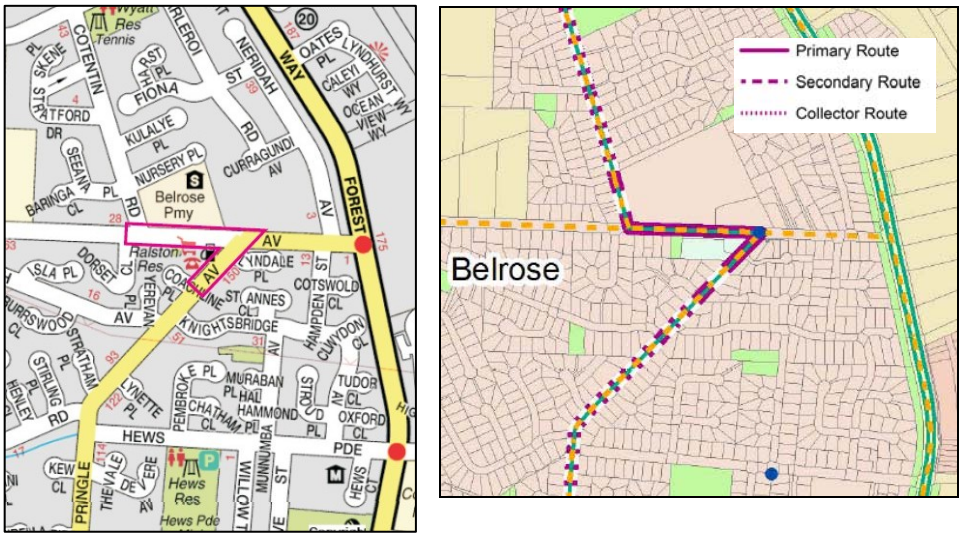


Figure 7.3.1: Belrose focus area

The Belrose focus area consists of Belrose Village Shops, Belrose Primary School and some surrounding residential areas. Pedestrian activities in this focus area are mainly local trips. Generally the area has good pedestrian provision, however some sections of the footpath and kerb ramps requiring upgrading. There is a zebra crossing across Ralston Avenue linking the Belrose Primary School and the Belrose Village shops.

Simple measures such as wheel stops in the Village shops parking area to prevent vehicles from encroaching onto the footpaths could assist in improving pedestrian safety along the shop frontages, and maintaining a clear path width.

Secondary Route

Ralston Avenue (between Contentin Road and Pringle Avenue): There are footpaths on both sides of the road and a pedestrian crossing in this section; however a wider footpath (to 1.5 – 2.0m) would assist with pedestrian access to education and retail activities. A path of 1.5m clear of obstructions (such as tables and chairs, bins, and signs) must be maintained for access by wheelchairs and prams, etc.

Collector Route

Pringle Avenue (between Ralston Avenue and Blackbutts Road): There are footpaths on both sides of the road for sections of the route, with footpaths on one side for the majority of the route. This route would assist with connections within this area of the LGA and act as a recreational route.

7.4 Belrose Austlink

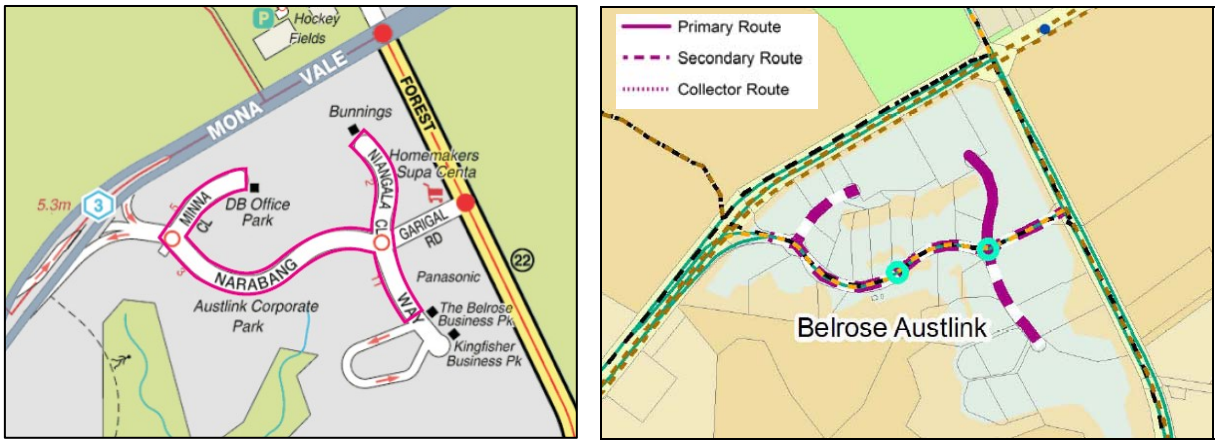


Figure 7.4.1: Belrose Austlink focus area

The Belrose Austlink Corporate Park focus area is a relatively isolated commercial and retail precinct in the north of Belrose. It is accessed via Mona Vale Road and Forest Way, and is surrounded by Garigal National Park (to the south and east), Ku-ring-gai Chase National Park (to the north-west), and playing fields (to the north).

The street frontages of the land that has not been developed do not have footpaths. Other sections of the footpath require upgrading where there are trip hazards and sections that have been overgrown by vegetation.

Beyond the focus area, to the north-east, along Mona Vale Road, there are more commercial and industrial land uses, a golf entertainment centre, and Forest Coach Lines' bus depot. There are no strong pedestrian generators in or near the focus area, other than the employees of businesses operating in the area.

There is good provision of cycle links, with a regional route along Mona Vale Road, a cycle route along Forest Way, and a proposed cycle link through the focus area via Garigal Road and Narabang Way.

A potential opportunity for the focus area is better walking trail connections into the National Parks, to encourage greater physical activity during employees' lunchtimes.

Public consultation identified that in the focus area, there is poor connectivity between the footpath and private premises. Providing these links would increase walkability to the areas and the between businesses.

Primary Route

Niangala Close: Currently there are footpaths on both sides of the road; however a wider footpath would assist with the connection between the different attractors on this road.

Secondary Route

Narabang Way, Minna Close, Garigal Road: All other roads within the business park should be designated a Secondary route. Although the business park has ample parking to cater for the area, an improvement in pedestrian facilities could reduce vehicle activity and control parking demand. There are footpaths on both sides of the road except for some missing links at some locations. Narabang Way would benefit from additional crossing opportunities and breaks in the vegetated median strip. It is recommended that pedestrian islands be installed on all four legs of the roundabout at Narabang Way/ Garidal Road to improve pedestrian safety at this intersection.

7.5 Brookvale

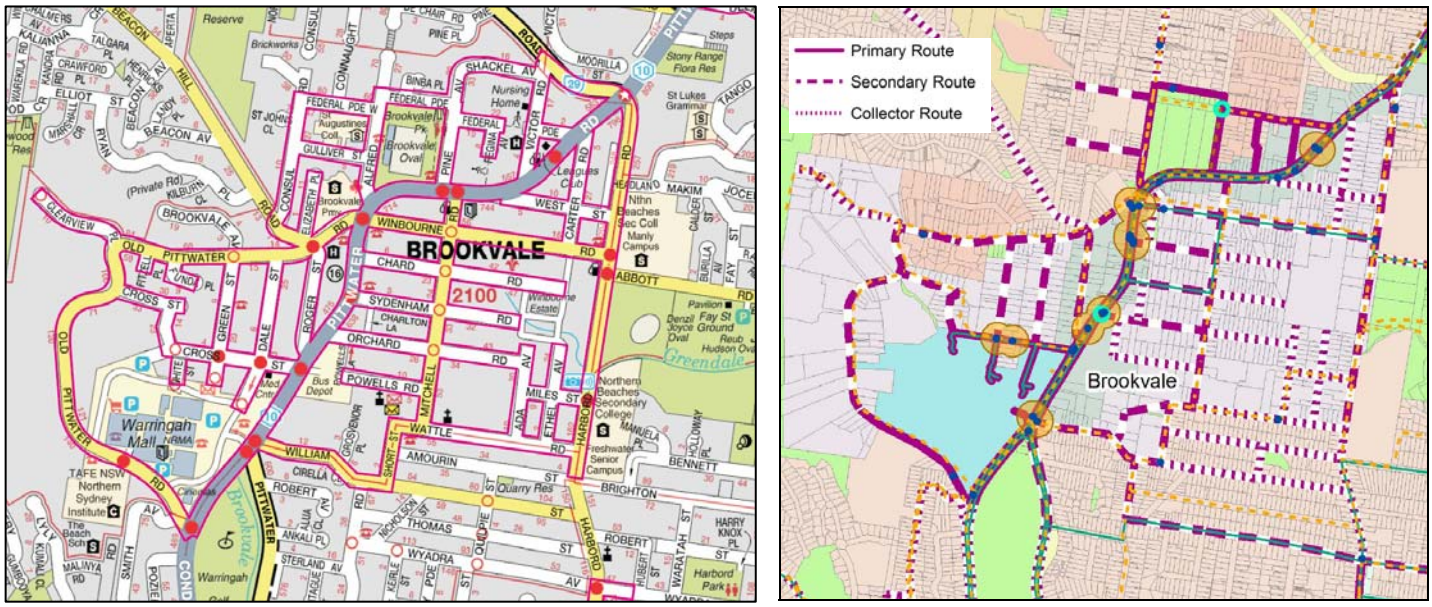


Figure 7.5.1: Brookvale focus area

While Brookvale-Dee Why has been identified as a single twin Major Centre, it is appropriate to discuss the centres separately, because from a pedestrian access point of view they are different centres.

The Brookvale focus area consists of many different land uses, including two major attractors – Warringah Mall and Brookvale Oval – as well as car yards and retail/ commercial premises along Condamine Street/ Pittwater Road; industrial areas to the north and west of Warringah Mall, and between Pittwater Road and Harbord Road; the Sydney Buses' Brookvale bus depot; and many educational institutions (including primary, secondary and tertiary).

There is high-density residential in the areas around Pine Avenue/ Shackel Avenue, and around Brookvale Avenue/ Old Pittwater Road. The majority of the area has footpaths however some industrial and residential areas are unpaved. There are also a number of sections of the footpath network that are missing or have poorly designed kerb ramps.

The Brookvale centre is well-served by buses, with the Sydney Buses Brookvale depot located almost opposite the Mall, and most N-S bus routes (between the Northern Beaches and Sydney CBD) running along Condamine Street with stops at Warringah Mall. This proximity to good bus services suggests the opportunity for employees of the extensive commercial/ industrial areas of Brookvale to use buses for their journey to work. To encourage greater bus use, providing footpaths connecting the industrial areas to the bus stops is a first step. Preparing a 'green travel plan' for the area could be a supporting step that Council could undertake.

Within the industrial area east of Pittwater Road, the footpath audit found evidence of much footpath damage from heavy vehicles, and poor pavement condition in many sections (particularly Mitchell Road and Winbourne Road).

Around Brookvale Oval are some schools and residential areas. The pedestrian facilities around the schools lack connectivity. It is important that this area has high quality pedestrian facilities, due to high numbers of pedestrians accessing the school and sporting activities.

The *Draft Warringah DCP (2009)* identifies 'Special Area Controls' for Warringah Mall, and includes objectives and requirements regarding 'pedestrian amenity' and 'pedestrian access'. The objectives are:

- *To improve access to and from the centre by either enhancing existing links or creating new links as redevelopment occurs.*
- *To encourage an address to the street to provide clear and safe pedestrian access.*
- *To avoid creating any additional vehicular entries from primary street frontages.*
- *To increase pedestrian amenity by providing protection from wet weather and sunlight with awnings and/or colonnades.*
- *To ensure that people who visit the centre are able to access and use all spaces, services and facilities through the creation of barrier free environment in all public spaces, premises and associated spaces.*
- *To provide a safe and easy access to buildings to enable better use and enjoyment by people regardless of age and physical condition, whilst also contributing to the vitality and vibrancy of the public domain.*
- *To enhance connections to the centre from public transport.*
- *To provide services that support the needs of mobility impaired customers.*

The requirements are:

- *24. New development along the Condamine Street and Pittwater Road frontage to incorporate enhanced pedestrian links through to the existing centre.*
- *25. Future development, where appropriate, to consider maximising safe pedestrian movement through the car park to the centre.*
- *26. The design of new development should consider where practical, the ability to incorporate weather protection measures.*
- *39. Main building entry points should be clearly visible from primary street frontages and enhanced as appropriate with awnings, building signage or high quality architectural features that improve clarity of building address and contribute to visitor and occupant amenity.*
- *40. Future development along the Condamine Street/Pittwater Road frontage shall incorporate measures to ensure safe and unimpeded continuous paths of travel are achieved from existing bus stops to the centre.*
- *41. Ensure that the existing on-site bus interchange is retained, and where practical, enhance its function as part of future development.*

There are pedestrian crash clusters on Pittwater Road between Winbourne Road and Chard Road, and between Orchard Road and Cross Street. This indicates that further measures need to be put in place to improve pedestrian safety on Pittwater Road in this area. This section of Pittwater Road through Brookvale centre serves a high volume of retail, commercial, and industrial activity. An additional signalised pedestrian crossing at Orchard Road would provide a safe crossing point, breaking up the 300m between the signalised crossing points at Sydenham Road and Cross Street, and thereby potentially reducing the number of dangerous uncontrolled pedestrian crossings in this vicinity.

Observations show that the traffic environment along Pittwater Road/ Condamine Street is not conducive to encouraging pedestrian activity as traffic volumes and speed are generally high. Some kerbside tree planting could alert drivers to the town centre environment and prompt them to slow down and be more aware of pedestrians. A lower posted speed limit may also be appropriate. Median

fencing could be installed in sections of road where pedestrian accidents are most common, but this needs to be balanced with providing convenient and safe pedestrian crossing points. It is recommended that RTA be approached to work with Council to investigate the causes of the pedestrian accidents, and develop actions to mitigate those causes.

The Brookvale centre is well-served by buses. Pittwater Road is part of the Strategic Bus Corridors between Mona Vale and Sydney CBD, and Brookvale and Chatswood, resulting in frequent bus services along Pittwater Road/ Condamine Street to local and regional destinations.

There are opportunities to make pedestrian connections from Brookvale to adjacent areas including:

A. **Dee Why town centre**, via Pittwater Road;
B. **North Curl Curl Beach**, via Winbourne Road-Abbott Road and Pitt Road (to Griffin Parade) – recreational link takes in Northern Beaches Secondary College Manly Campus, John Fisher Park, playing fields and North Curl Curl Primary School;
C. **Freshwater village, Freshwater Beach, and Curl Curl Beach**, via Wyadra Avenue-Oliver Street, Wyadra Avenue-Carlton Street-Evans Street-Carrington Parade & Lumsdaine Drive – links take in Harbord Park, Jacka Park, and Harbord Primary School;
D. **Queenscliff and Manly Lagoon**, via Pittwater Road – recreational link runs alongside Warringah Golf Club, Manly District Park, Nolan Reserve (including tennis courts, bowls club, netball courts), nursing home, a church, a community health centre;
E. **Allambie Heights**, via Smith Avenue-Orara Road-Allambie Road – links via Allambie village;
F. **Beacon Hill village and Reserve**, via Beacon Hill Road;
G. **Narraweena village**, via Alfred Road;

Issues raised in consultations include:

- Need for a footpath along Wyadra Avenue – popular pedestrian route used regularly by parents with prams and mobility impaired persons, but discontinuous so people walk on the roadway causing safety concerns, also provides local access to Harbord Primary School;
- Improve pedestrian access to Warringah Mall from Cross Street;
- Kerb ramp near bus stop at Warringah Mall is too steep for wheelchair users;
- Need better access to Warringah Mall from Allambie, so suggest continue footpath along Smith Avenue to Condamine Street.

Primary Routes

Pittwater Road (between Warringah Road and Old Pittwater Road): This is the 'main street' of the Brookvale major centre. Full-width pedestrian footpaths are recommended along this route. An additional signalised pedestrian crossing at Orchard Road could reduce the number of uncontrolled pedestrian crossings of Pittwater Road in this vicinity. There are footpaths on both sides of the road with a majority the appropriate width for a Primary path. Sections of footpath around Brookvale Oval should be widened (to 2.8m) to cater for pedestrian activities generated by Brookvale Oval. It is recommended that the RTA be approached to consider tree plantings, speed limit reduction, or other urban design features to alert drivers to the town centre environment.

Pine Avenue, Federal Parade and Alfred Road (around Brookvale Oval): There are shared paths around Brookvale Oval; however the other sides of the roads lack pedestrian facilities to cater for a Primary route. An additional crossing location near the intersection of Pine Avenue and Federal Parade should be considered to provide a safe crossing location.

Cross Street (between White Street and Pittwater Road) and the links into Warringah Mall: These routes currently have footpaths; however the provision of wider footpaths in the area would hopefully encourage additional pedestrian activity and help support retail growth in the area outside the Mall. From the questionnaire survey, Warringah Mall was identified as a high attraction area for residents of Warringah. Therefore improvements in the pedestrian facilities at this location will benefit the wider community.

Old Pittwater Road (along Warringah Mall): Provide good footpath access to Pittwater Road buses for Northern Sydney TAFE.

Secondary Routes

Due to the employment and land use intensity of the Brookvale focus area, Secondary routes have been nominated on most streets one block back from Pittwater Road or other Primary routes. Other Secondary routes provide access from Brookvale to a nearby village, via significant pedestrian generators and attractors. Some of the key Secondary routes in the Brookvale focus area are:

Pittwater Road (between Delmar Parade and Warringah Road): provides the link between Dee Why and Brookvale (Link A above). Footpaths are provided on both sides of the road, but the route would benefit from pedestrian directional signage and seating. Some sections of footpath are covered by trees, although this is good during summer, lighting should be considered in these sections to increase safety at night.

Old Pittwater Road: is the main access pathway for the industrial areas around Warringah Mall. Footpaths in industrial areas should be provided to encourage staff to use public transport and thereby minimise the requirement for staff parking.

Harbord Road (between Warringah Road and Amourin Street): links the pedestrian routes between Brookvale and the beaches. There are footpaths on both sides of this route, however widening the footpaths and installing appropriate crossings will improve and promote walking in the area.

William Street-Corrie Road-Wyadra Avenue-Oliver Street route: links Brookvale to Freshwater Village and beach (Link C above), and Wyadra Avenue is a popular local pedestrian route.

Collector Routes

Collector routes in the Brookvale focus area extend the pedestrian provision from the Secondary routes, through the industrial area to the east of Pittwater Road. Other Collector routes provide pedestrian connections to nearby villages or recreational attractors. The key Collector routes are:

Abbott Road and Pitt Road (to Griffin Parade): completes link to North Curl Curl Beach (Link B above). Abbott Road is also identified as a future bicycle route, and Pitt Road is on a bus route.

Pittwater Road (between Sterland Avenue and Manly Lagoon Bridge): completes link to Manly Lagoon (Link D above).

Smith Avenue-Orara Road-Allambie Road: links to Allambie Heights via Allambie village (Link E above). Council has identified the need to provide a pedestrian island on the northern leg of the Orara Road/ Allambie Road roundabout.

Clearview Place: links to Garigal National Park, and is identified as part of a future bicycle route connection into the National Park.

Beacon Hill Road: links to Beacon Hill village and Beacon Hill Reserve (Link F above).

Alfred Road: links to Narraweena village (Link G above).

7.6 Collaroy

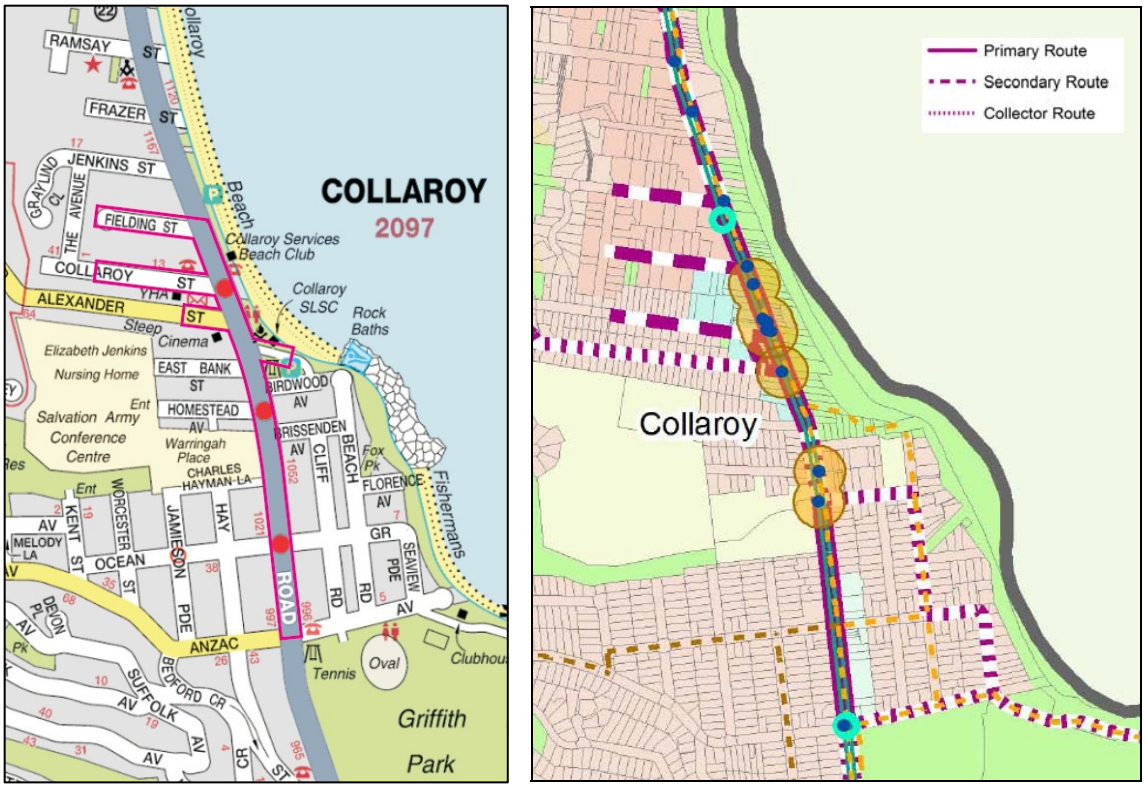


Figure 7.6.1: Collaroy focus area

There are almost 2 kilometres of beach line from North Narrabeen Beach to Collaroy Beach, of which 800m runs almost alongside Pittwater Road (between Devitt Street and Alexander Street).

The Collaroy focus area straddles Pittwater Road, and includes the Collaroy town centre (between Fielding Street and East Bank Street), Collaroy Beach and associated facilities (SLSC and Beach Club), a large nursing home and conference centre, and Collaroy village centre (between Brissenden Avenue and Anzac Avenue). The town centre attracts visitors from across Warringah and beyond, while the village centre to the south of the focus area serves a local market. Generally the area has good pedestrian provision, however some sections of the footpath and kerb ramps require upgrading (at the intersections of Collaroy Street and Pittwater Road, Pittwater Road and Ocean Grove, Pittwater Road and Eastbank Street, and Pittwater Road and Alexander Street).

Collaroy town centre consists of a range of retail shops, cafes, a cinema, youth hostel, and post office on the western side of Pittwater Road with the beach on the eastern side. There is therefore strong pedestrian demand across Pittwater Road within Collaroy town centre, but this conflicts with the high volume and high speed traffic conditions on Pittwater Road. The result of these conflicts is that Collaroy is one of the 'Top 4' crash cluster areas in Warringah LGA, with crashes primarily occurring within 100m of the following intersections:

- Pittwater Road/ Collaroy Street/ Alexander Street – 7 pedestrian crashes;
- Pittwater Road/ Homestead Street – 3 crashes.

Issues raised in consultations include:

- Need additional crossing of Pittwater Road in Collaroy.

- Recreational walking between Collaroy Plateau and Collaroy town centre/ Beach is a popular activity.

Key issues noted in the route audit were:

- Kerb ramps crossing Alexander Street, Telopea Street, and Ocean Street not aligned and in poor condition.
- Footpath condition generally good, with some maintenance required.
- The strong pedestrian desire line across Pittwater Road, high traffic volumes, and strong bus use due to high- and medium-density residential premises, suggest that additional signalised crossing locations may be warranted. It is recommended that Council discuss with RTA the opportunity to install additional signalised crossings across Pittwater Road:
  - Somewhere between Wetherill Street and Fielding Street – to provide access to the bus stops on Pittwater Road;
  - At Alexander Street – serving the pedestrian desire line between Collaroy Plateau and Collaroy Beach (particularly for recreational walkers);
  - South of Hay Street – serving the Long Reef beach access point, kiosk and SLSC.

  In addition, it is recommended that the RTA be approached to consider tree plantings, speed limit reduction, or other urban design features to alert drivers to the town centre environment through Collaroy town centre.

There are also opportunities to provide local recreational links to the regional Bicentennial Coastal Walk.

Primary Routes

Pittwater Road (between Jenkins Street and Eastbank Avenue): There are footpaths on both sides of road along this section, with only some sections narrower than preferred for a Primary route. Additional crossing opportunities would benefit this area.

Pittwater Road (between Brissenden Avenue and Anzac Avenue): Links the nursing home and Salvation Army facilities with Collaroy village and recreational attractors on Long Reef headland (tennis courts, oval, golf course, and walking trail). A signalised pedestrian crossing at the Anzac Avenue intersection is recommended to provide a safe crossing point for this recreational link.

Secondary Routes

Pittwater Road (between Narrabeen and Collaroy town centres): This route provides access for the high- and medium-density residential developments along Pittwater Road, to the stretch of beaches between Narrabeen and Collaroy, as well as to/from the bus stops along Pittwater Road. Currently there are footpaths along this route; however they are narrower than preferred.

Jenkins Street, Fielding Street, and Collaroy Street: Provides access between these high- and medium- density residential areas to Collaroy town centre and beach.

Collector Routes

Alexander Street: Links Collaroy Plateau to Collaroy Beach and town centre, and public transport on Pittwater Road.

Brissenden Avenue-Ocean Grove-Seaview Parade: This route provides a recreational walking route from Pittwater Road along the coast towards Fishermans Beach and Long Reef headland.

Pittwater Road (between Anzac Avenue, Collaroy, and Hawkesbury Avenue, Dee Why): Provision of a footpath on the eastern side would serve as a recreational link along Griffith Park and Dee Why Lagoon, and provide access to Long Reef Beach.

7.7 Collaroy Plateau

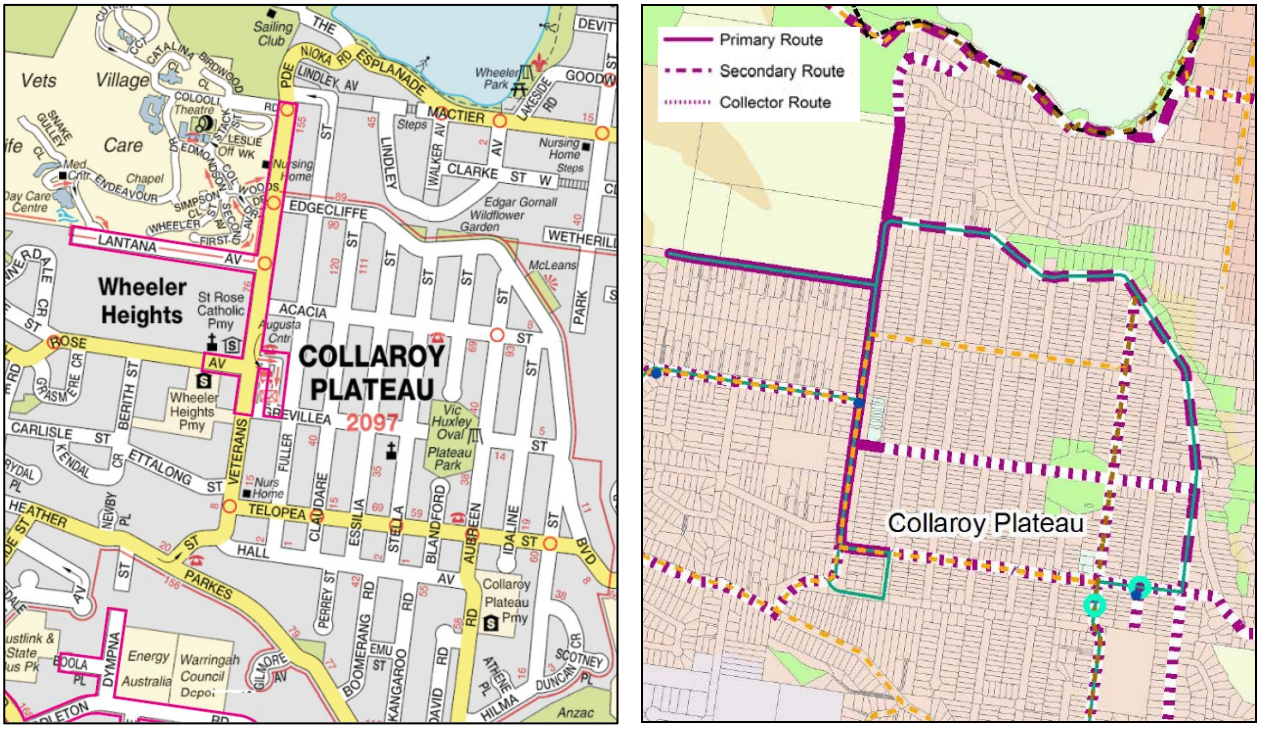


Figure 7.7.1: Collaroy Plateau focus area

The key pedestrian attractors and generators in the Collaroy Plateau focus area include:

- RSL War Veterans Retirement Village – a large 500-resident aged care facility, providing different levels of care and incorporating many on-site facilities, including a theatre, bowls lawn, chapel, medical centre, and swim centre.
- Collaroy Plateau shops – local village shops including post office, and Augusta Centre.
- Primary Schools – St Rose and Wheeler Heights (and beyond the focus area Collaroy Plateau on Plateau Road/ Aubreen Street).
- A church and nursing homes.
- Low-density residential.

Issues raised during consultations include:

- Need for a continuous footpath along Veterans Parade to serve the schools;
- Edgecliffe Boulevard is a popular recreational walking route down to Collaroy Beach;
- Link from Veterans Parade to Narrabeen Lakes is also a popular recreational walking route.
- Need for a school crossing of Plateau Road/ Aubreen Street near Collaroy Plateau Primary School.
- Need footpaths to link to Wheeler Heights/ Cromer industrial area, via Heather Street and Ambleside Street.
- Another pedestrian crossing is required on Plateau Road between Hall Avenue and Telopea Street.
- Traffic calming needed along the length of Hall Avenue.

- Improve pedestrian access in the Augusta Centre car park.
- Need a link between Collaroy Plateau and Cromer.

The audit identified some sections of footpath missing, and kerb ramps requiring upgrade (at the intersections of Veterans Parade and Grevillea Street, Veterans Parade and Edgecliffe Boulevard and along Rose Avenue). Pedestrian amenity would be improved by providing wider footpaths, or passing areas due to the number of motorized scooters in the area. A simple measure such as wheel stops would improve pedestrian access around the shop frontages.

Primary Routes

Veterans Parade (between Telopea Street and Colooli Street): There are 1.2m wide footpaths on both sides of these roads for the majority of this route with a width of 1.2m. The western side of the footpath is used by the aged, some of which use motorised scooters, to travel between the retirement village and the shops. The provision of a wider route would assist with the movement of the aged and may help with recreational activities. The provision of seating bays along this route should also be considered to provide rest points, ensuring that the seating bays are designed such that a seated person does not encroach on the minimum 1.5m clear footpath width.

Lantana Avenue: Provides access between the RSL War Veterans Village and Collaroy shops (via Veterans Parade).

Secondary Route

Edgecliffe Boulevard: While a steep route, this is a popular recreational link for Collaroy Plateau residents down to Collaroy Beach and town centre.

Collector Routes

Rose Avenue (through to South Creek Road): This is the preferred link between Collaroy Plateau and Cromer due to the gradient in the area. There is a footpath on one side of this route for the length of this link.

Veterans Parade (north of Colooli Road) and Nioka Road: There is a footpath on the western side of the road. This link connects the Plateau to Narrabeen Lake. There is one seat on this route, however it may benefit from an additional seat (inset into a bay, to maintain clear footpath width of 1.5m) to create more rest points along this steep link.

Grevillea Street: provides a local connection to Collaroy Plateau shops and Vic Huxley Oval.

Telopea Street: connection to Alexander Street provides a link between Collaroy Plateau and Collaroy Beach.

Aubreen Street/ Plateau Road: provides a local link to the local public primary school. Further investigations should be made to determine, in conjunction with Collaroy Plateau Public school, the most appropriate crossing location (whether on Aubreen Street or on Plateau Road).

7.8 Cromer

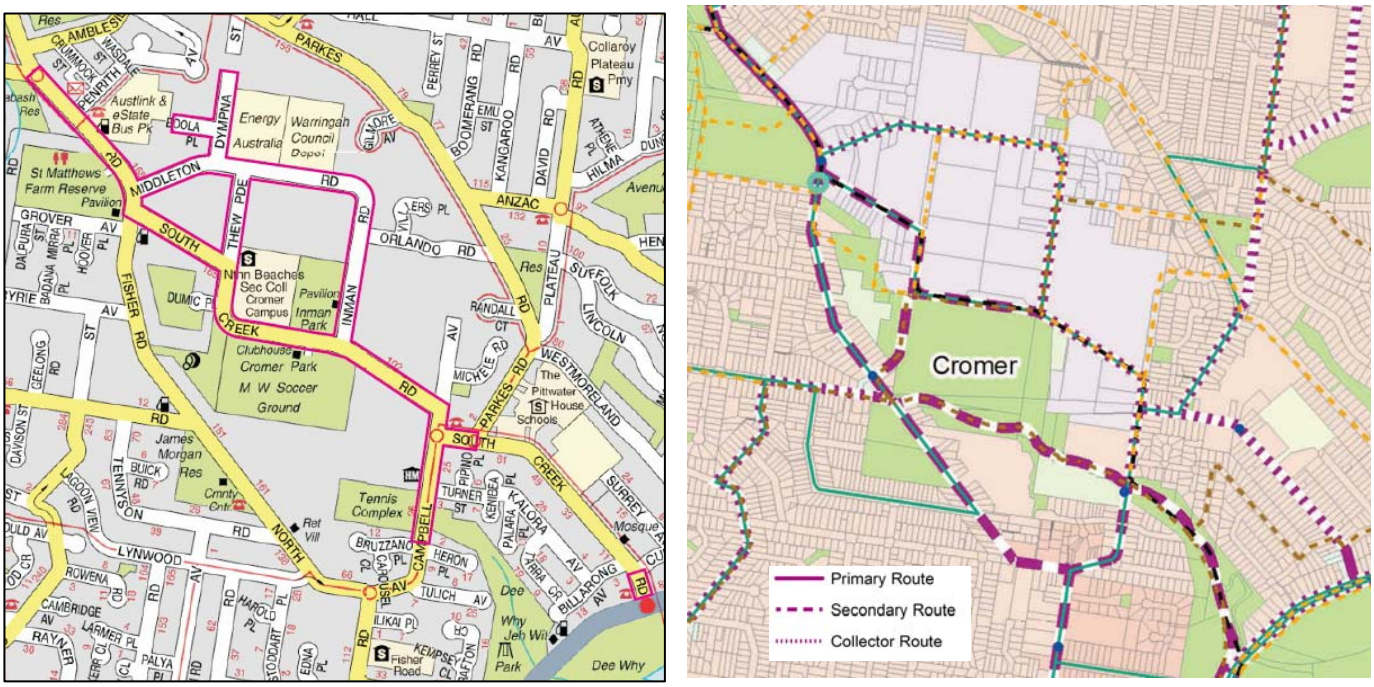


Figure 7.8.1: Cromer focus area

The Cromer focus area serves a broad range of purposes, including:

- Industrial area with some shops (including Austlink & eState business Park, and Warringah Council offices and depot);
- Recreational grounds (including Inman Park, Cromer Park, St Matthews Farm Reserve, James Morgan Reserve and community centre, lawn bowls grounds, tennis complex, and Dumic Park);
- Northern Beaches Secondary College (Cromer Campus);
- Residential along Fisher Road North.

A large majority of the focus area has no footpaths, and there are signs of informal paths. The audit identified some kerb ramps requiring upgrade. Some sections of footpaths in the industrial areas have been damaged by heavy vehicles driving over them. Within the industrial areas pedestrian activity is not high, and it is likely that most people rely on private vehicles. The pedestrian facilities along South Creek Road and Fisher Road are basic, with some missing sections of footpath, and few crossing facilities provided. There were no crash cluster locations within or near this focus area.

Cromer Park is to be extensively upgraded in the medium-term to accommodate new playing fields, a learn to ride area, multi-use trail, new car parking, amenities building and kiosk. The future upgraded Cromer Park is therefore likely to attract users from across the LGA.

Issues raised during consultation include:

- Fisher Road North – cars travelling too fast, particularly dangerous when children are crossing (near Grover Avenue, Middleton Road, and near Ryrie Avenue).
- Need pedestrian crossing – particularly for school children – on Fisher Road North near Grover Avenue.
- Fisher Road North near South Creek Road – tree roots causing uneven footpath.

Issues observed during the audit include:

- Informal walking tracks within the industrial area (Middleton Road, Thew Parade, Inman Road, South Creek Road) – must provide footpaths and land-use mix to encourage and support employees, and encourage bus use (thereby reducing staff parking requirements);
- Fisher Road North – tree damage on footpath near Middleton Road;
- Campbell Avenue, south of South Creek Road – broken footpaths;
- St Matthews Farm Reserve has signs of having high pedestrian activity along Fisher Road and would benefit by a footpath on the southwest side and additional crossing locations along South Creek Road and Fisher Road.
- Additional crossing opportunities required along South Creek Road and Fisher Road North.

Primary Route

South Creek Road (Ambleside Street to Fisher Road North): There is a footpath on the north-eastern side of the road, however there is strong evidence of pedestrian activity on the south-western side of street along St Matthews Farm Reserve. It is recommended that a pedestrian crossing be provided in the vicinity of Middleton Road and Grover Avenue, in consultation with the Northern Beaches Secondary College Cromer Campus.

Secondary Routes

South Creek Road (between Fisher Road North and Inman Road): This link passes various attractors (Northern Beaches Secondary College, industrial business). There are some footpaths along this route, however the improvement in pedestrian facilities along this route will be beneficial for the employment and educational facilities in the area.

Existing off-road shared path between South Creek Road and Fisher Road North (along Cromer Park): provides access link from secondary school to Fisher Road North.

Existing off-road shared path Fisher Road North (near Carawa Road) via tennis complex, Dee Why Park, to Dee Why Beach: recreational link along a 'green corridor'.

Fisher Road North and Fisher Road, Dee Why: This route connects Cromer to Dee Why, and will also act as a recreational link for the community. There are footpaths along this section.

Collector Routes

Middleton Road and Inman Road: There are limited footpaths in the area and it appears that the majority of the people who work in this area drive to/from work. The provision of footpaths may encourage pedestrian activities. It may be an aim, with leading from the Council, to create green plans to encourage walking and reduce the number of single person trips.

South Creek Road (Inman Road to Pittwater Road) and Campbell Avenue (from South Creek Road to Bruzzano Place): local and intra-regional connection routes.

Parkes Road (South Creek Road to Plateau Road) and Plateau Road, Collaroy: provides an intra-regional link between Cromer and Collaroy Plateau.

Carawa Road (between Fisher Road North and Alfred Street) and Alfred Street, Narraweena: provides an intra-regional link between Cromer and Narraweena, and beyond to Brookvale.

7.9 Cromer Heights

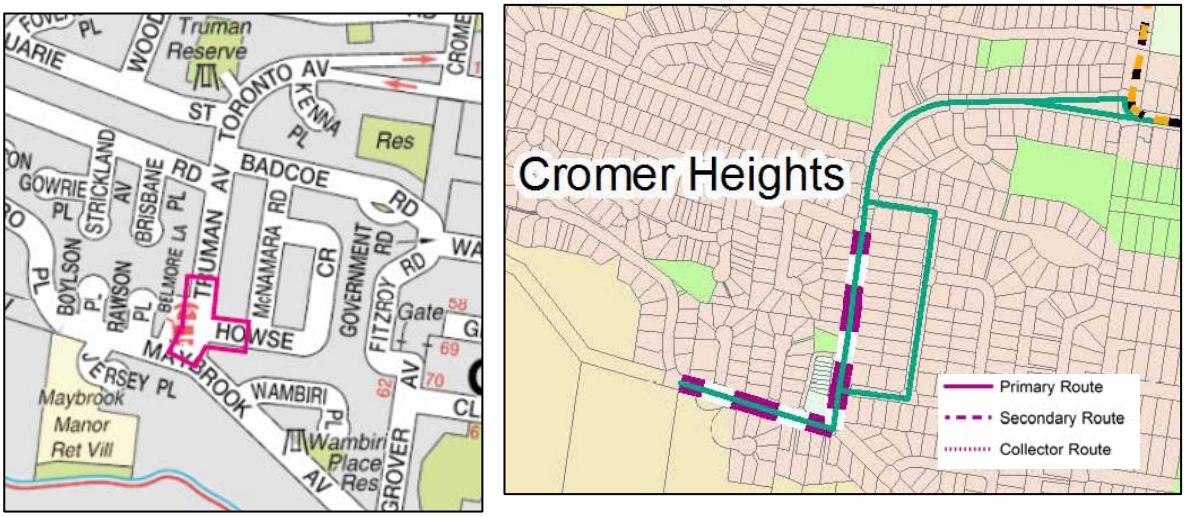


Figure 7.9.1: Cromer Heights focus area

The Cromer Heights focus area consists of a small shopping village, residential area and the Maybrook Manor Retirement Village. It accommodates mainly local pedestrian activities without any major pedestrian generators. There are some sections of the footpath and kerb ramps require upgrading.

Secondary Route

Maybrook Avenue and Truman Avenue (Maybrook Avenue to Northcott Road): provides link between Maybrook Manor Retirement Village and the Cromer Heights shops. There are footpaths on the northern side of Maybrook Avenue, however a wider path may assist with group activities. Also the provision of seating along this route to provide rest points will assist with elderly users.

7.10 Dee Why

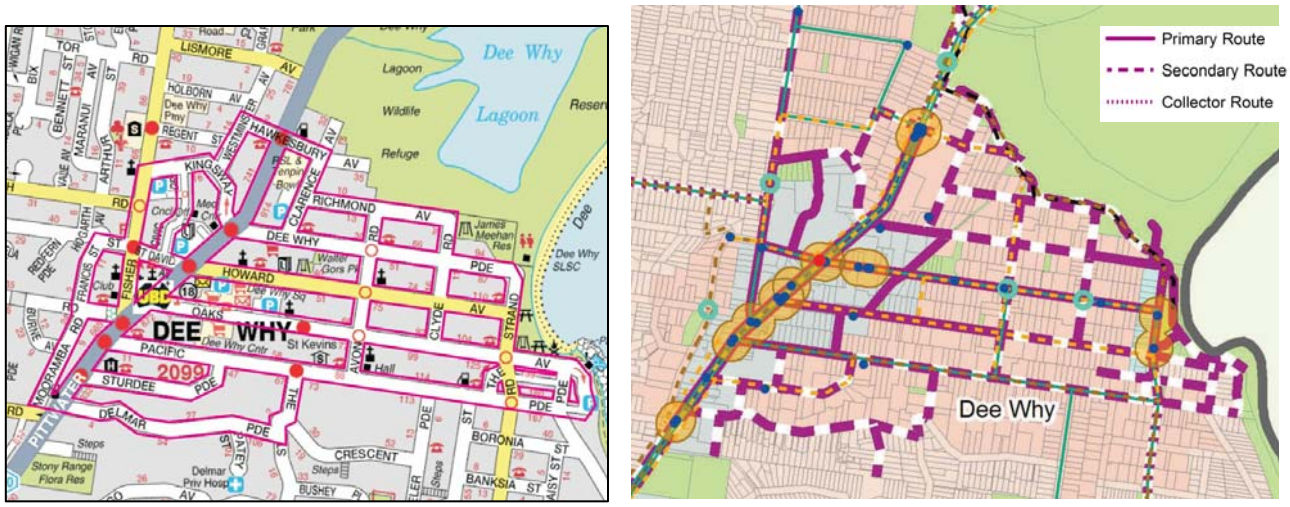


Figure 7.10.1: Dee Why focus area

As discussed in Section 2.2.1, the Brookvale-Dee Why major centre is the regional centre for the Northern Beaches of Sydney. Dee Why town centre and Dee Why Beach are two of the most visited of all pedestrian focus areas identified by Council for this PAMP. The Dee Why focus area includes the Dee Why town centre (straddling Pittwater Road), Council Civic Centre, Dee Why Library, the

Council car park to the west of Pittwater Road, The Strand along the beachfront at Dee Why Beach, and the area in between. There is scope and opportunity to improve connections between Dee Why town centre and Dee Why Beach.

The Dee Why focus area consists of a number of retail and residential land uses between Pittwater Road and The Strand. The section along Pittwater Road is retail with major public transport routes. The Strand has a number of cafes and restaurants and provides recreational opportunities. Between the beach and Pittwater Road, the area is mainly residential, with a school along Oaks Avenue.

Pedestrian safety in the Dee Why focus area, particularly on Pittwater Road, has been identified in this PAMP as a major concern. As discussed in Section 4, over the 5 year period for which pedestrian crash data was analysed (2004-2008 inclusive), the suburb with the most pedestrian crashes occurring within it was Dee Why, with over 20% of all pedestrian crashes in Warringah LGA. Dee Why also contained 3 of the 6 largest pedestrian crash clusters in Warringah LGA, and one pedestrian fatality occurred here. There are also two smaller crash clusters on The Strand. This crash history highlights the need to significantly improve pedestrian safety in Dee Why, particularly along Pittwater Road.

The link between Dee Why centre and Dee Why Beach has the opportunity to be improved. There are a number of trip hazards on this route, and the majority of the kerb ramps do not meet the design criteria. This was discussed during the stakeholder consultations and was identified as an important issue. It was discussed that the kerb ramps should be offset from the roundabout, making it safer for the vision-impaired to cross the road.

There are green corridors in Dee Why (along an old water channel) which have the opportunity of being used as a recreational link between Oaks Avenue and Richmond Avenue (as suggested during community consultation). It was stated that the Dee Why Grand complex should be open 24 hours to allow people to have access between Pacific Parade and Oaks Avenue, however this will depend on the complex's management.

The Draft Warringah LEP (2009) includes special provisions for Dee Why Town Centre (*dLEP2009, Part 6 Additional Local Provisions, Division 1: Dee Why Town Centre Provisions, 6.11 Town Square and pedestrian connections [local]*), relating to a proposed Town Square and pedestrian connection upgrades to attract visitors and enhance the vibrancy of the Town Square and town centre in general.

> *(1) The objective of this clause is to ensure that development within the Dee Why Town Centre will include a Town Square that will be the heart of the community and will contain attractive, useable open spaces that are interlinked by a secure network of pedestrian connections.*
>
> *(2) Development consent must not be granted for development involving the construction of a new building or external alterations to an existing building on Site B unless the consent authority is satisfied that the development will:*
>
> > *(a) be consistent with the establishment and maintenance of a Town Square that addresses Howard Avenue and that will:*
> >
> > > *(i) occupy all of the land shown as Town Square on the Key Sites Map;*
> > >
> > > *(ii) be a flexible, multi use space that will be suitable to accommodate markets, entertainment and community events and serve as a meeting place for the general public;*
> > >
> > > *(iii) be surrounded by colonnades at its perimeter that will provide all weather access to the ground floor retail outlets;*
> > >
> > > *(iv) include landscaping throughout the space that provides an appropriate canopy of indigenous tree species to enhance its amenity;*

(b) include retail uses located at ground level at the perimeter of the Town Square that will provide opportunities for alfresco dining, casual seating and recreation;

(c) ensure that residential accommodation situated above the Town Square will provide casual surveillance of the Town Square and bring life and vitality to the Town Square throughout the day;

(d) incorporate and maintain a north-south Pedestrian Connection that will link the Town Square with Oaks Avenue that will:

(i) occupy all of the land shown as Pedestrian Connection on the Key Sites Map;

(ii) in conjunction with the Town Square, provide a strong physical and visual connection between Howard Avenue and Oaks Avenue ensuring a high level of permeability of the Dee Why Town Centre;

(iii) provide a generous pedestrian and retail precinct;

(iv) be aligned by retail development, with double storey colonnades providing access on a 24 hour, 7 days a week basis;

(v) be designed to ensure all weather access to ground level retail, food and beverage outlets;

(vi) have a clear width of not less than 14 metres to ensure high levels of sunlight access and provide view lines through the development."

The Draft DCP includes discussion of The Strand (*Draft Warringah Development Control Plan 2009, Part F Zones and Sensitive Areas, F1 Local and Neighbourhood Retail Centres*) and opportunities to activate street frontages:

"Ground floor premises along The Strand, Dee Why will be characterised by restaurants, cafes, shops and leisure-related uses that create active building fronts and contribute to the life of the streets. Housing will characterise upper floors.

The interrelationship between the beach and park and development along The Strand is an important aspect of the character of the area. The design of buildings and shopfronts will have a strong complementary relationship to their beach and parkland setting and help create comfortable, interesting and safe pedestrian environments. Outdoor eating areas in particular will be encouraged."

Issues raised during consultation include:

- Fisher Road near Council – pedestrian crossing required;
- Lewis Street (near Francis Street) – pedestrian crossing and traffic calming required;
- Howard Avenue at Pittwater Road, and various locations on Pittwater Road – kerb ramps missing or need fixing;
- Victor Road/ McIntosh Road roundabout – improve crossing conditions;
- continue footpath on McIntosh Road to Kingsway;
- The Strand – footpaths need to be widened to accommodate footpath dining;
- Pedestrian crossing on The Strand near Howard Avenue is very unsafe and may need to be raised.

The audit of Dee Why focus area found that footpath conditions on Dee Why Parade, Howard Avenue, and Oaks Avenue need improvement, with many locations where there is tree damage and trip/fall hazards.

Primary Routes

Pittwater Road (between Sturdee Parade and Hawkesbury Avenue): This is the main focus of the Dee Why town centre area. It is a strip retail and commercial centre with a wide variety of pedestrian attractors and generators. There are footpaths on both sides of the road with the majority of it over 2m wide. There are signalised crossings along this route, although some crossings do not provide adequate kerb ramps, and some kerb ramps are missing altogether.

Civic Drive and Fisher Road (between Pittwater Road and Kingsway): There are footpaths on both sides of these routes, but they are narrower than preferred for a Primary route. These routes provide access around the western side of Pittwater Road, including to the Council offices, library and medical centre, and connections to public transport stops.

Oaks Avenue (between Pittwater Road and Avon Road), Howard Avenue, and Dee Why Parade between (Pittwater Road and Clarence Avenue): On this eastern side of Pittwater Road, these routes provide connections between the retail and transport links on Pittwater Road and Dee Why Beach/ The Strand, and pass through high-density residential generators. These routes currently have footpaths, but the provision of wider footpaths in the area would facilitate additional pedestrian activity and accommodate the proposed growth in the area (as outlined in the draft Warringah LEP and DCP). The roundabouts along Howard Avenue were raised as a safety concern for vision-impaired users, by Vision Australia. It is recommended that Council consult with Vision Australia and other vulnerable user groups (such as the Spastic Centre) to identify the most appropriate crossing locations and crossing design for roundabouts in Warringah.

The Strand: Links servicing Dee Why Beach and the attractors and generators in the area. This route has footpaths on both sides of the route, with paths leading down to the beach. This route also acts as a recreational route that forms links to other areas of the LGA. The Stand is in process of being upgraded to a more pedestrian friendly area, as such, the pedestrian crossing across Howard Avenue and Dee Why Parade need to be made more obvious to motorist to improve safety.

Secondary Routes

Kingsway and Westminster Avenue: These routes connect to the medium-density residential areas and provide links to the major attractors in the area. Continuous footpaths on both sides of Kingsway roads would improve pedestrian accessibility.

Hawkesbury Avenue, Richmond Avenue, Avon Road and Clyde Road: There are many high intensity generators along these routes. There are footpaths on both sides of the road along these routes, but pedestrian volumes and access needs on these routes require wider footpaths.

Oaks Avenue (between Avon Road and Dee Why Beach), Pacific Parade (between Sturdee Parade and Dee Why Beach), Monash Parade: completes the link between the Primary routes from Pittwater Road to Dee Why Beach/ The Strand.

Sturdee Parade, Delmar Parade: provide access through the industrial/ commercial area.

Fisher Road (between Kingsway and South Creek Road, Cromer): provides an intra-regional link between Dee Why and Cromer.

Pittwater Road (between Sturdee Avenue and Warringah Road): provides a link between Dee Why and its twin town centre, Brookvale. Pittwater Road between these two parts of the Major Centre has been identified as having the potential to be an ‘enterprise corridor’. Pedestrian activity along this route could increase in importance when such a corridor succeeds.

Collector Routes

Most of the streets leading into Dee Why town centre could be considered Collector routes. The majority of these routes have footpath on both sides of the road and provide links to the Secondary

and Primary routes in the areas. The provision of improved pedestrian facilities in this area would also provide better access between the employment areas and public transport.

Griffin Road: provides an intra-regional link between Dee Why and Freshwater, passing through North Curl Curl and Curl Curl. This route currently has footpaths along the majority of the route and provides an excellent recreational route. It may benefit from having seating placed at intervals along this route to provide breaks and resting locations. The seating can also add value to the area along this route providing coastal views.

Pittwater Road (between Hawkesbury Avenue and Anzac Avenue, Collaroy): intra-regional recreational link between Dee Why and Collaroy, along Dee Why wildlife refuge, Dee Why Lagoon, and Griffith Park. It is recommended that the intersection of Pittwater Road/ Lismore Avenue be signalised with pedestrian and bicycle phases to provide a safe crossing point for the off-road regional multi-use trail link to Dee Why beach.

McIntosh Road (between Fisher Road and Alfred Street, Narraweena): intra-regional link between Dee Why town centre and neighbouring Narraweena, which could also be part of a recreational route between Narraweena and Dee Why Beach.

Mooramba Road, Francis Street and Redman Road: provides pedestrian access roughly parallel to Pittwater Road. Installation of a pedestrian refuge island on Francis Street at Redman Road would improve pedestrian safety there.

7.11 Forestville

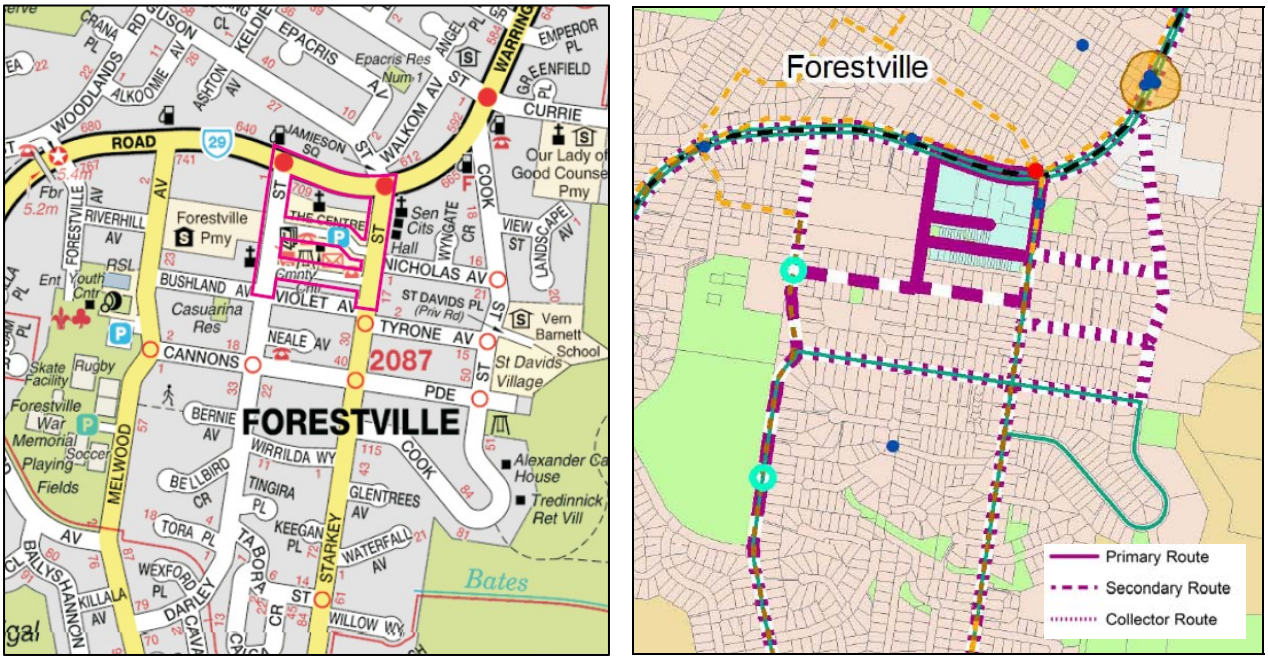


Figure 7.11.1: Forestville focus area

The Forestville focus area includes:

- Forestville Shopping Village, including a wide range of retail and commercial premises focussed around a pedestrian mall;
- A library, Community centre, Senior Citizens hall, and playground;
- Forestville Primary School;
- Churches.

Beyond the focus area, are more pedestrian attractors and generators:

- RSL club and Forestville War Memorial Playing Fields (with a Youth Centre, lawn bowls lawns, rugby field, skate park, soccer fields) along Melwood Avenue;
- Retirement villages/ nursing homes along Cook Street;
- Two more schools (Our Lady of Good Counsel Primary School, and Vern Barnett School);
- Forestville Park (with playing fields);
- Garigal National Park (accessed via walking tracks from Currie Road and Cook Street); and
- Low-density residential areas.

Pedestrian activities are largely local, but the playing fields and National Park are regional attractors.

The *Draft Warringah Development Control Plan* (2009) *Part F Zones and Sensitive Areas, F1 Local and Neighbourhood Retail Centres* identifies the pedestrian mall in Forestville as the focus of retail activity and future development as a "*lively neighbourhood centre, including a mix of retail, commercial, housing and community uses*." In particular, it directs that "*Future retail development will address the Mall and its entrances and pedestrian access to retail facilities will be obtained from these places*." This provision aims to promote pedestrian activity and amenity, improve pedestrian access between the mall and bus stop on Warringah Road, and reduce conflicts with vehicles by limiting vehicular access near the mall.

In the pedestrian crash data for the five year period analysed (2004 – 2008 inclusive), there was a fatal pedestrian crash in Forestville at the signalised intersection of Warringah Road and Ferguson Street/ Starkey Street. Limited sight distance may have been an issue as the crash occurred on a bend in the road. However, it was also night time and in wet weather, so these could also have been contributing factors. There is also a pedestrian crash cluster approximately 150m northeast of the focus area, at the signalised intersection of Warringah Road and Brown Street/ Currie Road.

Issues raised during consultation include:

- Need to provide continuous footpaths along Melwood Avenue – current discontinuities are unsafe, particularly for parents with prams;
- More seats should be available along Cook St and Tyrone St
- Footpaths on Darley St end near corner of Tabora St to Melwood Ave, poor lighting
- Forestville car park needs to be made safer;
- Improve footpath between Forestville to Forestway (eastern side);
- Provide footpaths along Cannon Parade
- Connect Forestville to Killarney Heights with Melwood Avenue
- Button for signalised crossing is tucked behind power pole at the intersection of Forestville Avenue and Warringah Road
- Kerb ramp on the northern side of Warringah Road and Woodlands Road is too steep and the lip too high.

Generally the footpaths in the area are in good condition, but some are discontinuous so access is limited for many user groups with specific needs. It was identified during the audit that many of the areas that required upgrading were along Warringah Road.

Primary Routes

Darley Street and Starkey Street (between Warringah Road and Violet Avenue) and Warringah Road (between Darley Street and Starkey Street): These routes surround the Forestville Shopping Village and provide links between the shopping village, primary school and residential area with links to the bus stops on Warringah Road, as highlighted in the Draft Warringah DCP. These routes have footpaths on both sides of the road. However, the footpaths are narrower than preferred for this level of priority.

Pedestrian mall through the shopping villages between Darley Street and Starkey Street: This route is paved, and creates an environment that is valued by the local community. There is a connection path between this mall and Warringah Road that is also considered a Primary route.

Secondary Route

Melwood Avenue (between Warringah Road and Lanford Avenue): This route connects the Forestville shopping village, the RSL, Forestville Primary School, and the recreational facilities of the Forestville War Memorial Playing Fields. There are currently footpaths on both sides of the road along this route. It is recommended that Council investigate installing a pedestrian crossing facility (possibly a pedestrian refuge island) on Melwood Avenue near the Bushland Avenue intersection to provide a safe crossing point for children using the playing fields. Another crossing point on Melwood Avenue at the pedestrian connection from Bernie Avenue could also be considered.

Collector Routes

Nicholas Avenue: links Vern Barnett School and St David Village to the shopping village. There is a footpath on one side of the road, however there is evidence that people are walking on both sides.

Starkey Street (between Violet Avenue and Greystones Road) and Melwood Avenue (between Lanford Avenue and Greystones Road): provide intra-regional links between Forestville and neighbouring Killarney Heights. There are footpaths on both sides of the road along Starkey Street and some paved sections along Melwood Avenue. The Melwood Avenue route was raised during pedestrian consultation as a preferred route due to the gradient of the path. This link would benefit from having a complete paved route. This link also forms part of a recreational route.

Warringah Road (between Starkey Street and Forest Way, Frenchs Forest): provides an intra-regional link between Forestville and Forest Way. There are footpaths on both sides of the route and signalised crossing opportunities.

7.12 Forestway

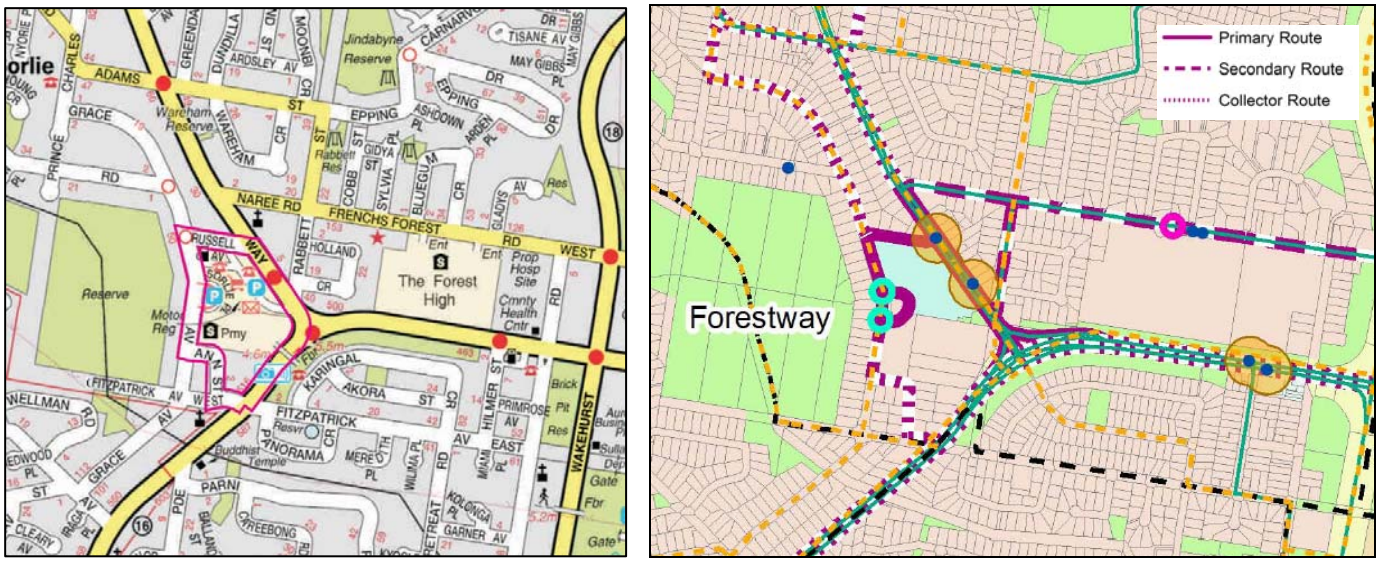


Figure 7.12.1: Forestway focus area

The Forestway focus area consists of the Forestway Shopping Centre, Frenchs Forest Primary School, medical facilities and residential areas.

The NSW Government's *Metropolitan Strategy North East Subregional Plan* has identified future development of a new Northern Beaches Hospital in Frenchs Forest, in the vicinity of this focus area. Warringah Council will commence a master planning process for the proposed hospital in the near future.

It is recommended that a fine-grained pedestrian network be included as part of the Northern Beaches Hospital master plan to ensure that the Hospital and associated facilities supports pedestrian access, as well as facilitating physical activity for its employees, patients and visitors. It is also imperative that direct and pedestrian friendly routes are provided to link the hospital to the public transport system and neighbouring attractors. When planning for the hospital, the design should encompass pedestrian facilities to cater for people with disabilities, the aged and people who required additional assistance, as well as the general public. These facilities are also to consider the increase in vehicle movements generated by the site

The pedestrian audit identified that there are good footpaths on Forest Way, Warringah Road, and Grace Road. There is evidence of informal paths along Ann Street and Patrick Avenue West, suggesting a demand for formal footpaths. Kerb ramps in the area are generally poor or missing altogether (at the intersections of Russell Avenue and Grace Avenue, Grace Avenue and Sorlie Place, Grace Avenue and Ann Street, Fitzpatrick Avenue West and Warringah Rd, and along Russell Avenue and Forest Way), and pavement condition on Russell Avenue is poor.

Information gathered during consultation suggests that the crossing facilities in Russell Street are potentially hazardous due to the speed of traffic leaving Forest Way. There was also some concern with the vehicles leaving the car park onto Russell Street within close proximity to the existing pedestrian refuge island.

Primary Route

Russell Avenue, and Forest Way (between Naree Road and Warringah Road): There are footpaths on both sides of the roads, however they are narrower then preferred for this hierarchy. The section of Forest Way categorised as Primary has public transport links on both sides.

Grace Avenue (between Sorlie Road and Ann Street): This route has footpaths on both sides, but requires a safe pedestrian crossing. The best location for this crossing would be on the northern side of the ground level car park entry.

Secondary Route

Naree Road and Frenchs Forest Road West (connecting through to the Primary route section of Frenchs Forest Road East): This route currently has footpaths on both sides except for the northern side on Naree Road. It provides a safe route between the Forestway Shopping centre and the Skyline shops. It also passes The Forest High. Concern has been raised on the pedestrian crossing in front of the school with feedback on the vehicles not giving way to pedestrians. It is recommended that at the minimum additional signs need to be installed at this crossing to give motorists advanced warning of the crossing. This location may also benefit from flashing lights during school zone operation hours.

Frenchs Forest Road East (between Wakehurst Parkway and Forest Way): Provides access along Skyline Shops, business parks, and also served by buses.

Collector Route

Warringah Road: Links Forestway Shopping Centre to Forestville Shopping Village and to Allambie Grove. There is a footpath on northern side of the road that is vey close to the side of the road, which is a safety concern. There is a footpath on the southern side of the road that is offset from the road, making it a more attractive route and recreational route.

7.13 Frenchs Forest

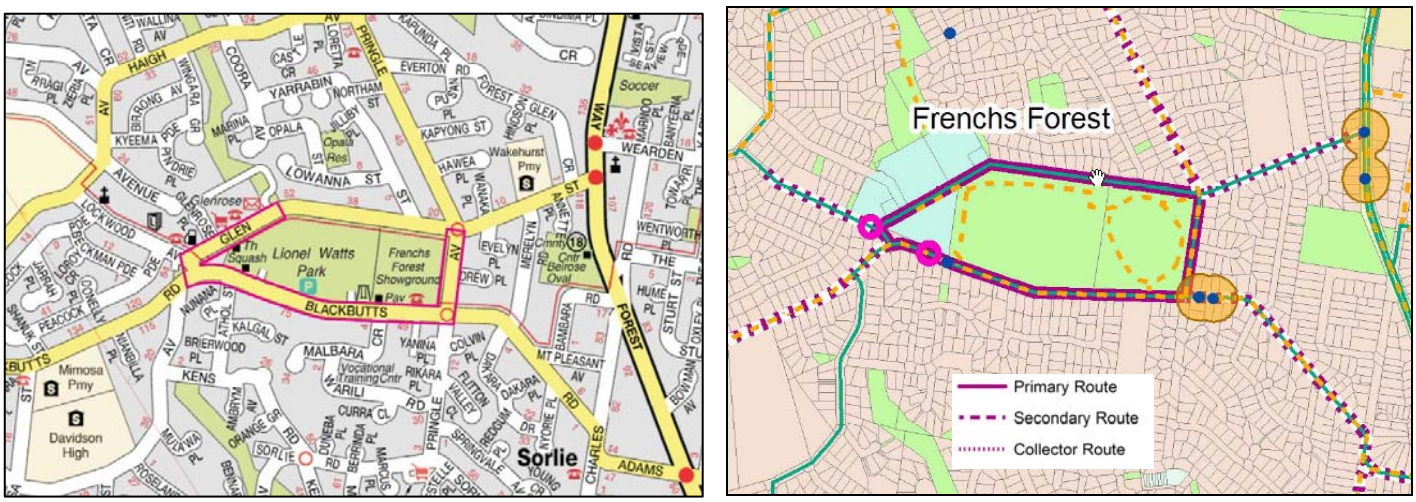


Figure 7.13.1: Frenchs Forest focus area

The Frenchs Forest focus area includes Glenrose Shops (on Glen Street), a local library, Glen Street Theatre, major recreational facilities (Lionel Watts Park, Frenchs Forest Showgrounds, squash courts, and playground) and the surrounding residential areas. The recreational facilities attract visitors from areas outside the LGA. Lionel Watts Park and the Frenchs Forest Showgrounds are also used for local events such as shows and fetes.

Beyond the focus area to the southwest on Blackbutts Road, is Mimosa Primary School and Davidson High School; to the west, is Frenchs Forest Cemetery; and to the east is Wakehurst Primary School. There are therefore some significant pedestrian generators just beyond the focus area. The majority of the surrounding area, however, is low-density residential.

Generally the area has good pedestrian provision, but some sections of the footpath and kerb ramps require upgrading. The key issue identified in the route audit was many tree damage locations on the

footpaths around Lionel Watts Park and Frenchs Forest Showground (on Blackbutts Road in particular).

Improving the landscaping and public seating around the Glen Street Theatre was suggested in the community consultation.

Primary Route

Glen Street, Blackbutts Road and Pringle Avenue (sections around Lionel Watts Park and Frenchs Forest Showground): There are discontinuous footpaths around the Park. This route is required to serve the activities held at the park and to improve recreational access for the community. It will also provide access to the Glenrose Shops and access to bus stops. It is recommended that the existing pedestrian refuge on Blackbutts Road near Athol Street be widened to 2.5m.

Secondary Route

Lockwood Avenue: provides a link between the Glenrose town centre and the library on Lockwood Avenue. It is recommended that the pedestrian crossing be upgraded to a wombat crossing (raised pedestrian crossing).

Collector Routes

Blackbutts Road (between Pringle Avenue and Prince Charles Road), Prince Charles Road (between Blackbutts Road and Grace Avenue), and Grace Avenue (between Prince Charles Road and Russell Avenue): This route provides an intra-regional link between Glenrose Shops/ Lionel Watts Park to the Forestway Shopping Centre. It also acts as a recreational route.

Blackbutts Road (between Mimosa Street and Lockwood/Pound Avenue): Provides local link between Glenrose shops and Mimosa Primary School and Davidson High School.

Pringle Avenue (between Glen Street and Coachline Place, Belrose): Provides an intra-regional link to Belrose shops.

7.14 Freshwater

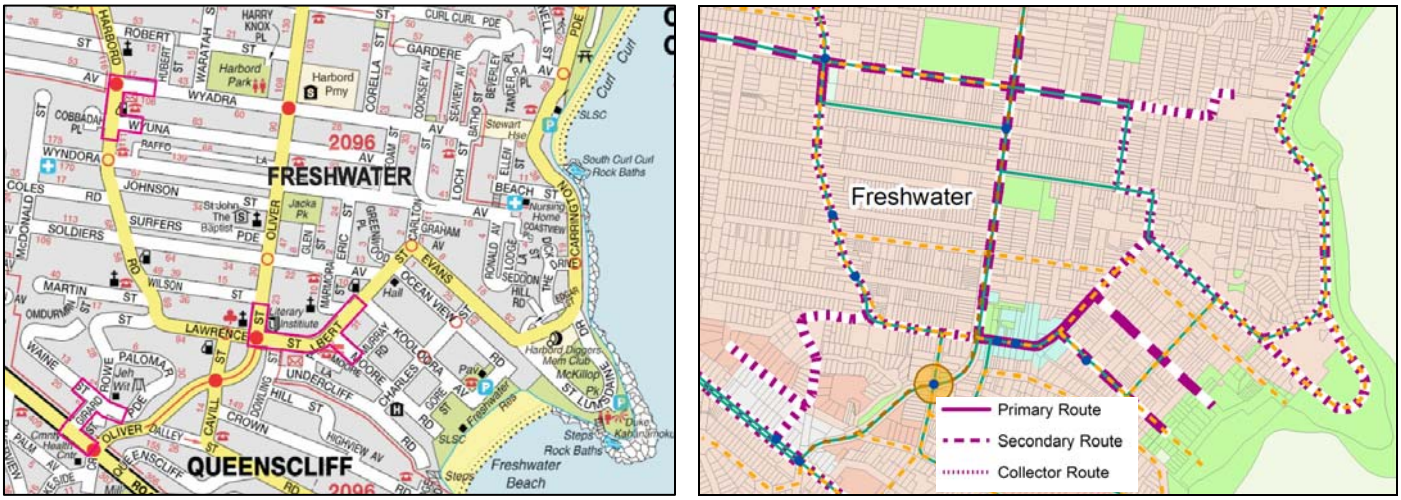


Figure 7.14.1: Freshwater focus area

The Freshwater local centre is focussed along Lawrence Street/ Albert Street and includes cafés, restaurants, variety of retail stores, commercial offices, and a small shopping centre (Freshwater Village) in the middle of the centre. The focus area has been recently upgraded, and provides the community with an exceptional pedestrian environment, with wide paved footpaths, tactile indicators

(to assist people with a visual impairment), raised pedestrian crossings, and low traffic speeds (reduced speed limit of 40km/h).

Approximately 1km northwest of the local centre is a neighbourhood centre on Harbord Road between Wyadra Avenue and Wyuna Avenue. This neighbourhood centre has a few small shops and cafés. East of this centre is Harbord Primary School, and Wyadra Avenue provides a direct link between the two areas, passing Harbord Park. Although the neighbourhood centre is small, it serves the local community, as well as people travelling along Harbord Road.

Another pedestrian activity area in Freshwater is along Pittwater Road, where there are some light industrial areas and large retail speciality shops.

Freshwater generally has low-density housing with some medium-density housing close to Pittwater Road, continuing the neighbouring medium-density dwellings from Queenscliff. There are bus routes along the busier roads (Harbord Road and Oliver Street) that connect to the commercial cores of Brookvale, Dee Why and areas outside the LGA.

The intra-regional pedestrian connections throughout Freshwater are important, not only for the local community to travel within the suburb, but also to connect to neighbouring centres like Brookvale, Curl Curl, North Manly and Manly Vale. There is a pedestrian link along Wyadra Avenue to Brookvale that is popular with all users. The need to provide footpaths on both sides of Wyadra Avenue was a very common comment in the Questionnaire survey. It is recommended that this be provided.

Harbord Primary School is located centrally in Freshwater. The connection between school and the centres is important to encourage walking by parents and children.

Being a coastal suburb, the area attracts people to the beaches. There are also recreational activities at these beaches and an attractive walking link (The Bicentennial Walking Trail along the Carrington Parade and around St Lumsdaine Drive).

There were no significant pedestrian crash clusters in Freshwater in the five year period reviewed.

There were no major issues noted in the footpath audits of the Freshwater local centre, nor the Harbord Road or Pittwater Road neighbourhood centres. In fact, due to its recent upgrade, the Freshwater local centre should be used as a good example of pedestrian provision in Warringah LGA.

Figure 7.14.2: Good wide footpath and marked raised crossing gives pedestrians a high level of priority.

Figure 7.14.3: Good raised marked crossing, however footpath obstructed by street furniture (by bin and advertising sign on ground, right side of picture).

Primary Routes

Lawrence Street (between Oliver Street and Marmora Street): This area is designed for high pedestrian activity, with wide paved footpaths. There are tactile markings at all crossings to assist the visually impaired. Council needs to ensure that footpath dining, street furniture, and temporary signage does not reduce the clear width of the footpath to less than 2m (preferably 2.4m or more in high pedestrian activity areas).

Harbord Road (between Wyadra Avenue and Wyuna Avenue): Through Harbord Road neighbourhood centre. There are currently footpaths on both sides, but widening of footpaths in this section, especially on the eastern side of the road fronting the shops would improve pedestrian amenity as some cafés here have footpath dining.

Secondary Routes

Wyadra Avenue (between Harbord Road and Corella Street): This route is used by school children from Harbord Primary School between the school and the shops and passes Harbord Park.

Oliver Street (between Wyadra Avenue and Robert Street): It was raised from a parent of the school that more emphasis has to be put on children drop-off and pickup. It is recommended at the school and the Council collectively resolve this issue as it appears to revolve around parking locations and times

Collector Routes

Harbord Road (outside the areas identified as Primary routes): Links to Brookvale, and provides a recreational link. There are footpaths along both sides of this route.

Girard Street, Rowe Street, and Lawrence Street (up to Oliver Street): Route passes through high-density housing areas. There are footpaths on one side of the road along this route for some of the way.

Cavill Street, Dalley Street (between Cavill St and Queenscliff Rd), Queenscliff Road, and Greycliffe Street (to North Steyne): This is a popular route to Manly Beach, ferry and town centre, due to the parking constraints within Manly. Provision of additional crossing facilities and traffic speed control on this route may be required, to provide safer access to/from this route.

Pittwater Road (between Aitken Avenue and Sterland Avenue): Provides an intra-regional link between Freshwater and Brookvale. This route requires footpaths on side streets to connect residential areas to public transport on Pittwater Road. This will provide an opportunity to improve links to public transport.

Albert Street, Evans Street, Carrington Parade, Lumsdaine Drive: This route provides a local and intra-regional recreational link to the headland north of Freshwater Beach, around to Curl Curl Beach and Curl Curl Lagoon, and onward to Dee Why.

Figure 7.14.4: Footpath along Lumsdaine Drive

7.15 Killarney Heights

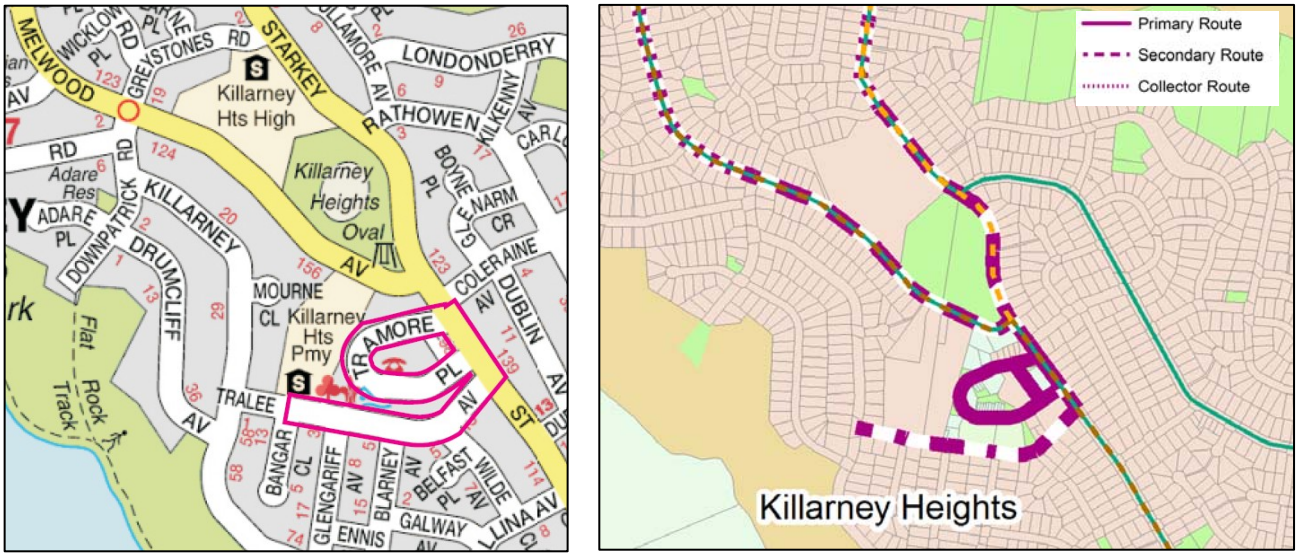


Figure 7.15.1: Killarney Heights focus area

The Killarney Heights focus area includes:

- Killarney shops (on Tramore Place and on Starkey Road, between both ends of Tramore Place) and indoor sports facilities (Southside of Tramore Place);
- Killarney Heights Primary School;
- Killarney Heights High School;
- Killarney Heights Oval and playground; and
- Low-density residential areas.

Pedestrian activity in this area is largely local, except to/from the High School. Interestingly, there is no footpath on Tramore Place on the shops-side. This lack of basic pedestrian access to the shops is compounded by safety issues for pedestrians due to potential conflicts with parking/ un-parking cars. The footpath audit identified many sections of footpath in the focus area requiring maintenance and improvement and some kerb ramps require upgrading (at the intersections of Starkey Street and Coleraine Avenue, Melwood Avenue and Starkey Street, Tralee Avenue and Starkey Street and within Tramore Place).

There were no pedestrian crashes occurring in or near the focus area in the 5-year period between 2004-2008 inclusive.

Issues raised in consultations include:

- Conflicts between parked cars and pedestrians.
- No marked crossing is provided to cross Tramore Place at the entrance to the Killarney Heights Public School, and no school crossing supervisor is in place at this crossing. A few ‘near miss” incidents were observed by parents.
- No footpath is provided for Tramore Place (shop side);

- There are opportunities to link Killarney Heights (which is a very small neighbourhood centre), with Forestville (which is a larger centre), via the playing fields on Melwood Avenue, and via Starkey Street.

Secondary Routes

Starkey Street (between Greystones Road and Tralee Avenue): This route has footpaths on both sides and connects to the Collector route from Forestville. Some of this route is a shared path (the eastern near Killarney Oval). This route is used by school children from both Killarney Heights Primary and High School and residents access the location shops. There are footpaths on both sides of the route, but it would benefit from wider paths to encourage physical activity.

Melwood Avenue (from Greystones Road to Starkey Street): Melwood Avenue provides an intra-regional and recreational link between Killarney Heights and Forestville. The remainder of this route is Collector. Footpaths on both sides of Melwood Avenue are not continuous. The provision of footpaths on both sides, especially in the vicinity of the schools and Killarney Oval will assist with pedestrian movements. This route is an important link between Killarney Heights High School and Melwood Oval which is used for school sports.

Tramore Place: This route is used by the local community, but the location of parking and limited pedestrian links makes it very 'pedestrian unfriendly'. Improving the pedestrian access within this focus area would add value to the area and improve pedestrian safety.

Collector Route

Melwood Avenue (from Lanford Avenue to Greystones Road): The Melwood Avenue route is discussed above, and this section could be made a Secondary route if funding allows.

Tralee Avenue: This route passes recreational facilities and the primary school. There are footpaths on the northern side of the route; however there is no provision on the southern side. There should be footpaths on both sides of this route especially near the school. Currently there is a pedestrian crossing between Bangar Close and Glengariff Avenue that does not connect to a footpath. The provision of continuous and accessible footpaths in this area will greatly assist parents with the pickup and drop-off of children, and improve access to the retail and recreational facilities.

7.16 Manly Vale

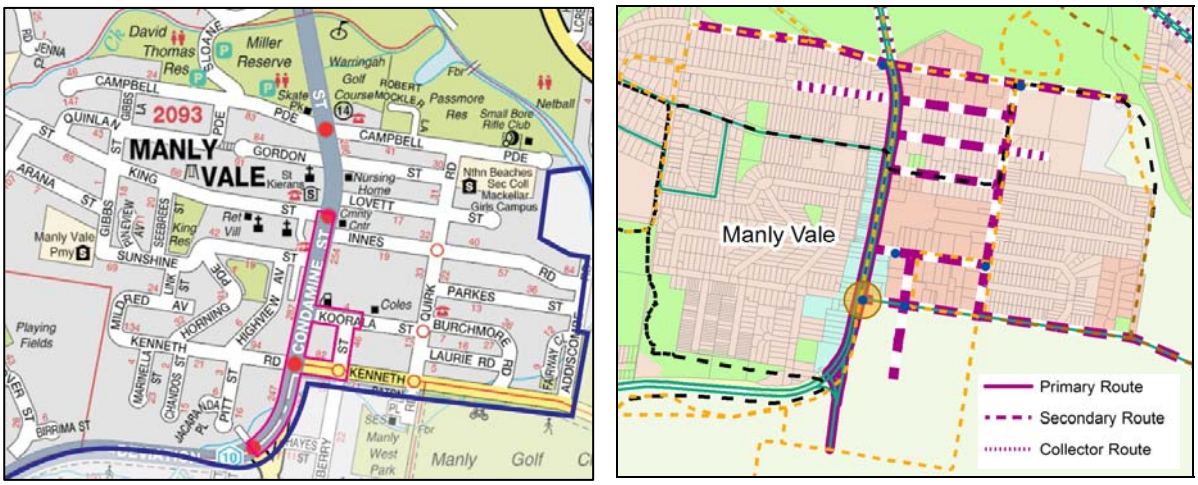


Figure 7.16.1: Manly Vale focus area

The Manly Vale pedestrian activity focus area is along Condamine Street, roughly between King Street and Burnt Bridge Creek Deviation (approximately 800m in length). This area is considered the local centre for the surrounding residential area. The centre contains a supermarket, a range of shops

and commercial premises along Condamine Street, a community centre, and is within a short walking distance to Manly Vale nursing home (on Gordon Street), and a retirement village (on King Street), as well as three churches, a school (St Kierans), and Manly Golf Club.

Within approximately 300m of the centre, there is the Northern Beaches Secondary College Mackellar Girls Campus and Manly Vale Primary school.

The area to the east of the local centre consists of medium-density dwellings, while the western side is low density. Walking is the most practicable mode of transport from one end of the centre to the other due to limited car parking capacity and traffic volumes along Condamine Street.

Outside the local centre, St Kierans School and Northern Beaches Secondary College Mackellar Girls Campus provide education to the local community and attract students from outside the suburb and even beyond the LGA.

To the north of the local centre, David Thomas Reserve, Miller Reserve, Passmore Reserve, and other playing fields (including a bowling club and small bore rifle club) provide the local community with locations to undertake recreational activities. Campbell Parade provides a link along the southern side of these reserves.

As with many of the other areas, the location of the centre on a major road produces conditions for a major public transport link. As such, with the combination of the medium density dwellings, there are high pedestrian activities, combined with the retail aspect of the area. It is important that pedestrians are provided with a safe environment to travel around the area. As expected Condamine Street is identified as a Primary route, with other routes connecting to this route.

Generally footpaths and kerb ramps in the area were found to be satisfactory.

The *Draft Warringah DCP* (2009) identifies special provisions for Condamine Street (under *Part F Zones and Sensitive Areas: F1 Local and Neighbourhood Retail Centres*): “Condamine Street will be enhanced by ensuring the design of buildings and use of land maintains activity at street level and creates a cohesive and attractive streetscape. Vehicle access will be provided from streets other than Condamine Street.” These provisions would support the objectives of this PAMP.

Primary Routes

Condamine Street (between Kenneth Road and Campbell Parade): There are a number of retail businesses along this route with the northern side of Condamine Street consisting of high density and industrial premises. At the northern end of this route there is a school, nursing home and community centre. This route is on a majority public transport corridor. There are footpaths on both sides of this route and a number of crossing facilities; however some of these crossing facilities are not designed to standard and would require to corrected to improve access for the mobility impaired (especially the intersection of Condamine Street and Kenneth Road where an accident cluster is evident).

Kenneth Road (between Condamine Street and Addiscombe Road): Provides a connection between Warringah and Manly LGAs, and provides access to recreational facilities. There are some footpaths along this route, however would benefit greatly from with footpaths on both sides, with possible opportunities to make them shared to connect to the existing shared path in the Manly LGA.

Secondary Routes

Campbell Parade: This route connects the northern end of Manly Vale and links a number of recreational facilities and educational facilities together. There are footpaths on both sides of the route for the majority of the route, however it would benefit from both sides to assist with activities on the neighbouring ovals.

Gordon Street, Lovett Street, Innes Road, Koorala Road (between Condamine Street and Quirk Road), Kenneth Road (between Condamine Street and Addiscombe Road) and Quirk Road (between

Campbell Parade and Kenneth Road): The majority of these routes have footpaths have one side of the road, but provision of footpaths on both sides of the road would facilitate public transport use.

Collector Route

Condamine Street (between Campbell Parade and Old Pittwater Road, Brookvale): Intra-regional link between Manly Vale and Brookvale. There are footpaths on the western side of this route that cater for pedestrians, but provision of footpaths on both sides of the route will facilitate public transport access.

7.17 Narrabeen

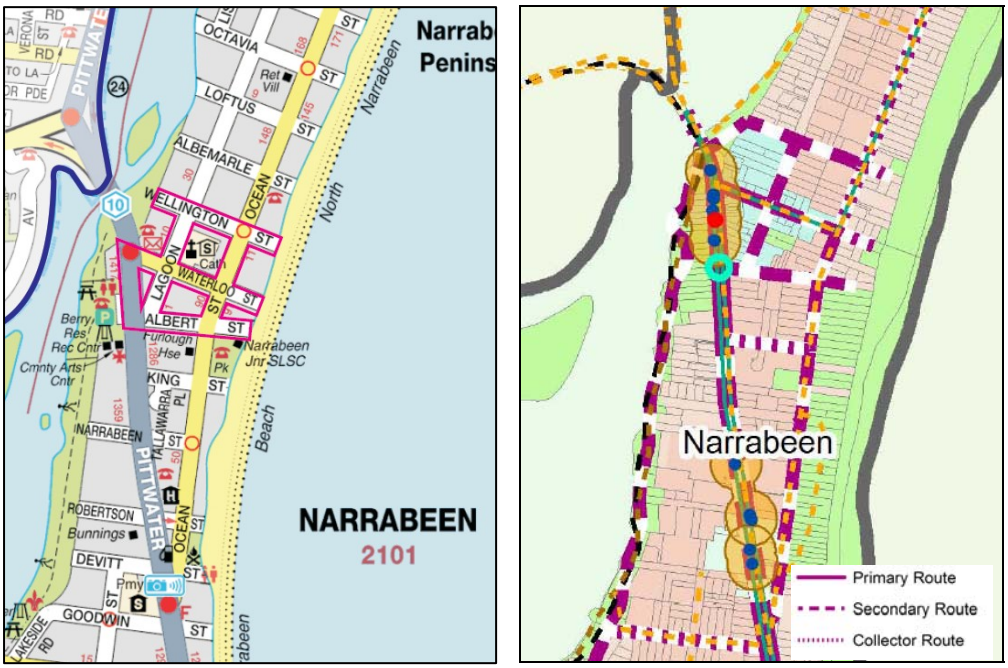


Figure 7.17.1: Narrabeen focus area

The Narrabeen focus area is the northernmost beachfront local centre of the Warringah LGA. Situated along Pittwater Road, the focus area is between the strong recreational attractors of Narrabeen Lakes and Narrabeen Beach. The local centre includes the Narrabeen shops along parts of Wellington, Lagoon, Waterloo, and Albert Streets, as well as a large supermarket, cafés, and restaurants. St Joseph's Primary School is located on the eastern edge of the local centre.

On the western side of the local centre, Narrabeen Lakes provide water recreational activities, as well as a shared path along the lake front. To the south of the local centre, a recreational park along Ocean Street provides an area for locals and visitors to walk along the coast and even the beach.

Pittwater Road is a popular transit route for both public and private vehicles, and there is a major bus stop near the intersection of Pittwater Road and Waterloo Street. This location attracts the local community due to the frequency and choice of the services from this location. Narrabeen is a high- to medium-density residential area.

Due to the high pedestrian activity generated by and attracted to this area, it is important the pedestrian amenities cater for the pedestrian demand. Around the local centre, Primary routes have been identified and some of Ocean Street the fronts the beach identified as Secondary routes. Some of the routes in this area also share a recreational objective, with Ocean Road forming part of the Bicentennial Walking Trail.

Pedestrian safety is a critical issue in this area due to the pedestrian volume combined with high vehicle volume: there were 3 pedestrian fatalities on Pittwater Road in the vicinity of this focus area in

the five years from 2004-2008 inclusive. There is only one signalised crossing across Pittwater Road in this area. It is recommended that an additional crossing location be installed and fencing be installed on the median strip. The footpaths in the area are generally in good condition, however there are some missing links to the beach and kerb ramps are required to be improved.

Although outside the focus area, a number of community responses revolved around issues with the walking trail on Narrabeen Lakes. While there is lighting along the track, some people find the lighting is located at their eye-level, and they find it difficult to see beyond the glare. A review of the lighting is required to determine whether the lights can be modified. Neighbouring residents and local and aquatic wildlife will need to be taken into account.

Primary Route

Pittwater Road (from the end of Narrabeen Peninsula to Albert Street): This route has footpaths on both sides of the road that are wide enough for this priority. This area has high pedestrian activity and is a popular public transport corridor, but has pedestrian crash clusters along the entire route. To improve safety at this location, it is advised that an additional crossing location be situated at (or near) the intersection of Pittwater Road and Albert Street. It is also recommended that pedestrian fencing be installed along the median strip along Pittwater Road to discourage pedestrians crossing away from the correct locations.

Waterloo Street (between Pittwater Road and Lagoon Street): This route has a number of retail businesses along this route and the current width caters for the footpath category.

Secondary Route

Albert Street: connects Pittwater Road to the beach, with some retail and high density residential areas along the path. This route also ties into the area where crash clusters are evident, so with the provision of a crossing facility as mentioned previously, this route will attract pedestrian activities.

The remainder of Waterloo Street, Lagoon Street (until Wellington Street) and Wellington Street (connecting to the Narrabeen Lakes walking trail): These routes provide links within the high density and commercial area, as well as connecting with the Narrabeen Lakes trail and Narrabeen beach. There are footpaths along the majority of these routes, however the widening of the footpaths will assist with accommodating growth in pedestrian activity. Crossing locations on these routes are in need of repair as they do no meet standard requirements (especially at roundabouts).

Ocean Street (between Albert Street and Pittwater Road): provides a recreational link off Pittwater Road.

Collector Route

Pittwater Road (south of Albert to Collaroy): This route connects the two areas, and a number of businesses along this route. There are footpaths on both sides of the route. There is a pedestrian cluster along this route; however the installation of pedestrian fencing is recent and has improved the safety by directing pedestrian movements to safe crossing locations.

Ocean Street (Albert Street to the end of Narrabeen Peninsula): There are footpaths on both sides of Ocean Street. This route is also a recreational route providing a coastal route alongside the beachfront.

Goodwin Street (between the Narrabeen Lakes path and Pittwater Road): This is an important pedestrian link to the primary school, Narrabeen beach and Pittwater Road shops, and is also included on the bike plan as an off-road shared path.

7.18 Narraweena

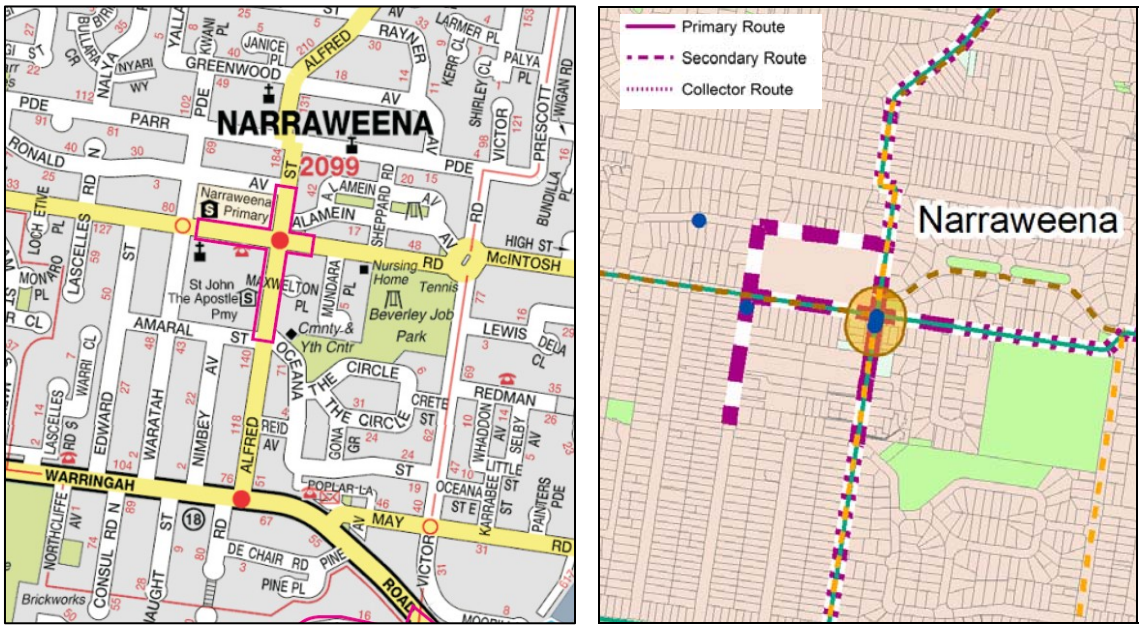


Figure 7.18.1: Narraweena focus area

The Narraweena focus area consists of the Narraweena Shops, Narraweena Primary and St John the Apostle Primary Schools and surrounding residential. It consists of mainly local pedestrian activities without any major pedestrian generators. There are sections of the footpath in this area that require upgrade, mainly as a result of damage from tree roots. Footpaths in front of the shop frontages would be improved with the installation of wheel stops.

The neighbourhood centre of Narraweena is along Alfred Street, consisting of a grocer, takeaway outlets and small shops. The area surrounding the neighbourhood centre is mainly low density housing, with a Community and Youth Centre and Beverly Job Park to the south east where recreational playing fields and tennis courts are provided for the local community.

There is a variety of pedestrian types in this area, from children and young families to the aging population. It is important that pedestrian access is provided to promote walking and link with the public transport routes.

The area surrounding the town centre has been identified as Secondary routes. It is important to note that although the surrounding residential areas have not been assigned a priority level, they still have the role of providing local access to these priority routes.

There were 2 pedestrian crashes at the signalised intersection of Alfred Street and McIntosh Road in the five year period analysed. There were no issues raised in consultations regarding Narraweena. The route audit did not identify any significant issues with footpaths in the focus area except for a few kerb ramps.

Secondary Routes

Alfred Street (between Amaral Street and Parr Parade): connects educational facilities and the Narraweena Shops together. There are footpaths on both sides of the road along this route; however some sections of the path are narrower than preferred. There is also an issue with parking overhanging over the footpath along this route (in front of the shops). A clear separation between the two should be established, with the installation of wheel stops assisting with the prevention of overhang and maintaining a clear path for pedestrians.

McIntosh Road (between Waratah Parade and Alfred Street): There are footpaths on both sides, but a wider footpath would improve access to/from the school.

Collector Routes

Alfred Street (between Parr Parade and Carawa Road, Cromer): links to the Cromer focus area.

Alfred Street (between Amaral Street and Federal Parade, Brookvale): links to the Brookvale town centre.

McIntosh Road (between Alfred Street and Fisher Road, Dee Why): links to Dee Why town centre.

Waratah Parade (between Amaral Street and Ronald Avenue) and Ronald Avenue (between Waratah Parade and Alfred Street): connects the schools in the area together and provide links to the local park. There are footpaths in these locations; however they are mostly limited to one side of the road.

7.19 North Balgowlah

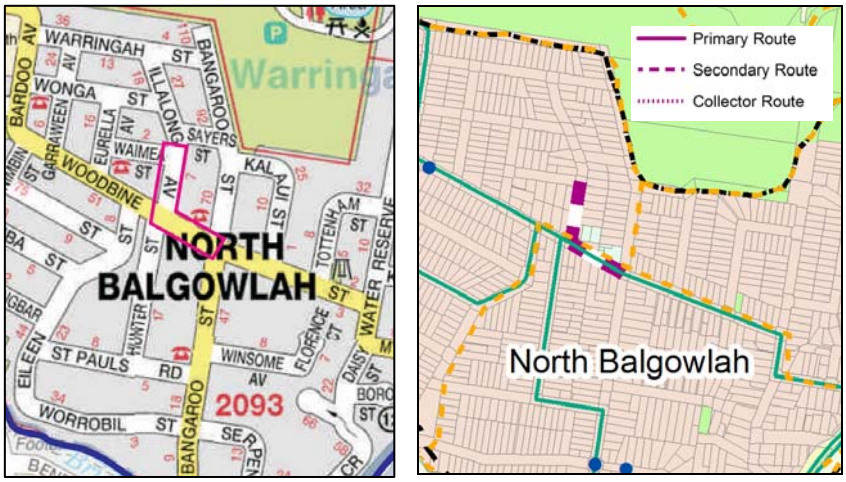


Figure 7.19.1: North Balgowlah focus area

The North Balgowlah focus area consists of the North Balgowlah Shops and some residential areas. It consists of mainly local pedestrian activities without any major pedestrian generators. Generally the footpaths in the area are in good condition, but some sections of footpath and kerb ramps require upgrading.

North Balgowlah is a low residential density suburb with local shopping village on the corner of Woodbine Street and Illalong Avenue. Balgowlah North Primary School is located to the north of this area on Manning Street. The shopping village attracts and caters for the local community, with a pubic transport route going along Woodbine Street with a stop either side near the shops.

Provision of pedestrian facilities is important for the local community in this area.

Secondary Route

Illalong Avenue (between Kalaui Street and Woodbine Street): There is a footpath on the eastern side of the road; however, due to the shops, people park on both sides of the road and there is no connection except for the kerb ramps at the intersection of Illalong Avenue and Woodbine Street. Although Illalong Avenue is a quiet local street, there is an opportunity to provide another crossing location at the top end of the street with footpaths on both sides.

Woodbine Street (between Illalong Avenue and Bangaroo Street): There are footpaths on both sides of the street; however they are narrower than preferred. This route is on a public transport link.

7.20 Terrey Hills

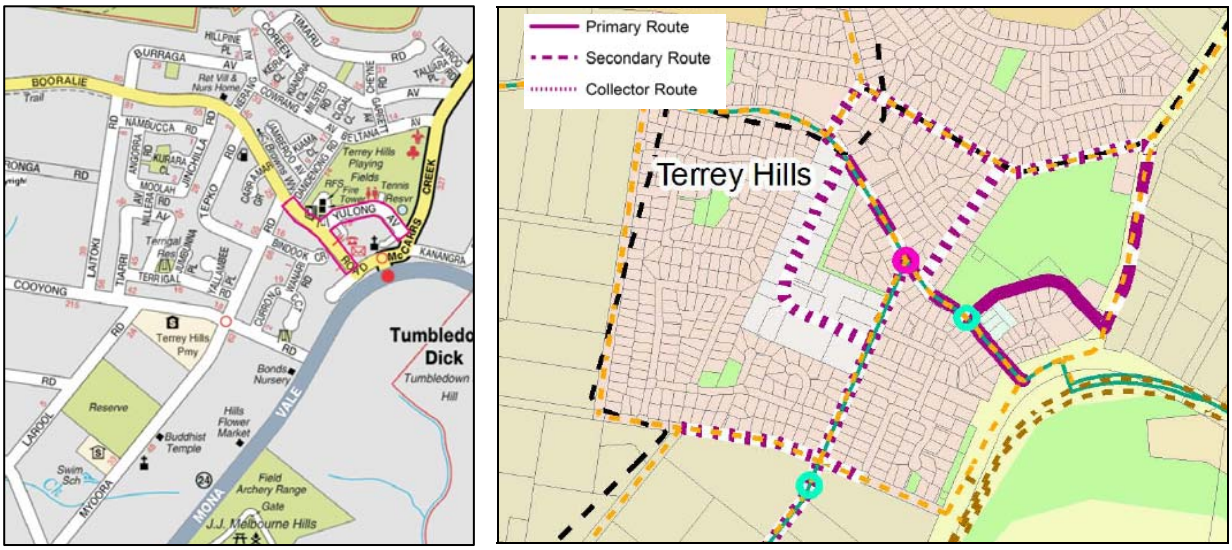


Figure 7.20.1: Terrey Hills focus area

The Terrey Hills focus area has a local community feel with cafés and small shops along Yulong Avenue and Booralie Road. Opposite the local shopping village, Terrey Hills Playing fields provide the community with an open field and tennis courts. Surrounding this area is low density housing with some light industrial further north (along Tepko Road) and Thompson Health Care (retirement village and nursing home along Nerang Avenue). To the west, Terrey Hills Primary School, German International School Sydney and Terrey Hills Swim School are located on small rural blocks. Pedestrian activity comprises mainly local trips.

It is important for the local community that pedestrian access within these areas is provided. Safe passage is important, especially for children, people with a disability and the aged. As a result, pedestrian routes have been identified to connect these areas together and provide opportunities for the local community to access the local attractors and generator.

Issues identified during consultation involved the conflict arising with bicycle and horse riding activities (due to the Ku-ring-gai Chase National Park). To improve the pedestrian amenity, it would be beneficial to provide a separated trail for horse riding, and a shared cycling and walking trail. This may provide opportunities to increase tourism to the area. Some of the kerb ramps in the area are required to be replaced (at the intersections of Booralie Road and Bindook Crescent, Booralie Road and Myoora Road, and Booralie Road and Dandenong Road).

Secondary Route

Booralie Road (between the Terrey Hills Shopping Village and Tepko Road): providing a link between the shopping village and the community. There are footpaths on the eastern side of the road along this route; however the path is narrower than preferred. It is recommended that the pedestrian crossing at the Booralie Road/ Myoora Road intersection be upgraded to a wombat crossing, and additional approach warning signs for traffic be installed.

Yulong Avenue: with the shopping village and Terrey Hills Playing Fields in the vicinity. The missing sections of footpath should be filled in so that the path is continuous. It is also recommended that a pedestrian island be installed near Booralie Road to provide safer access to the Terrey Hills shops. The pedestrian island should be designed so that trucks and buses can manoeuvre around it.

Collector Route

Myoora Road (between the swimming pool and Booralie Road): There are two schools located along this route (German International School Sydney and Terrey Hills Primary School). However there is a property located in between these schools breaking up the school zone and due to the bend in the road, some vehicles do not slow down. It is advised (and recommended by the primary school) that the school zone is connected between the two schools. There is a footpath along the northern/western side of the road, but a footpath on the other side of the road would improve access for parents and school children.

Cooyong Road (fronting the primary school, between Larool and Myoora Roads): There are footpaths along both sides of this route and a pedestrian crossing. It was advised by the school that vehicle speeds at the roundabout at the intersection of Myoora Road and Cooyong Road is a concern for pedestrians crossing the road. It may be necessary to undertake a further study of vehicle speeds at this location and investigate measures to improve the safety at this roundabout.

8. PAMP Recommendations – Design Standards

Warringah Council's vision for a 'fully accessible city', and its commitment to "… *long-term planning for the provision of pedestrian access and mobility to the highest possible standard"*, as described in Section 1, requires that the facilities it provides supports access for all users, and provides capacity for growth in pedestrian activity. Council also has legislated responsibilities under the DDA (see 3.2.4) to provide access for people with a disability in all public places.

There is a wide range of design guidelines for pedestrian facilities, such that identifying the most appropriate standards for a locality is not a straightforward matter: 'best practice' is often contingent on local conditions, and what may be appropriate in one location is not necessarily transferable to another location.

Council must also consider the economics of services delivered by infrastructure given the high initial capital construction costs as well as and the ongoing maintenance and renewal of such infrastructure. It is the community that must decide what level of service they are willing to accept in Council providing a 'fully accessible city'. For example, the provision of wider footpaths will provide improved accessibility, but given the limited financial resources to meet this level of service, the community must decide whether Council provides this level of service at the cost of reduced services elsewhere or modify their expectation and accept a lower, more affordable level of service.

This section compares the following documents, and identifies the recommended design standards for key pedestrian facilities in Warringah LGA, for each of the pedestrian route priority levels:

- *Australian Standard 1428 – Design for access and mobility (Parts 1, 2, 3 and 4)*, and *Australian Standard 1742.10 – Manual of uniform traffic control devices – Part 10: Pedestrian control and protection*.
- The Austroads series – *Guide to Traffic Management*, and *Guide to Road Design*;
- Warringah Council's '*Standard details for vehicle crossings, footpaths, kerb, gutter, gutter, crossings, pavement*'

The key pedestrian facilities that will be discussed are:

- Footpath widths;
- Kerb ramps;
- Road crossings;
- Gradients;
- Vertical clearance; and
- Shared Paths.

The Australian Standard provides the minimum requirements that must be provided, and incorporates the broad requirements of the Disability Discrimination Act (DDA). In most cases, the Austroads guidelines specify or outline a 'good practice' level of facilities design, and provides guidance on how to accommodate higher levels of demand. However, with regard to footpath provision in the Warringah LGA, it is advisable to provide (or allow for) as wide a footpath width as possible, to accommodate:

- newer designs of wheelchairs (motorised and non-motorised) and mobility scooters becoming wider;
- an increasing demand for shared paths, thereby requiring a minimum of 2.5m width paths (refer to Council's resolution of December 2009 regarding shared paths, as discussed later in Section 8.6);

- an increasing number of people walking for recreation;
- an increasing number of people walking for utility – that is, for non-recreational purposes such as work or shopping;
- an increasing demand for shared paths, thereby requiring a minimum of 2.5m width paths;
- the ageing population resulting in a larger proportion of people with mobility impairments, and thereby requiring mobility aids (such as wheelchairs, scooters, canes, guide dog, walking frame); and
- compliance with the DDA now and in the future.

When aiming for 'best practice' or even to 'future-proof' facilities provision, it is appropriate to consider the most recent guideline documents available.

The aim of the design standards discussed in this section is to apply them to provide best practice. In some locations it is difficult to apply these requirements based on the constraints such as steep topography. Constraints such as these should be carefully assessed and may be accepted as 'justifiable hardship' in meeting the Standards.

Some existing facilities may have been constructed in compliance with older Standards that are now superseded. These should be replaced, but in most cases fall under a low priority if they are still in good condition.

8.1 Footpath Widths

Footpaths provide the basic level of pedestrian access in the public domain. Without continuous, unobstructed footpaths to connect pedestrian facilities, they are not accessible.

The requirements and guidelines for footpath width for the Australian Standard, Austroads Guidelines and Warringah Council are compared in the table below.

Table 8.1.1: Comparison of Standards and Guidelines for Footpath Widths

Standards Australia 'AS 1428.1-1992'	Austroads 2009 'Guide to Road Design Part 6A: Pedestrian and Cyclist Paths'	Warringah Council 'Standard details for vehicle crossings, footpaths, kerb, gutter, gutter crossings, pavement'
Minimum clear width – 1.2m A clear width of 1m is adequate for people with ambulant disabilities, just allows passage for 80% of people who use wheelchairs People who use wheelchairs require a clear width of 1.2m A clear width of 1.5m allows a wheelchair and a pram to pass To allow two wheelchairs to pass comfortably, a clear width of 1.8m is required	General low demand – 1.2m to 1.0m (absolute minimum) High pedestrian volumes – 2.4m (or higher, based on demand) For wheelchairs to pass – 1.8m to 1.5m (desired minimum) (Narrower width of 1.2m can be tolerated for short distances) People with other disabilities – 1.8m to 1.0m	Standard Concrete Footpath 1. 1.2m or as directed 2. 1.5m where placed against the kerb 3. Full-width paving in Shopping centres

The concrete footpath design criteria currently adopted by Warringah Council specifies a minimum width of 1.2m. This provides sufficient room for two pedestrians to walk abreast or pass one another, or for a stroller or wheelchair to travel comfortably on, but not be able to pass each other without one having to negotiate a passing area.

It should be noted that the other guideline documents reviewed in Section 3 (*Planning Guidelines for Walking and Cycling*, and *Healthy by Design: A Planners' Guide to Environments for Active Living*) both suggest a 1.5m minimum footpath width, with the Healthy by Design guide recommending 2.5m paths *"along arterial roads and approach routes to … schools, parks and shopping precincts. (Three metre paths or wider are preferred to allow for greater contingency)"*.

It is recommended that Council adopt the Austroads Guidelines, as a minimum standard, but consider wider paths wherever possible, to 'future-proof' its facilities provision. Therefore the standard minimum footpath width would increase to 1.5 metres. Areas with high pedestrian volumes would have footpath widths of 2.4 metres (minimum), and areas where there are likely to be obstructions (such as footpath dining, signage poles, bins, seating), that the width of the footpath be increased such that the effective width is maintained.

8.1.1 Footpath Width Recommendations

The width of the footpath should respond to the volume and type of pedestrian activity. It is recommended that Council revise their existing footpath policy to adopt the following footpath width guidelines for all future works, as shown in the table below.

The minimum width of a Primary route should provide enough space for strollers/wheelchairs to either travel abreast or pass one another. It should also provide the opportunity for young children (under the age of 12) to legally ride bicycles.

The suggested Secondary and Collector route width provides the opportunity for pedestrians to walk abreast or pass one another, as well as providing enough room for a pedestrian to pass a stroller or wheelchair.

Table 8.1.2: Recommended Footpath Widths for PAMP Pedestrian Priority Routes

Route Hierarchy	Footpath width
Primary Route	2.0 m footpath width (minimum*), and wider in town centres or other high pedestrian activity areas, aiming for full-width paving where possible.
Secondary Route	1.5m footpath width (minimum*)
Collector Route	1.5m footpath width (minimum*)

* It must be noted that this minimum width is the 'effective width' (that is, between obstructions) – if there are bins, seats, sandwich boards, footpath dining, or other street furniture (temporary or permanent), the minimum width must be provided as a clear path of travel between these obstructions.

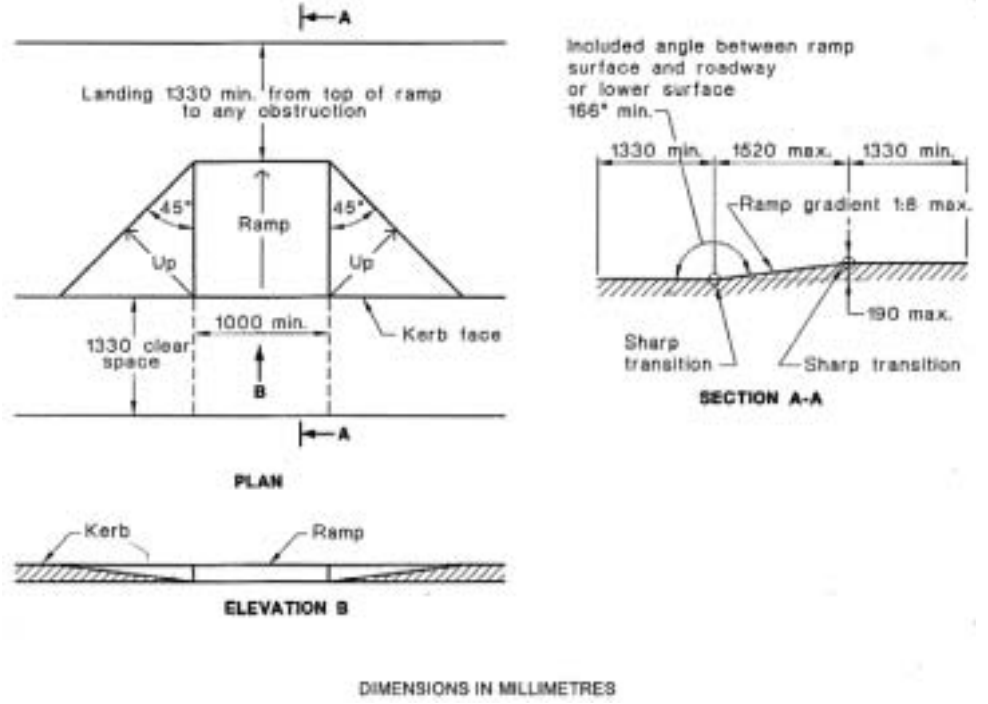
8.2 Kerb Ramps

Kerb ramps at road crossings are required for wheelchair users and other less mobile members of the community. The direction of the kerb ramp is used by people who have a vision impairment to indicate the direction they should walk to access the crossing point on the other side of the road. The gradient of the ramp is important for wheelchair users, as well as the smooth transition between gradients (eg. no lip).

The Austroads guidelines are derived from *Australian Standard 1428.1* for kerb ramp design. This kerb ramp is compared to the Council kerb ramp (Plan No. A4 7284 – Standard Kerb Access ramp Detail) below.

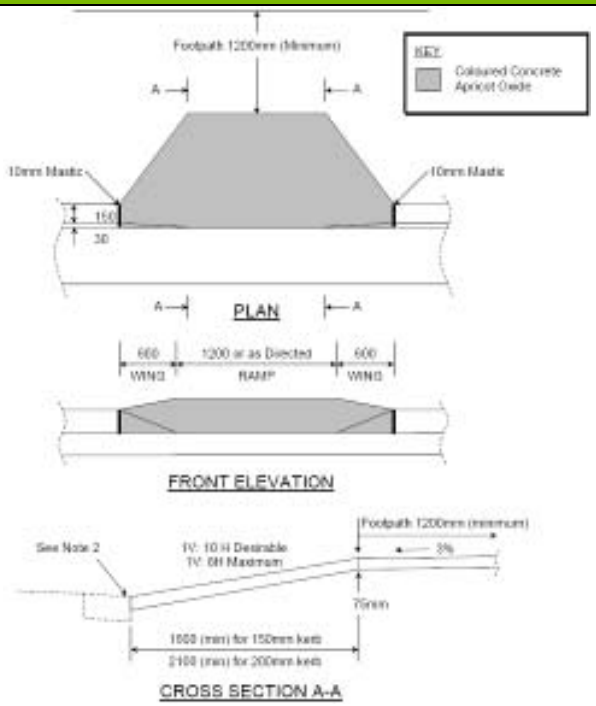
Table 8.2.1: Comparison of Standards and Guidelines for Kerb Ramps

AS1428.1



DIMENSIONS IN MILLIMETRES

Austroads 2009: Guide to Road Design Part 4: Intersections and Crossings – General



It is recommended that Council should modify their kerb ramp standard in the following manner to adopt some of AS1428.1 requirements:

- The gradient of the kerb ramp should not exceed 1:10 to prevent wheelchairs from tipping.
- The transition angles should be adopted from AS1428.1

8.3 Road Crossings

For this PAMP, the need for pedestrian crossings in some locations has been identified. However, the type of crossing has not been specified because the choice depends on the type of road, the volume and speed of traffic along it, the volume of pedestrians likely to use the crossing, sight distances, and RTA warrants for the provision of pedestrian crossings. This section provides a guide to selecting the most appropriate crossing type.

The *Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings* (*GTM Part 6*) includes some consideration of pedestrian and cyclist needs within the road environment. 'Table 3.3: Issues for different road user categories' discusses some of the issues and potential treatments.

The principle proposed for adoption is that pedestrians should not have to walk more than eight metres across a road pavement (that is, across two average width trafficable lanes, or a parking lane plus traffic lane) without a refuge of some sort. This should apply to all streets having traffic volumes in excess of 1,000 vehicles a day.

The priority of projects under this program is to be determined by the:

- Amount of vehicular traffic (known or estimated);
- Amount of pedestrian traffic;
- Total road width.

Midblock pedestrian and cyclist crossings of roads is discussed in Chapter 8 of the *GTM Part 6* and should be referred to when considering crossing points in the Warringah LGA. Consideration should be given to potential future pedestrian and cyclist volumes, rather than just existing volumes, to avoid expensive retrofitting costs. Tables 8.1 and 8.2 in *GTM Part 6* are useful for determining the most appropriate crossing treatments across any roadway in Warringah LGA. Some of these crossing treatments are discussed below.

Signalised pedestrian crossings

Marked pedestrian crossings should be considered across all approaches of signalised intersections, as per RTA Technical Direction (TDT 2001/08a). Kerb ramps should direct pedestrians perpendicularly across the road, rather than diagonally into the intersection. The push-button should be located such that a person in a wheelchair can reach it without being endangered, and the button should face the user oriented to the crossing direction.

Pelican and puffin crossings are signalised midblock pedestrian crossings that are suitable for crossing two-lane, two-way, low speed roads that have high traffic volumes or insufficient gaps for safe uncontrolled pedestrian crossings, limited sight distance, and where a zebra crossing would result in long delays for motorists.

Short pedestrian crossing phase timing was a common issue raised during the consultation for the PAMP, particularly for the elderly and people using wheelchairs and mobility scooters in Dee Why, across Pittwater Road. As there is limited capacity in the median to provide enough space for a staged crossing, it may be appropriate to increase the time given to the pedestrian crossing phase.

Pedestrian Crossings at Roundabouts

The issue of pedestrian crossing facilities at roundabouts was a topic raised during community consultation, particularly by Vision Australia (an organisation representing the interests of vision-impaired persons). There are a number of roundabouts identified in the focus areas where crossing locations are too close to the intersection, and in some instances poorly aligned and directing pedestrians into the roundabout traffic.

In the *GTM Part 6*, Commentary 5 includes two tables outlining 'Appropriate sites for roundabouts' and 'Inappropriate sites for roundabouts'. These tables should be consulted when reviewing the appropriateness of existing roundabouts -particularly in the Dee Why focus area - and when considering new roundabouts. Some of the characteristics of an inappropriate site for roundabouts are: "*Where there is considerable pedestrian activity and due to high traffic volumes it would be difficult for pedestrians to cross either road"* and *"Where the intersection is located on a major on-road cycle route.*" The Guide recommends that in these cases, the alternative of providing a signalised intersection should be considered, subject to the site meeting RTA warrants.

The *GTM Part 6* also recommends that pedestrian crossing locations should be located 6m or 12m back from the holding line at the entrance of roundabouts. This provides enough space for one or two vehicles to queue at the roundabout, and allows the pedestrian to be away from the intersection.

It was identified that some crossings at roundabouts have refuge islands installed, but that many of these refuge islands are narrower than the required standard width. The width of a refuge island should be able to accommodate the length of a stroller/ wheelchair, and it is recommended that the minimum width of the refuge island be 2m. Although some locations cannot be retrofitted to this standard, every effort should be made to achieve the optimal design. Where appropriate, line marking could be used to delineate the refuge area, and signage installed warning drivers to watch for pedestrians.

Raised threshold crossings

It is recommended that raised threshold pedestrian crossings be provided at crossing points on Primary routes where possible, particularly within a town centre environment and where pedestrian volumes are high and traffic speeds need to be reduced. A good example of raised threshold crossings in Warringah LGA is in the Freshwater town centre.

Wombat crossings are raised pedestrian crossings in 40 km/h speed zones, which may be appropriate on routes near local and neighbourhood centres which also serve a high volume of user groups with specific needs (school children, the elderly, wheelchair/ mobility scooter users, carers with prams).

Refuge islands, medians, kerb extensions, road narrowings

These physical pedestrian crossing aids aim to increase the safety of pedestrians and cyclists across the roadway to reduce conflict points between vehicles and pedestrians/ cyclists, and to simplify decisions which drivers and pedestrians/ cyclists have to make (such as, "Is it safe to cross this half of the road?"). Motorists still have priority when these aids are used. Where traffic speed is an issue, these treatments would need to be supported by road design cues.

A key issue to remember is that these pedestrian crossing aids should not be used as LATM primarily - first and foremost, they must be used to serve a pedestrian need. The danger is that if they are seen as 'just a road obstruction' and motorists do not expect to see pedestrians use the aid, when pedestrians do use the aid, they are in danger of not being expected or seen by motorists.

The design of these aids should ensure that people in wheelchairs/ mobility scooters and prams can be seen by motorists approaching the crossing point, and sight lines are not obstructed by plantings, signage, bollards, or barriers.

8.4 Gradients

While a footpath necessarily follows the natural topography of the area, in the best possible circumstances a continuous accessible path of travel along a footpath should:

- Have a longitudinal gradient of no steeper than 1 in 20
- Have a cross fall of no steeper than 1 in 40

It should be noted that in areas of steep topography it would result in unjustifiable hardship to achieve the longitudinal gradient recommended above.

Warringah Council does not have any guidelines in reference to the footpath gradients. Due to the terrain of the LGA, footpath design should follow the guidelines set out in AS 1428.1-2001 where possible. Austroads (2009) *Guide to Road Design Part 6A: Pedestrian and Cyclist Paths* expresses these requirements, provided below:

Gradients	Australian Standard AS 1428.1 - 2001 lists requirements for the design of sloped footpaths: • Adjacent ground for all footpaths should be within 25 mm of the level of the footpath. • If the adjacent ground has a steep slope, a kerb between 65 mm and 75 mm high should be provided to protect prams and wheelchairs and to guide those people with impaired vision. Handrails may also be provided. • The provision of seating clear of the walking space should be considered on long gradients. Other features such as observation decks should be considered if the path provides tourist/social opportunities. • Consideration should be given to the provision of an alternative shorter route via a staircase if such an alternative can be identified.
Steps, stairs and ramps	• An abrupt change in level can be a problem for pedestrians particularly for those who have vision impairments and need to be warned of the presence of a kerb, a flight of stairs or a ramp. • Ramps should be provided where possible as an alternative or in addition to steps or stairs that are a barrier to people with disabilities and necessary for people in wheelchairs or with prams. On the other hand some people with impaired mobility cannot use ramps and need shallow steps (refer to AS 1428.2 – 1992). • Rest areas (i.e. flat sections) should be provided at each change in direction and at intermediate points along ramps to break up long flights. AS 1428.2 suggests that the spacing of rest areas range from 9 m for ramp grades of 1:14 to 15 m for grades of 1:20. This is a most important consideration in the design of overpasses and underpasses. • Provide handrails to assist pedestrians, including those in wheelchairs: • on both sides of a set of stairs, or steps, or a ramp • wherever people may need support (e.g. continuously around rest areas and changes of direction). • Generally, two rails at different levels will be required to meet the need of both wheelchair users and other groups. • Ensure inter-visibility between the end of stairs or ramps and intersecting footpaths (e.g. sight distance not obscured by a wall) and an area at the foot of the stairs to minimise the risk of collision.

	• Ramp surfaces and treads of stairs should be stable, even and slip resistant. • Tactile ground surface indicators (TGSIs) should be provided at the top of stairs and foot of stairs to indicate these hazards. • Recommended maximum crossfall is 1:40 (refer to AS 1428.1)

8.5 Vertical Clearance

Warringah Council does not have any vertical clearance requirements provided in their guidelines. Austroads have followed the requirements from the Australian Standards, such that:

- 2.0m above the top of the kerb (Minimum for urban areas)
- 2.5m above the top of the kerb (requirement of AS 1742.2-2009)

It is recommended that Council adopt the requirements of the Australian Standards for vertical clearance.

8.6 Shared Paths

Existing and proposed shared path facilities that contribute to the Warringah Bicycle Network are identified in the Warringah Bike Plan maps (*Bicycle Route Network Map* and *Existing Facilities Map*).

The Warringah Bike Plan identifies strategies and actions to minimise conflicts between shared path users and also outlines recommended shared paths widths in accordance with user types.

It is important that the shared path is designed to cater for the anticipated demand. *Austroads' Guide to Road Design Part 6A: Pedestrian and Cyclist Paths* (2009) illustrates its recommended path width for shared paths, based on usage, in the figure on the following page.

For the design of shared paths in Warringah LGA, it is recommended that the width specified be determined on the basis of the potential medium- to long-term pedestrian and cyclist usage of a planned shared path, rather than existing use.

In general, a minimum of 2.0m is required for a local access shared path, rising to 2.5m or more to accommodate commuting cyclists or recreational paths.

Warringah Council passed a resolution in December 2009 (Item 9.1) regarding the "Shared Path Policy" which included the following:

> *"(B) That Council acknowledge the need to link local high use areas, e.g. schools and shopping centres, to the Warringah integrated Bike-path network.*
>
> *(D) That when future footpath renewal or road works do not coincide with identified routes in the adopted Warringah Bike Plan, then those works shall wherever sensible (see point B) be designed as shared paths and the extra required funding (beyond the funding required for footpath construction) be allocated from the Bike Plan budget."*

This PAMP supports item (B) above with its Primary, Secondary, and Collector routes, and notes that for item (D) Council officers are to make a judgement as to when it is 'sensible' to provide a shared path under the circumstances provided. Key considerations would include:

- On Primary and Secondary pedestrian routes, counts and/or observations should be made on current pedestrian and cyclist use of the route, and the width of the shared path be made to accommodate growth in those volumes and/or its anticipated use.
- Introduction of an education campaign for the local community on etiquette for the use of shared paths, such as:
  - keeping to the left unless overtaking;
  - cyclists to use their bell or call out to signal their intention to overtake another user;
  - all users to maintain their 'lane' of travel as much as possible, checking all directions before crossing the path or changing direction on the path;
  - users to travel in single file if another user is attempting to overtake or pass;
  - keeping dogs on short leads when using the path; and
  - using extra care around children, people with disabilities, and the elderly.

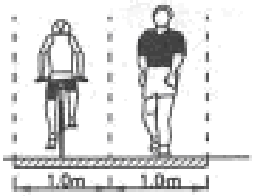
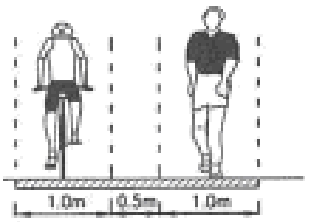
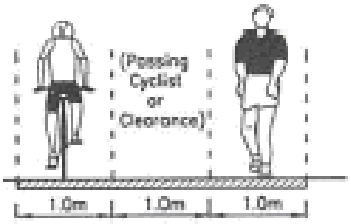
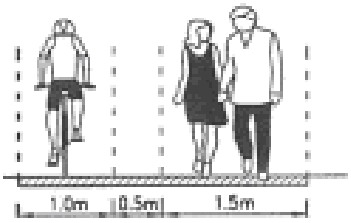
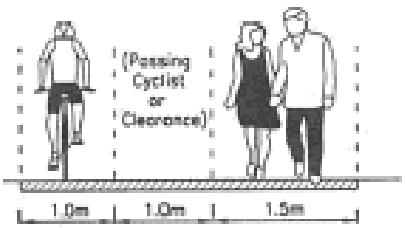
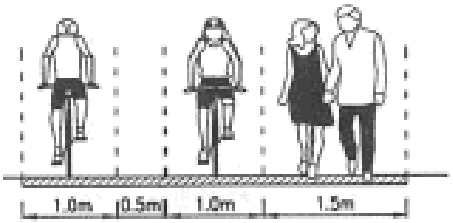
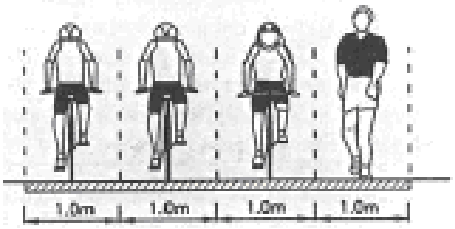
Scenario	Overall width of path	Predominant path purpose • Typical circumstances of use	
A	2.0 m	Local access •Constrained conditions •Tidal flow •Low use	
B	2.5 m	•Commuting and local access •Regular use •20 km/h	
C	3.0 m	Commuting •Frequent and concurrent use in both directions •30 km/h+	
D	3.0 m	Recreation •Regular use •20 km/h	
E	3.5 m	•Commuting and recreation (concurrent) •Frequent and concurrent use in both directions •30 km/h+	
F	4.0 m	Major recreational path •20 km/h •Heavy and concurrent use in both directions	
G	4.0 m	Major recreational path •Regular group rides •Heavy and concurrent use in both directions •Generally low speed due to congestion	

Figure 8.6.1: Shared use path operation (Source: *Austroads* (2009))

9. PAMP Recommendations – Soft-infrastructure measures

This PAMP recognises the need to support the provision of pedestrian facilities with active measures to encourage Warringah's residents, workers, and visitors to use the facilities, to achieve Warringah Council's goal of a 'fully accessible city', reducing private car use, and encouraging use of sustainable transport.

Pedestrian and cycling facilities are most cost-effectively provided when considered during the planning and design of new or existing infrastructure. In conjunction with the provision of new facilities, education, promotion and encouragement activities can then:

- Educate communities about the new facilities provided and the opportunities these present;
- Encourage use of the facilities; and
- Create goodwill between the community and Council.

In addition to implementing a pedestrian network, soft-infrastructure measures have been identified that are intended to assist Council in achieving its objectives in commissioning the Warringah PAMP. These measures have been developed through consideration of the characteristics of Warringah LGA (Section 2), the literature review (Section 3), pedestrian crash data (Section 4), community and stakeholder consultation (Section 5), and the development of the prioritised pedestrian network (Sections 6 and 7)

There are three recommended strategies for improving pedestrian access and mobility in Warringah LGA, outlined below and discussed in this section:

- Provide Council leadership;
- Undertake encouragement activities; and
- Ongoing monitoring, maintenance, and updates.

9.1 Provide Council Leadership

The purpose of this strategy is to use Council's position as the level of government closest to the community, and within a network of local government organisations pursuing similar goals, to provide a lead role within the community in supporting and providing for walking and cycling through areas of its direct responsibility, as well as actively encouraging developers to so in all future developments

This strategy also recognises that pedestrian facilities provide the most basic and universal form of access (as all humans can be pedestrians, but not all humans have access to a car). If new development (whether housing or employment or recreation) is in a location far removed from existing facilities, then it can be very isolating or difficult to access for those new residents or potential employees and visitors, and costly for council and/or the developer to provide those connecting footpaths.

The principle of providing a continuous path of travel should be addressed holistically: considering internal and external access, and the interfaces between them. Providing footpaths and a ramp into a building is not effective if internal circulation spaces are too narrow or if there is a step just inside the doorway. Providing for a broad range of access makes good business sense. Providing a higher-than-minimum level of access can also minimise costly retrofitting when legislation or standards (over time) require a higher level of provision than is currently required.

The principles developed in this PAMP that underpin the identification of Primary, Secondary, and Collector pedestrian routes (see Section 6) can be applied any time there is a significant development or redevelopment site or area, that could result in a change in the number and/or type of pedestrians or cyclists attracted to/ generated by the site or area.

Recommended actions are:

1. ***Adopt the Warringah PAMP*** as the basis for providing a pedestrian network and associated pedestrian facilities. The PAMP is intended to be a 'living' document which will change and evolve over time as the needs within the LGA change.

2. ***Council to adopt and actively support a Sustainable Movement hierarchy*** that places more sustainable transport modes higher than less sustainable transport modes:
    1) Walking (including users of wheelchairs, mobility scooters, prams, other walking aids) and cycling;
    2) Public transport (priority to buses, and bus access to trains and ferries) and community transport (in all its forms, such as minivans/buses, accessible taxis);
    3) Commercial/ freight vehicles;
    4) Regular taxis and car share vehicles;
    5) Private vehicles.

    This hierarchy would be supported by decision making (including decisions about funding) that prioritises access by walking, cycling, and public transport over private vehicles.

3. ***Integrate Council's strategic planning projects with PAMP recommendations.*** Council should consider planning for growth areas to have good pedestrian and cycle provisions, linked to Primary or Secondary PAMP routes. Growth areas should be supported by pedestrian and cycle networks to town/village centres, workplaces, community facilities, schools, public transport, and recreation.

4. ***Develop a Public Domain Plan which takes a whole of Council approach.*** This Plan should include an integrated approach to: signage location and type (refer to proposed "Signage style guide" PAMP Action no. 5); lighting; street furniture (design and siting, allowance for clear path of travel); ground surfaces; landscaping; public art; and provision of facilities (such as bus stops, bicycle parking, public toilets). The Public Domain Plan should be compatible with other Council strategies and plans, tourism marketing goals, accessibility requirements, and be flexible to local site conditions.

5. ***Develop a Warringah Signage style guide for the use of all directional, compliance, behavioural, and interpretative signage in Warringah.*** The Signage style guide should address: user types (pedestrians (including wheelchair/ mobility scooter users), cyclists and possibly horse riders on some trails), purpose of the sign, location & siting, continuity of signage and information along a route/ path, sign size and shape, consistent graphics/ pictograms, text, colours, lighting, use of 'smart poles'.

6. ***Council to provide ongoing training of staff focussed on awareness and implementation of walking and cycling planning principles*** based on those listed within the PAMP and other relevant guidelines and strategies. Training should be open for technical staff and Councillors to attend, so that staff and councillors are aware of the importance of planning for walking and cycling for basic and fundamental access.

7. ***Undertake regular reviews and update (when appropriate) guidelines and standards for the construction and maintenance of pedestrian and cycling facilities in Warringah.*** Lead the implementation of the guidelines within the organisation through targeted training of technical staff as well as depot/works staff and contractors, communication programs, and compliance measures.

8. ***Maintain ongoing liaison, cooperation and coordination*** between service authorities, maintenance crews, land managers, and other relevant agencies, regarding the development and maintenance of the pedestrian network.

9. ***Monitor local and international experience*** – and report on Warringah's experience with walking and cycling encouragement programs to identify programs most likely to succeed in the local area and to access available funding opportunities.

10. ***Consider using planning agreements as authorised under the EP&A Act*** when assessing development applications, to deliver PAMP infrastructure works.

11. ***Support a strong focus on the pedestrian environment in the Northern Beaches Hospital/ Frenchs Forest Master planning process***, including: providing fine-grained pedestrian access around the various facilities, designed to encourage patients to walk/move around for exercise and stimulation, as well as to provide access for visitors and staff; locating staff accommodation and public transport stops close to the facilities, and designed with personal safety in mind, so that staff parking can be minimised.

12. ***Further develop community engagement, communication and reporting processes*** using available tools to enable meaningful reporting of pedestrian issues, requests and ideas.

13. ***Provide advice for residents and property owners on Council's website on appropriate vegetation types (preferably native plants) to be planted in verges or along footpaths***, to minimise the use of invasive or high-maintenance plants being used adjacent to walking or cycling routes, and obstructing these paths when not regularly maintained. Investigate provision of low-cost plants to those who seek and receive such permission, as an incentive (e.g. with the support of local nurseries).

9.2 Undertake Encouragement Activities

The purpose of this strategy is to inform residents of the development of routes and thus the network, and maximise use of the infrastructure being developed. As some of the following actions are dependent on route creation, they can only occur following the completion of infrastructure. This is identified in the action plan.

However, the commitment to such actions can be made immediately, so that appropriate planning for encouragement activities occurs alongside development of infrastructure. It is not intended that all of the following actions are implemented; these are listed to provide a selection of actions that Council can undertake, with those chosen being ones assessed as most compatible with local communities and other activities. It is however recommended that a selection of these actions be undertaken over the lifetime of the PAMP. More information on initiatives and projects mentioned, as well as other relevant initiatives, is contained in **Appendix H**.

14. ***Publicise the completion and adoption of the Warringah PAMP***, thanking residents for their contribution e.g. through Council's newsletter or an article in Council's regular column in the local newspaper.

15. ***Publish and regularly update maps of the pedestrian and cyclist networks and make available on the Council website***. Prepare new maps every 1-2 years (approximately), updating as routes are implemented, and/or assist other mapping agencies or adjacent Councils to include walking and shared use facilities on their maps, by providing updated information to these agencies when projects are completed. These maps could also be used as input into 'Green Travel Plans' and 'Safety around Schools' programs, and guides for Bike/Walk to Work/School Days, and other similar programs.

16. ***Prepare a "Shared path User Guide" as part of an education campaign for the community on etiquette for the use of shared paths***. The "Shared path User Guide" should be able to be adapted for presentation on Council's website, in newspapers, on community radio, as a brochure, and as information signage at key locations along popular shared path routes. Suggested inclusions for the Guide are discussed in Section 8.6.

17. ***Council to prepare a Green Travel Plan for all its offices and main venues***, to be included in promotional brochures for visitors/ clients/ customers, and provided to new employees. The Green Travel Plans should also be made available on Council's website, and links to the website provided on staff email signatures.

18. ***Encourage major employers to prepare Green Travel Plans for their employees*** (Workplace Travel Plan) as well as their visitors/ clients/ customers (Transport Access Guide), and actively promote and encourage use of the Plans.

19. ***Establish a Walking and Cycling stakeholders network or forum*** with the aim of further facilitating increasing community participation in walking and cycling, for 'functional' (that is, for journeys to work, school, shopping, personal business) and recreational purposes.

20. ***Support walking and cycling encouragement programs***, possibly in conjunction with other Councils, such as Walk/ Ride to Work Day and Walk Safely to School Day.

21. ***Trial a "Safety around Schools" program*** with a local primary and secondary school with a view to extending the program to all interested schools in the LGA, and assess the support for a 'walking school bus' or 'bicycle train' program to primary schools, where these do not exist. The RTA can assist in guiding the program, and the TravelSmart website has information and case studies that can also assist Council in undertaking this program. It is very important to target children for physical activity programs - if good 'active transport' habits are encouraged when kids are young and naturally active, they have a better chance of maintaining them through life.

22. ***Advertise route completions*** in the local newspaper and through stakeholder networks. Encourage local groups to publicise route completions to their stakeholders and to hold an event celebrating the opening of the new facility.

23. ***Promote and support development and implementation of travel behaviour change programs***, by Council or other public agencies or private organisations. Ideally there would be a 'champion' or team (potentially across various departments) within Council to coordinate the range of programs, which could target workplaces, schools, or households, to encourage more walking, cycling, and public transport access and reducing car use.

9.3 Ongoing monitoring, maintenance, and updates

Even a comprehensive network of footpaths will not be effective in providing for pedestrians if the network is inaccessible or unsafe. Council currently undertakes regular maintenance-focussed inspections of its main town centres, with the busier town centres inspected more regularly than the smaller centres. Regular inspection and maintenance programs will assist in keeping the network of pedestrian facilities – footpaths, crossings, and signage – operating at a satisfactory level.

Key traffic, pedestrian, and cyclist volume and crash data should be monitored to identify areas where there may be growing conflicts between traffic and pedestrians or cyclists. It is important to be proactive when it comes to pedestrian and cyclist safety in particular, as they are the most vulnerable road users, and a pedestrian or cyclist crash usually results in an injury or fatality, whereas most vehicular crashes do not.

Questionnaire surveys could also be undertaken to capture current non-users who may become users if their issues were addressed (such as additional crossing points, slower adjacent traffic speeds).

Observations and surveys on existing and new routes/ facilities could also identify maintenance or other issues to be addressed (such as overhanging branches, localised narrowings, and congestion points). Counts over time could show increased use of pedestrian/ bicycle routes, and possibly a reduction in traffic volumes, and thereby support the case for accelerated implementation (via increased funding) of pedestrian and bicycle routes. Counts can also be used as a guide for the most appropriate width for shared paths – usually, initial volumes might be low, but over time, volumes could increase significantly and justify a wider path provision. Over time, Council will be better able to 'predict' how wide a shared path should be to cater for future growth and thereby avoid expensive retrofitting or community dissatisfaction.

To capture the incremental land-use, community needs, and the environment changes that occur over time, it is important that the PAMP Action Plan is updated periodically. The RTA recommends updates every five years approximately, but this can be at Council's discretion depending on population change and the inclusion of new pedestrian generators.

24. ***Establish and maintain a Pedestrian Facilities database of the whole Warringah LGA.*** The database would include all existing pedestrian facilities (footpaths, crossings, signs), all prioritised PAMP infrastructure works, new pedestrian facilities requests, and should be updated whenever pedestrian facilities are installed, upgraded, or removed.

25. ***Council to approach the RTA to investigate the major pedestrian crash clusters*** (particularly those on Pittwater Road in Narrabeen, Dee Why, Brookvale, and Collaroy) to identify the likely causes of the crashes, and develop mitigation measures to improve the pedestrian safety at those locations.

26. ***Council to continue undertaking regular maintenance-focussed inspections*** of its main town centres, and include inspections of all the other identified focus areas.

27. ***Traffic count data should be reviewed periodically (annually) to identify areas where there may be growing conflicts between traffic and pedestrians or cyclists.*** Additional crossing locations, upgraded crossings, or LATM may be required at these locations to improve pedestrian and cyclist safety, before accidents occur.

28. ***Undertake 'before' and 'after' data collection for major new pedestrian and cyclist facilities.*** Data could include pedestrian/ cyclist counts, crash data, crossing delay, satisfaction surveys.

29. ***Observation and counts of pedestrian and cyclist use on key corridors - particularly shared paths - should be conducted periodically (annually or biennially)*** to observe the number of users, type of users, any safety concerns, and opportunities for other links or improved facilities. A questionnaire survey could also be undertaken to review the level of satisfaction with pedestrian and cyclist facilities, purpose and frequency of use, or any barriers to use of the facilities. Survey, observation and count data would be used to refine and update the PAMP and Bike Plan so that they best reflect the needs of users or potential users, and the broader community.

30. ***Undertake a review of this PAMP*** within 5-7 years of adoption. Access funding from RTA to support this action.

9.3.1 Pedestrian Facilities database

In order to monitor the progress and success of the PAMP it is important to first establish the baseline information in a database that can be updated whenever new facilities requests are raised and when pedestrian facilities are installed, upgraded, or removed. The database could also be used as the basis for condition monitoring purposes, and include the following:

- Location of all existing pedestrian facilities (It is understood that Council is finalising a footpath/ pedestrian facilities inventory of the whole Warringah LGA)
- Location of all proposed pedestrian works
- Estimated and actual cost of projects (to be updated, as required)
- Existing and estimated future pedestrian volumes (including location and date collected)
- Existing and estimated future traffic volumes (including location and date collected)
- Pedestrian crash data
- Proposed developments (location, date of completion)
- Community requests
- Community responses to completed works (include both positive and negative)
- Date of proposed works
- Completed works

All new facilities requests would be assessed by first determining whether it is (or should be) on a Primary, Secondary or Collector pedestrian priority route (Section 6.1), then giving it a prioritisation score using the PAMP Works Prioritisation Table (Table 6.3.1)

The database should be in a format that is easy to understand and operate, and be accessible to all Council departments involved in the PAMP implementation. To prevent double handling of information or a removal of a project, Council departments involved should work together, with allocated staff with administration access to update the database whenever new data or requests arrive.

10. Cost Estimates, Implementation and Funding

10.1 PAMP Cost Estimate

Cost estimates for the infrastructure elements of the PAMP have been summarised in two parts:

- Footpaths - including new footpaths and widening of existing footpaths; and
- Other pedestrian facilities and maintenance - including kerb ramp repairs or new installations, vegetation clearing, new crossing facilities.

Costing for the soft-infrastructure elements is not included, as many actions are to be incorporated into existing Council responsibilities, or depend on uptake of the programs by the broader community.

Unit costs for typical PAMP items are listed in Table 10.1.1.

Table 10.1.1: Typical unit costs

Item	Cost
Signalised pedestrian crossing	$100,000
Wombat crossing	$38,200
Pedestrian crossing	$35,000
Pedestrian refuge island	$18,000
Kerb access ramp (repair)	$1,200
Kerb access ramp (new)	$1,000
Steps (per m^2)	$230
Wheel stops (each)	$200
Pedestrian fencing (per m)	$180
Tree root damage (per m^2)	$140
Footpath – repair (per m^2)	$160
Footpath – new (per m^2)	$130
Temporary footpath repair	$70
Footpath grinding (per joint)	$70
Footpath clearing (per m)	$20
Removal of tree	$1,500

The unit costs are based on the information provided by Council and companies contacted to provide specific services. It is important to note that these are only estimates and that the total cost of the works will vary depending on the final design of the facility, the existing environment (for example, removing or relocating services, cutting and removal of rock, earthworks, traffic management), changes in unit cost, or other outside influences.

Some tasks, such as footpath grinding and vegetation clearing can be undertaken either by Council or under the supervision of Council by contractors. The cost of some tasks (such as footpath grinding) may be lower than estimated if the work is undertaken in bulk, rather than one by one. The simple task of clearing vegetation from a footpath improves the safety and accessibility of a footpath.

Although some work may be categorised as medium or low priority, it may have a low associated cost and could be combined with other Council works: for example, new or repaired kerb ramp work can be done at the same time as new roadworks or footpath upgrades in the same street. The breakdown of costs for each focus area is shown in **Appendix G**.

Tables 10.2.1a, b, and c summarise the PAMP cost estimates.

Table 10.2.1a: Estimated cost of work – Pedestrian Footpath maintenance

Pedestrian footpath maintenance				
Area	Priority			Total Cost ($)
	Low	Medium	High	
Allambie Heights	0	0	5,600	5,600
Allambie Grove	0	0	20,300	20,300
Belrose	0	13,300	0	13,300
Belrose Austlink	12,500	100	0	12,600
Brookvale	2,100	57,200	74,200	133,500
Collaroy	0	0	21,700	21,700
Collaroy Plateau	0	17,300	0	17,300
Cromer	900	71,600	8,600	81,100
Cromer Heights	0	8,800	0	8,800
Dee Why	0	91,200	76,700	167,900
Forestville	0	13,900	4,500	18,400
Forestway	0	15,400	0	15,400
Frenchs Forest	0	29,000	0	29,000
Freshwater	0	5,500	14,800	20,300
Killarney Heights	0	12,400	5,200	17,600
Manly Vale	0	0	13,500	13,500
Narrabeen	0	0	130,100	130,100
Narraweena	0	0	42,400	42,400
North Balgowlah	137,400	0	0	137,400
Terrey Hills	1,600	8,300	0	9,900
Total	**$ 154,500**	**$ 343,900**	**$ 417,600**	**$ 916,100**

Table 10.2.1b: Estimated cost of work – Pedestrian crossing facilities

Suburb	Road Name	Route Priority	Recommended Actions	Implementation Priority	Cost
Allambie Grove	Frenchs Forest East	P	Install a refuge island at Skyline shops	MEDIUM	$ 18,000
	Frenchs Forest East	P	Install a refuge island at Capital Business Park near the bus stops	MEDIUM	$ 18,000
	Allambie Road	P	Install traffic lights with all pedestrian movements at Allambie Road/Rodborough Road	HIGH	$ 100,000
	Pittwater Road	P	Install pedestrian phase for all legs at Warringah Road/Allambie Road intersection	HIGH	$ 50,000
Allambie Heights	Orara Road	C	Install refuge island near Kentwell Road intersection	MEDIUM	$ 18,000
	Allambie Road	P	Install two refuge islands between Flers Street and Mortain Avenue	MEDIUM	$ 36,000
Belrose Austlink	Narabang Way	S	Install pedestrian refuge islands on all sides of roundabout at Garigal Road	MEDIUM	$ 72,000
	Narabang Way	S	Install a crossing facility between Minna Cl and Narabang Cl	MEDIUM	$ 4,000
Brookvale	Pittwater Road	P	Install traffic lights with all pedestrian movements at Pittwater Road/Orchard Road	HIGH	$ 100,000
	Pine Avenue	P	Install a refuge island near the intersection of Pine Avenue and Federal Parade	MEDIUM	$ 18,000
Collaroy	Pittwater Road	P	Install a signalised crossing facility at intersection with Anzac Avenue	HIGH	$ 100,000
	Pittwater Road	P	Install a signalised crossing facility between Jenkins Street and Eastbank Avenue	HIGH	$ 100,000
Cromer	South Creek Road	P	Install refuge island between Middleton Road and Grover Avenue	MEDIUM	$ 18,000
Dee Why	Francis Street	C	Install pedestrian refuge island near Redman Road	MEDIUM	$ 18,000
	Fisher Road	P	Install a refuge island between Mcintosh Road and Kingsway	HIGH	$ 18,000
	Pittwater Road	C	Install traffic lights with all pedestrian movements at Pittwater Road/Lismore Avenue	LOW	$ 100,000
	Howard Avenue	P	Investigate pedestrian safety at the roundabouts and consider whether the design can be improved to increase safety, or whether a signalised intersection is more appropriate.	HIGH	$ -
	Oaks Avenue	P	Investigate pedestrian safety at the roundabouts and consider whether the design can be improved to increase safety, or whether a signalised intersection is more appropriate.	MEDIUM	$ -
Forestville	Melwood Avenue	S	Install refuge island near intersection with Bushland Avenue	MEDIUM	$ 18,000
	Melwood Avenue	S	Install refuge island near intersection with Bernie Avenue	MEDIUM	$ 18,000
Forestway	Grace Avenue	P	Install pedestrian crossings at the intersections with Sorlie Road	MEDIUM	$ 2,000
Frenchs Forest	Lockwood Avenue	S	Upgrade existing pedestrian crossing to Wombat Crossing	MEDIUM	$ 38,200
	Blackbutts Road	S	Widen existing refuge island	MEDIUM	$ 18,000
Freshwater	Oliver Street	S	Install a crossing facility on near Robert Street	MEDIUM	$ 2,000
Killarney Heights	Tramore Place	P	Install kerb blister at existing childrens' crossing at Tramore Place.	MEDIUM	$ 10,000
Narrabeen	Pittwater Road	P	Install a signalised crossing facility at the intersection Pittwater Road and Albert Street	HIGH	$ 100,000
Narraweena	Alfred Street	S	Install pedestrian crossing at the entrance to the school	MEDIUM	$ 2,000
Terrey Hills	Booralie Road	P	Upgrade existing pedestrian crossing near Myoora Road to Wombat Crossing	HIGH	$ 38,200
	Yulong Avenue	P	Install pedestrian refuge island near Booralie Road	MEDIUM	$ 18,000
	Myoora Road	C	Install a crossing facility near the entrance of the Terrey Hills Primary School	MEDIUM	$ 18,000
				TOTAL	$ 1,070,400

Table 10.2.1c: Estimated cost of work – Option1: New Footpaths

	New Footpaths – Option 1			
	Footpath widths (m)			
	1.5m	**1.8m**	**2.0m**	**2.4m**
Primary	--	$8,136,100	$9,040,200	$10,848,500
Secondary	$16,173,500	$19,406,000	$21,561,800	--
Collector	$21,010,900	--	--	--
***Low cost**:* 2.0m for Primary, 1.5m for Secondary & Collector				**$47,224,600**
High cost: 2.4m for Primary, 2.0m for Secondary, 1.5m Collector				**$54,421,200**

Table 10.2.1d: Estimated cost of work – Option2: Widened Footpaths

	Widen Footpaths – Option 2			
	Footpath widths (m)			
	1.5m	**1.8m**	**2.0m**	**2.4m**
Primary	--	$3,534,900	$4,438,900	$6,246,900
Secondary	$5,477,500	$8,711,000	$10,867,600	--
Collector	$8,611,100	--	--	--
***Low cost**:* 2.0m for Primary, 1.5m for Secondary & Collector				**$18,527,500**
***High cost**:* 2.4m for Primary, 2.0m for Secondary, 1.5m Collector				**$25,725,600**

Two options were costed for the footpath element of the PAMP works. Table 10.2.1c includes costs for removing and replacing footpaths on all Primary, Secondary, and Collector routes with new footpath (Option 1). The total cost for this is between $47.2 million and $54.4 million. A more realistic option is widening existing footpaths to the required width and putting in new footpaths where none currently exist, costed as Option 2 in Table 10.2.1d. The total cost for this option is between $18.5 million and $25.7 million - that is, less than half of Option 1.

It is recommended that Option 2 be adopted - that is, widening existing footpaths where required, and installing new footpaths where required. The 'High cost' option should be used to allow for contingencies. Adding the cost of the pedestrian footpath maintenance and pedestrian crossing facilities ($1.97 million, summarised in Tables 10.2.1a & b), the **total estimated cost of the Warringah PAMP works is approximately $27.7 million**.

10.2 Funding options

Funding for the implementation of a PAMP is generally and largely sourced from Council and the RTA. The range of funding sources currently available to NSW councils for walking and cycling facilities include:

- Council rates
- Developer contributions (S94A or similar) levied by Councils
- Planning agreements (as authorised under EP&AAct)
- RTA road network funding (100% on State roads, 50% with Councils on regional and local roads)
- RTA cycleway grants to councils on a dollar for-dollar basis (that is, 50% with Councils)
- Other NSW Government grants, such as NSW Planning dollar-for-dollar grants to councils for the NSW Coastline Cycleway
- Commonwealth Government grants, such as 'Roads to Recovery' funds and Australian Greenhouse Office grants
- Private sector grants and community funds

Many of these funding sources have specific purposes that they can or cannot be used for, for example, Council's s94A funds can only be used for new infrastructure works and not for repairing or replacing existing works.

10.2.1 Council-controlled funding

The current budget for new pedestrian facilities for the Warringah LGA is approximately $200,000 per annum, with an additional $450,000 approximately for maintenance of existing facilities. This gives a total of $650,000 per annum, approximately. Based on this annual rate of expenditure, the recommended PAMP infrastructure works would take over 40 years to complete.

Because of the increasing need for pedestrian facilities, and the recognition that provision of pedestrian facilities addresses many of the key issues in the community, it perhaps is appropriate for annual expenditure on pedestrian facilities to be significantly increased from the existing $650,000 to at least $1 million or $1.2 million per annum. Increasing the level of funding to this level could mean the works are completed in around 25 years.

Contributions received from Section 94A of the Environmental Planning and Assessment Act, 1979 from developers give Council the funds to invest in public infrastructure. Although this money can be used for any public facility, funds can be allocated to improve pedestrian access.

Options for Council to increase its funding of pedestrian facilities are briefly discussed below:

- *Reallocation of existing funds* – Increasing the annual expenditure for pedestrian facilities by reallocating funds from, say, road construction or non-urgent road maintenance. The argument behind this action would be that pedestrians are higher on the 'Sustainable Movement hierarchy' (see Section 9.1) than all other modes.
- *Increasing Council rates* – A case may be made that the changing demographics of Warringah has seen a continued increasing proportion of user groups with specific needs (including the aged, young families, people with disabilities), and that the community as a whole would benefit from improved pedestrian accessibility, as it has many flow-on effects such as:
  - reduced local traffic volumes;
  - increased physical activity resulting in reduced health care needs;
  - longer-term reduced dependency on private vehicle use means less car parking is required, so less productive land is 'lost' to car parking provision; and
  - increased pedestrian activity in local centres improves business activity and can also increase safety.

A combination of these options could be used to significantly increase the annual budget for provision of pedestrian facilities.

10.2.2 External funding

Alternative funding sources for the implementation of the PAMP are listed below. This is not a comprehensive listing of all funding sources, or a suggestion that funding applications to these sources will be successful. However, it presents a number of funding sources that may be applicable and assist Council in implementing this PAMP.

- Local clubs and community groups
- Department of Human Services, Ageing and Disability, NSW
- Department of Education and Training, NSW
- Department of Health, NSW

- Department of Housing, NSW
- Department of Public Works and Services, NSW
- Department of Sport and Recreation, NSW
- Department of Sport and Recreation Development, NSW
- NSW Transport
- Department of Planning, NSW
- State Transit Authority

The preparation of the PAMP allows Council to approach funding providers with a clear plan of the work required in the study areas. This demonstrates that the available funding will be used effectively to improve the pedestrian network. A realistic budget should be set each year, with any additional funding prioritised. It is also important that less urgent needs be noted in case of additional funds becoming available.

The RTA policy on implementation funding for state roads is 100% for road crossing facilities only, including kerb ramps. On regional and local roads the RTA will provide 50% of the funds if Council provides the other 50%. However, it is important to note that RTA funding level per year depends on the RTA budget.

11. PAMP Action Plan

The Warringah PAMP Action Plan presented below includes the recommended actions arising through the course of this study, under the following headings:

- PAMP Soft-infrastructure actions, incorporating actions under:
  - Provide Council leadership (Section 9.1)
  - Undertake encouragement activities (Section 9.2)
  - Ongoing monitoring, maintenance, and updates (Section 9.3)
- PAMP Infrastructure actions, incorporating actions under:
  - New footpaths and footpath widenings (Section 6.2, Appendix G-1)
  - Footpath maintenance works (Section 6.2, Appendix A, Appendix G-2)
  - New or upgraded crossing facilities (Section 7)

It should be noted that some of the infrastructure actions require further investigation, which may include traffic and pedestrian counts, further consultation with surrounding land owners, before determining the most appropriate location for the facility.

Each action listing includes:

- **Action number**;
- **Suburb** and **road name** – to provide a specific location for the action (if relevant);
- **Pedestrian priority level** – whether the location will serve a Primary, Secondary, Collector pedestrian route, as identified in this PAMP;
- **Recommended action** – description of the action;
- **Responsibility** for the action – most actions are the responsibility of Council, and the specific department within Council has been identified, while some actions require agreement and implementation by the RTA
  - RTW - Roads Traffic and Waste
  - SP - Strategic Planning
  - NE - Natural Environment
  - PRF - Parks Reserves and Foreshores
  - PCD - Property and Commercial Development
  - CCS - Community and Cultural Services
- **Implementation priority** – for infrastructure actions, these were determined as High, Medium, or Low, based on the Works Prioritisation Table; for soft-infrastructure actions, these have been determined based on judgement.
- **PAMP Report reference** – this points to where further discussion and/or context of the action can be found within this PAMP report.

Table 11.1: PAMP Action Plan

Action No.	Suburb	Road Name	Pedestrian Priority	Recommended Actions	Responsibility	Implementation Priority	PAMP Report Reference
PAMP Soft-infrastructure Actions							
1	LGA-wide	N/A	N/A	*Adopt the Warringah PAMP* as the basis for local structure planning in providing a pedestrian network and associated pedestrian facilities. The PAMP is intended to be a 'living' document which will change and evolve over time as the needs within the LGA change.	RTW	High	9.1 and 2.4
2	N/A	N/A	N/A	*Council to adopt and actively support a Sustainable Movement hierarchy* that places more sustainable transport modes higher than less sustainable transport modes. This hierarchy would be supported by decision making (including decisions about funding) that prioritises access by walking, cycling, and public transport over private vehicles.	RTW SP	High	9.1
3	LGA-wide	N/A	N/A	*Integrate Council's strategic planning projects with PAMP recommendations.* Council should consider planning for growth areas to have good pedestrian and cycle provisions, linked to Primary or Secondary PAMP routes. Growth areas should be supported by pedestrian and cycle networks to town/village centres, workplaces, community facilities, schools, public transport, and recreation.	SP, CCS	High	2.1.2
4	LGA-wide	N/A	N/A	*Develop a Public Domain Plan which takes a whole of Council approach.* This Plan should include an integrated approach to: signage location and type (refer to proposed "Signage style guide" PAMP Action no. 5); lighting; street furniture (design and siting, allowance for clear path of travel); ground surfaces; landscaping; public art; and provision of facilities (such as bus stops, bicycle parking, public toilets). The Public Domain Plan should be compatible with other Council strategies and plans, tourism marketing goals, accessibility requirements, and be flexible to local site conditions.	SP	High	9.1
5	LGA-wide	N/A	N/A	*Develop a Warringah Signage style guide for the use of all directional, compliance, behavioural, and interpretative signage in Warringah.* The Signage style guide should address: user types (pedestrians (including wheelchair/ mobility scooter users), cyclists and possibly horse riders on some trails), purpose of the sign, location & siting, continuity of signage and information along a route/ path, sign size and shape, consistent graphics/ pictograms, text, colours, lighting, use of 'smart poles'.	SP RTW NE PRF CCS	High	3.1.5 9.1
6	N/A	N/A	N/A	*Council to provide ongoing training of staff focussed on awareness and implementation of walking and cycling planning principles* based on those listed within the PAMP and other relevant guidelines and strategies. Training should be open for technical staff and Councillors to attend, so that staff and councillors are aware of the importance of planning for walking and cycling for basic and fundamental access.	SP RTW, CCS	Medium	9.1

Action No.	Suburb	Road Name	Pedestrian Priority	Recommended Actions	Responsibility	Implementation Priority	PAMP Report Reference
PAMP Soft-infrastructure Actions (cont'd)							
7	N/A	N/A	N/A	*Undertake regular reviews and update (when appropriate) guidelines and standards for the construction and maintenance of pedestrian and cycling facilities in Warringah.* Lead the implementation of the guidelines within the organisation through targeted training of technical staff as well as depot/works staff and contractors, communication programs and compliance measures.	RTW, CCS	Medium	9.1
8	N/A	N/A	N/A	*Maintain ongoing liaison, cooperation and coordination between service authorities, maintenance crews, land managers, and other relevant agencies, regarding the development and maintenance of the pedestrian network.*	RTW	Medium	9.1
9	N/A	N/A	N/A	*Monitor local and international experience* – and report on Warringah's experience with walking and cycling encouragement programs to identify programs most likely to succeed in the local area and to access available funding opportunities.	RTW	Medium	9.1
10	N/A	N/A	N/A	*Consider using planning agreements as authorised under the EP&A Act* when assessing development applications, to deliver PAMP infrastructure works.	SP CCS	High	9.2
11	Frenchs Forest	N/A	N/A	*Support a strong focus on the pedestrian environment in the Northern Beaches Hospital/ Frenchs Forest Master planning process*, including: providing fine-grained pedestrian access around the various facilities, designed to encourage patients to walk/move around for exercise and stimulation, as well as to provide access for visitors and staff; locating staff accommodation and public transport stops close to the facilities, and designed with personal safety in mind, so that staff parking can be minimised.	SP RTW	Medium	3.2.3 9.2
12	LGA-wide	N/A	N/A	*Further develop community engagement, communication and reporting processes using available tools to enable meaningful reporting of pedestrian issues, requests and ideas.*	RTW	Medium	9.3
13	N/A	N/A	N/A	*Provide advice for residents and property owners on Council's website on appropriate vegetation types* (preferably native plants) to be planted in verges or along footpaths, to minimise the use of invasive or high-maintenance plants being used adjacent to walking or cycling routes. Investigate provision of low-cost plants to those who seek and receive such permission, as an incentive (e.g. with the support of local nurseries).	RTW NE PRF	Low	9.3
14	N/A	N/A	N/A	*Publicise the completion and adoption of the Warringah PAMP*, thanking residents for their contribution e.g. through Council's newsletter or an article in Council's regular column in the local newspaper.	RTW	High	9.3

Action No.	Suburb	Road Name	Pedestrian Priority	Recommended Actions	Responsibility	Implementation Priority	PAMP Report Reference
PAMP Soft-infrastructure Actions (cont'd)							
15	N/A	N/A	N/A	*Publish and regularly update maps of the pedestrian and cyclist networks* and make available on the Council website. Prepare new maps every 1-2 years (approximately), updating as routes are implemented, and/or assist other mapping agencies or adjacent Councils to include walking and shared use facilities on their maps, by providing updated information to these agencies when projects are completed. These maps could also be used as input into 'Green Travel Plans' and 'Safety around Schools' programs, and guides for Bike/Walk to Work/School Days, and other similar programs.	RTW	Medium	9.3
16	N/A	N/A	N/A	*Prepare a "Shared path User Guide" as part of an education campaign for the community on etiquette for the use of shared paths.* The "Shared path User Guide" should be able to be adapted for presentation on Council's website, in newspapers, on community radio, as a brochure, and as information signage at key locations along popular shared path routes.	RTW CCS	Medium	8.6, 9.3
17	LGA-wide	N/A	N/A	*Council to prepare a Green Travel Plan for all its offices and main venues*, to be included in promotional brochures for visitors/ clients/ customers, and provided to new employees. The Green Travel Plans should also be made available on Council's website, and links to the website provided on staff email signatures.	PCD	High	9.3
18	LGA-wide	N/A	N/A	*Encourage major employers to prepare Green Travel Plans* for their employees (Workplace Travel Plan) as well as their visitors/ clients/ customers (Transport Access Guide), and actively promote and encourage use of the Plans.	SP	Medium	9.3
19	N/A	N/A	N/A	*Establish a Walking and Cycling stakeholders network or forum with the aim of further facilitating increasing community participation in walking and cycling,* for 'functional' (that is, for journeys to work, school, shopping, personal business) and recreational purposes.	RTW CCS	Medium	9.3
20	LGA-wide	N/A	N/A	*Support walking and cycling encouragement programs*, possibly in conjunction with other Councils, such as Walk/ Ride to Work Day and Walk Safely to School Day.	RTW CCS	High	9.3
21	LGA-wide	N/A	N/A	*Trial a "Safety around Schools" program* with a local primary and secondary school with a view to extending the program to all interested schools in the LGA, and assess the support for a 'walking school bus' or 'bicycle train' program to primary schools, where these do not exist.	RTW CCS	High	9.3
22	N/A	N/A	N/A	*Advertise route completions* in the local newspaper and through stakeholder networks. Encourage local groups to publicise route completions to their stakeholders and to hold an event celebrating the opening of the new facility.	RTW CCS	Medium	9.3

Action No.	Suburb	Road Name	Pedestrian Priority	Recommended Actions	Responsibility	Implementation Priority	PAMP Report Reference
PAMP Soft-infrastructure Actions (cont'd)							
23	N/A	N/A	N/A	*Promote and support development and implementation of travel behaviour change programs, by Council or other public agencies or private organisations.* Ideally there would be a 'champion' or team (potentially across various departments) within Council to coordinate the range of programs, which could target workplaces, schools, or households, to encourage more walking, cycling, and public transport access and reducing car use.	RTW, SP, CCS	Medium	9.3
24	N/A	N/A	N/A	*Establish and maintain a Pedestrian Facilities database of the whole Warringah LGA.* The database would include all existing pedestrian facilities (footpaths, crossings, signs), all prioritised PAMP infrastructure works, new pedestrian facilities requests, and should be updated whenever pedestrian facilities are installed, upgraded, or removed.	RTW	High	9.4
25	N/A	N/A	N/A	*Council to approach the RTA to investigate the major pedestrian crash clusters* (particularly those on Pittwater Road in Narrabeen, Dee Why, Brookvale, and Collaroy) to identify the likely causes of the crashes, and develop mitigation measures to improve the pedestrian safety at those locations.	RTW	High	4.2, 4.3, 9.4
26	LGA-wide	N/A	N/A	*Council to continue undertaking regular maintenance-focussed inspections* of its main town centres, and include inspections of all the other identified focus areas.	RTW	High	9.4
27	LGA-wide	N/A	N/A	*Traffic count data should be reviewed periodically (annually) to identify areas where there may be growing conflicts between traffic and pedestrians or cyclists.* Additional crossing locations, upgraded crossings, or LATM may be required at these locations to improve pedestrian and cyclist safety, before accidents occur.	RTW	Medium	9.4
28	LGA-wide	N/A	N/A	*Undertake 'before' and 'after' data collection for major new pedestrian and cyclist facilities.* Data could include pedestrian/ cyclist counts, crash data, crossing delay, satisfaction surveys.	RTW	Medium	9.4
29	LGA-wide	N/A	N/A	*Observation and counts of pedestrian and cyclist use on key corridors - particularly shared paths - should be conducted periodically (annually or biennially)* to observe the number of users, type of users, any safety concerns, and opportunities for other links or improved facilities. A questionnaire survey could also be undertaken to review the level of satisfaction with pedestrian and cyclist facilities, purpose and frequency of use, or any barriers to use of the facilities. Survey, observation and count data would be used to refine and update the PAMP and Bike Plan so that they best reflect the needs of users or potential users, and the broader community.	RTW	Medium	9.4

Action No.	Suburb	Road Name	Pedestrian Priority	Recommended Actions	Responsibility	Implementation Priority	PAMP Report Reference
30	N/A	N/A	N/A	*Undertake a review of this PAMP* within 5-7 years of adoption. Access funding from RTA to support this action.	RTW (with SP, CCS, NE, PRF)	Medium	9.4
PAMP Infrastructure Actions							
31	LGA-wide	N/A	P, S, C	Construct new footpaths and footpath widenings in line with the Pedestrian Priority routes identified in the Warringah PAMP.	RTW	High, Medium, Low	7.1 - 7.20
32	LGA-wide	N/A	P, S, C	Undertake the footpath maintenance works, as outlined in Appendix G of the Warringah PAMP (locations provided in GIS).	RTW	High, Medium, Low	App. G
33	Allambie Grove	Frenchs Forest Road East	P	Install a refuge island at Skyline shops.	RTW	Medium	7.1
34	Allambie Grove	Frenchs Forest Road East	P	Install a refuge island at Capital Business Park (near the bus stops).	RTW	Medium	7.1
35	Allambie Grove	Allambie Road	P	Discuss with RTA the addition of pedestrian and cyclist signalised crossings on the western leg (Warringah Road) and the northern leg (Allambie Road) of this existing signalised intersection at Warringah Road, and take the Bicycle Network into account. Both eastern and southern legs already have pedestrian signals.	RTW	High	7.1
36	Allambie Grove	Allambie Road	P	Discuss with RTA the opportunity to replace the existing roundabout at Rodborough Road with a signalised intersection with pedestrian and cyclist phases *on all four legs*.	RTW	High	7.1
37	Allambie Heights	Allambie Road	S	Investigate the installation of one or two crossing facilities between Flers Street and Mortain Avenue to accommodate wheelchairs (both motorised and manual).	RTW	Medium	7.2
38	Allambie Heights	Orara Road	C	Relocate ramps and provide pedestrian island on northern leg of Orara Rd/ Kentwell Rd roundabout.	RTW	Medium	7.2
39	Belrose Austlink	Narabang Way	S	Investigate the installation of a crossing facility between Minna Close and Narabang Close. Currently there is no break in the vegetated median strip. Ensure the design considers implications for cyclists.	RTW	Medium	7.4
40	Belrose Austlink	Narabang Way	S	Install a pedestrian island on all approaches to roundabout at Narabang Way/ Garigal Road.	RTW	Medium	7.4
41	Brookvale	Pittwater Road	P	Discuss with RTA the opportunity to alter the road environment through the Brookvale town centre (approximately between Federal Parade and Old Pittwater Road, Brookvale), to alert drivers to slow down and watch for pedestrians and cyclists. This section of Pittwater Road has a high number of pedestrian and cyclist accidents.	RTW and RTA	High	4.3

Action No.	Suburb	Road Name	Pedestrian Priority	Recommended Actions	Responsibility	Implementation Priority	PAMP Report Reference
PAMP Infrastructure Actions (cont'd)							
42	Brookvale	Pine Avenue	P	Install a pedestrian and cyclist refuge island near the intersection of Pine Avenue and Federal Parade. Considerations should be provided for activity at Brookvale Oval and the connecting pedestrians and bicycle network links.	RTW	Medium	7.5
43	Brookvale	Pittwater Road	P	Discuss with RTA the installation of traffic signals (with pedestrian phases) at the intersection of Pittwater Rd/ Orchard Rd. This location is an accident cluster on Pittwater Road.	RTW and RTA	High	7.5
44	Collaroy	Pittwater Road	P	Investigate the installation of a pedestrian crossing facility between Jenkins Street and Eastbank Avenue. There have been a number of pedestrians injured as a result of vehicle accidents here.	RTA	High	7.6
45	Collaroy	Pittwater Road	P	Discuss with RTA the installation of traffic signals (with pedestrian phases) at the intersection of Pittwater Rd/ Anzac Av. This provides for part of a recreational link to Griffith Park, Long Reef Golf Club, and the Collaroy headland.	RTA	Hgih	7.6
46	Cromer	South Creek Road	P	Investigate the installation of a pedestrian and cyclist crossing facility between Middleton Road and Grover Avenue, in consultation with the Northern Beaches Secondary College Cromer Campus. Ensure the location of this crossing takes into consideration the future off-road shared path link between Grove Avenue and Dumic Place / Cromer Park, as identified in the Warringah Bike Plan.	RTW	Medium	7.8
47	Dee Why	Fisher Road	P	Investigate the installation of a pedestrian/ cyclist crossing between McIntosh Road and Kingsway to serve the Council buildings and educational facilities in the area.	RTA	High	7.10
48	Dee Why	Pittwater Road	P	Discuss with RTA the opportunity to alter the road environment through the Dee Why town centre (approximately between Hawkesbury Avenue and Pacific Parade, Dee Why), to alert drivers to slow down and watch for pedestrians. This section of Pittwater Road has a high number of pedestrian accidents.	RTW and RTA	High	4.30
49	Dee Why	Howard Avenue	P	Investigate pedestrian safety at the roundabouts and consider whether the design can be improved to increase safety, or whether a signalised intersection is more appropriate.	RTW	High	7.10
50	Dee Why	Oaks Avenue	P	Investigate pedestrian safety at the roundabouts and consider whether the design can be improved to increase safety, or whether a signalised intersection is more appropriate. Oaks Avenue is an on-road cycling route, therefore design implications also needs to take into consideration implications for cyclists.	RTW	Medium	7.10
51	Dee Why	Francis Street	--	Investigate the installation of a pedestrian refuge island near the intersection with Redman Road.	RTW	Medium	7.10

Action No.	Suburb	Road Name	Pedestrian Priority	Recommended Actions	Responsibility	Implementation Priority	PAMP Report Reference
PAMP Infrastructure Actions (cont'd)							
52	Dee Why	Pittwater Road	C	Investigate the installation of a signalised pedestrian and cyclist crossing at the Pittwater Road/ Lismore Avenue. This would link the Dee Why Lagoon multi-use off-road trail across Pittwater Road.	RTA	High	7.10
53	Forestville	Melwood Avenue	S	Investigate the installation of a pedestrian refuge island near the intersection with Bushland Avenue. This will provide a safe crossing location for children using the playing fields and people access the RSL. Ensure the cross design takes into consideration the future off-road shared path proposed along Melwood Avenue as identified in the Warringah Bike Plan.	RTW	Medium	7.11
54	Forestville	Melwood Avenue	S	Investigate the installation of a pedestrian refuge island at the intersection with Bernie Avenue. This will provide a safe crossing location for children using the playing fields and people access the RSL. This section of Melwood Avenue is identified as an on-road cycling route in the Warringah Bike Plan, therefore crossing design needs to consider implications for cyclists.	RTW	Medium	7.11
55	Forestway	Grace Avenue	P	Investigate the installation of pedestrian crossing facilities at the intersections with Sorlie Road to provide pedestrians a safe location to cross when motorist are concentrating on parking. Grace Avenue is identified as an on-road cycling route in the Warringah Bike Plan, therefore crossing design needs to consider implications for cyclists.	RTW	Medium	7.12
56	Frenchs Forest	Lockwood Avenue	P	Upgrade existing pedestrian crossing near Glen Street to a wombat crossing (raised pedestrian crossing).	RTW	Medium	7.13
57	Frenchs Forest	Blackbutts Road	P	Widen existing pedestrian refuge near Athol Street (to 2.5m).	RTW	Medium	7.13
58	Freshwater	Oliver Street	S	Investigate the installation of a crossing facility on Oliver Street near Robert Street to improve safety to parents and children for Harbord Primary School and the nearby day care centre. Oliver Street is identified as an on-road cycling route in the Warringah Bike Plan, therefore crossing design needs to consider implications for cyclists.	RTA	Medium	5.4
59	Killarney Heights	Tramore Place		Install kerb blister at existing childrens' crossing at Tramore Place.	RTW	Medium	7.15
60	Narrabeen	Pittwater Road	P	Discuss with RTA the opportunity to alter the road environment through the Narrabeen town centre (approximately between Waterloo Street and Goodwin Street in Narrabeen), to alert drivers to slow down and watch for pedestrians. This section of Pittwater Road has a high number of pedestrian accidents, including two fatalities.	RTW and RTA	High	7.17

Action No.	Suburb	Road Name	Pedestrian Priority	Recommended Actions	Responsibility	Implementation Priority	PAMP Report Reference
PAMP Infrastructure Actions (cont'd)							
61	Narrabeen	Pittwater Road	P	Investigate the installation of a crossing facility at (or near) the intersection Pittwater Road/ Albert Street. Consider the installation of pedestrian fencing along the median strip along Pittwater Road to discourage pedestrians crossing away from the correct locations. This is due to the number of accidents that have occurred in this vicinity. Pittwater Road is identified as an on-road cycling route in the Warringah Bike Plan, therefore crossing design needs to consider implications for cyclists.	RTW and RTA	High	7.17
62	Narraweena	Alfred Street	S	Investigate the installation of a crossing facility located at the entrance to the school. Alfred Street is identified as an on-road cycling route in the Warringah Bike Plan, therefore crossing design needs to consider implications for cyclists.	RTW	Medium	5.4
63	Terrey Hills	Booralie Road	P	Upgrade existing pedestrian crossing near Myoora Rd to a wombat crossing (raised pedestrian crossing).	RTW	High	5.4
64	Terrey Hills	Yulong Avenue	P	Install a pedestrian refuge near Booralie Road intersection.	RTW	Medium	7.20
65	Terrey Hills	Myoora Road	C	Investigate the installation of a crossing facility near the entrance of the Terrey Hills Primary School to improve the safety for parents and children crossing the road. Myoora Road is identified as an on-road cycling route in the Warringah Bike Plan, therefore crossing design needs to consider implications for cyclists.	RTW	Medium	5.4

12. Conclusion

The Warringah LGA has significant pedestrian attractors and generators of local and regional importance. It has areas of high pedestrian activity due to the number of schools, shopping centres, medical facilities, beaches and recreational facilities located throughout the LGA.

Provision of pedestrian facilities contributes to addressing:

- **Providing basic access** between where people live and where they want to go;
- **Encouraging physical activity** and thereby reducing the health risk and burden on the community;
- **Promoting sustainable modes of travel** (that is, walking, cycling and public transport use) and thereby reducing traffic congestion and pollution caused by vehicle emissions;
- **Providing recreational opportunities** for the whole community, particularly for user groups with specific needs or people with limited access to recreation, by providing links to local shops, community facilities, parks and beaches, and sporting fields.

The Warringah Pedestrian Access and Mobility Plan was developed through extensive literature review (including Council plans, relevant standards, and 'best practice' guidelines), data analysis of pedestrian crash data, broad stakeholder consultation (including information stalls, focus group meetings, questionnaire surveys, schools input), detailed site observation and footpath audits of the focus areas.

This PAMP process resulted in the development of a prioritised pedestrian network of Primary, Secondary, and Collector pedestrian routes focussed on Council's identified focus areas, but including intra-regional links to nearby centres and recreational attractors throughout Warringah LGA. The principles underpinning the identification of the Primary, Secondary, and Collector pedestrian routes can be used to refine the network at any time, in response to changes in pedestrian demand.

Use of the Works Prioritisation table will allow a consistent approach to be used to prioritise the implementation of pedestrian facilities. Supporting this prioritised pedestrian network are additional soft-infrastructure recommendations and design standards that make up the complete Pedestrian Access and Mobility Plan for Warringah LGA.

The **estimated cost of the PAMP infrastructure works is $27.7 million**. Because of the increasing importance placed on providing for pedestrian access by the community, it is strongly recommended that Council significantly increase its annual funding for pedestrian facilities from an approximate $650,000 to at least $1 million to 1.2 million, and explore public as well as private funding partnerships to supplement this funding, so that the benefits of improved pedestrian access and mobility can be reaped sooner. Implementation of the soft-infrastructure recommendations will also support the ongoing implementation of the PAMP infrastructure.

It is intended that the Warringah PAMP is a 'living' document that can be added to, amended, and updated as the PAMP gets implemented and as pedestrian needs and priorities change over time.

Appendix A
Focus Area Maps: Pedestrian Crash Locations and Footpath Audits by Focus Areas

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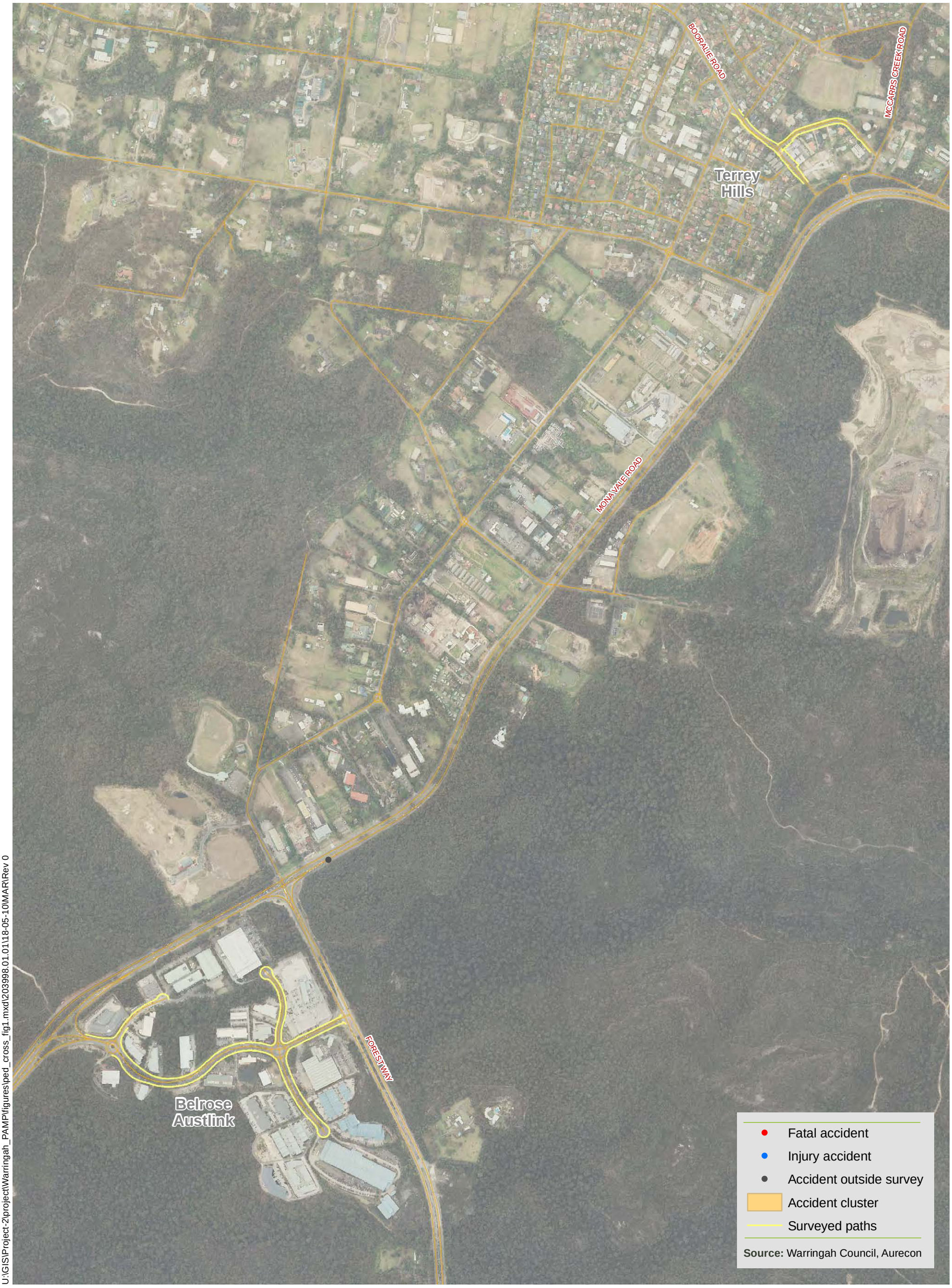

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SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 1A: Pedestrian accidents

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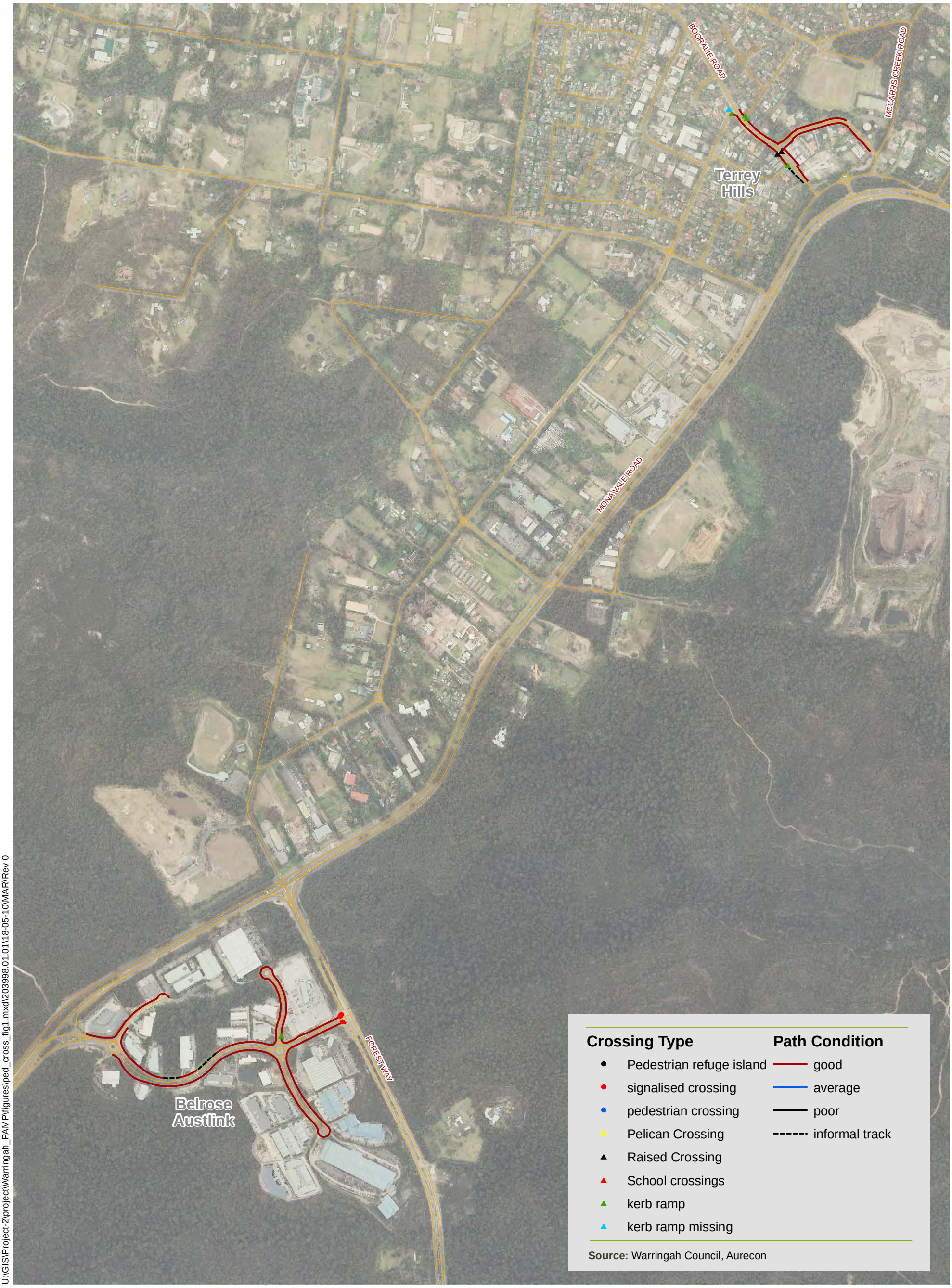

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SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 1B: Pedestrian crossing and path condition

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SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 1C: Crossing condition and alignment

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0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 1D: Pavement condition, sight distance and overhang

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SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 1E: Pavement gradient and hazard areas

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SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 1F: Vertical clearance and obstructions

aurecon

U:\GIS\Project-2\project\Warringah_PAMP\figures\accident_fig2.mxd\203998.01.01\18-05-10\MAR\Rev 0

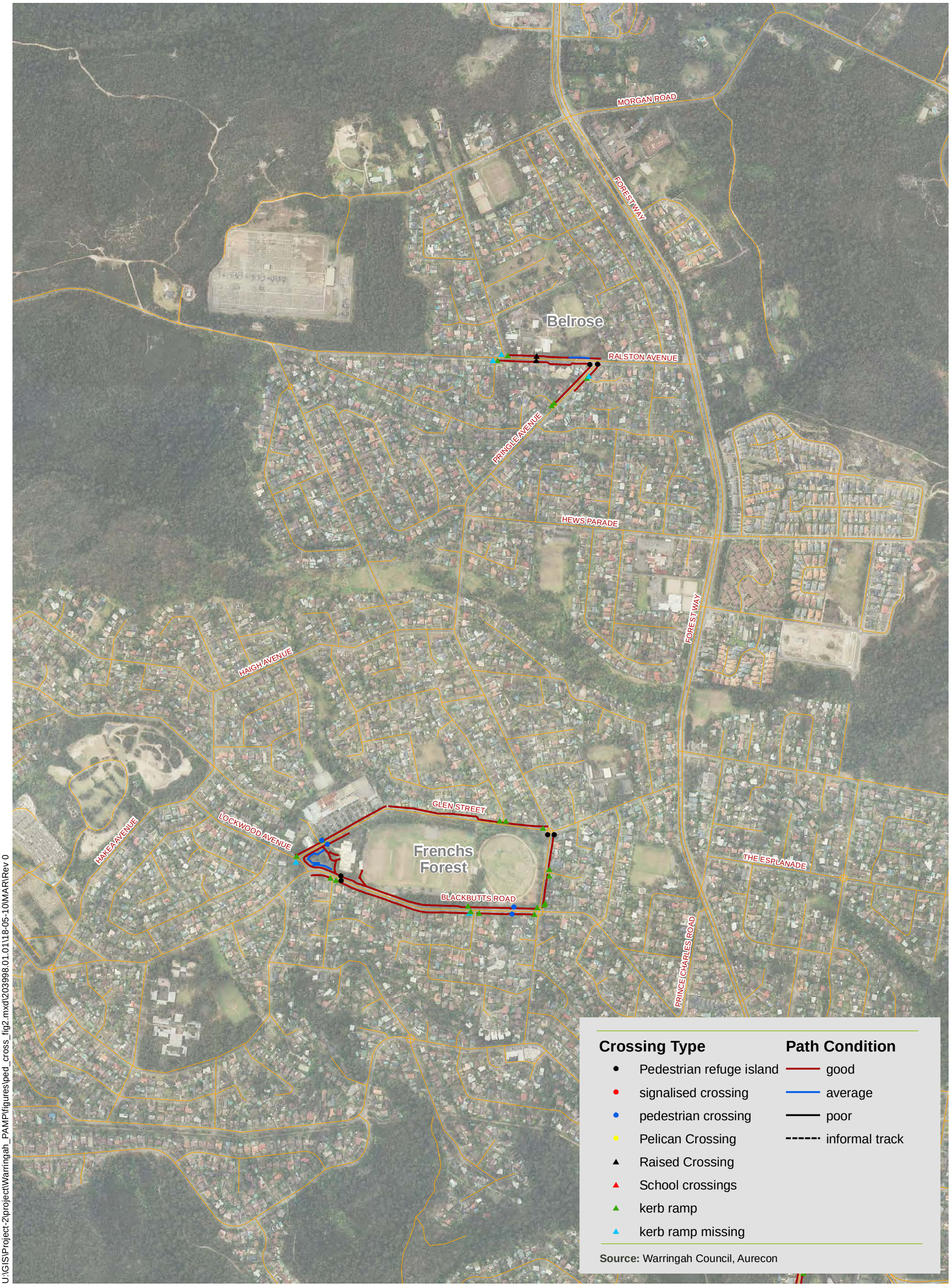
SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

Warringah **PAMP**

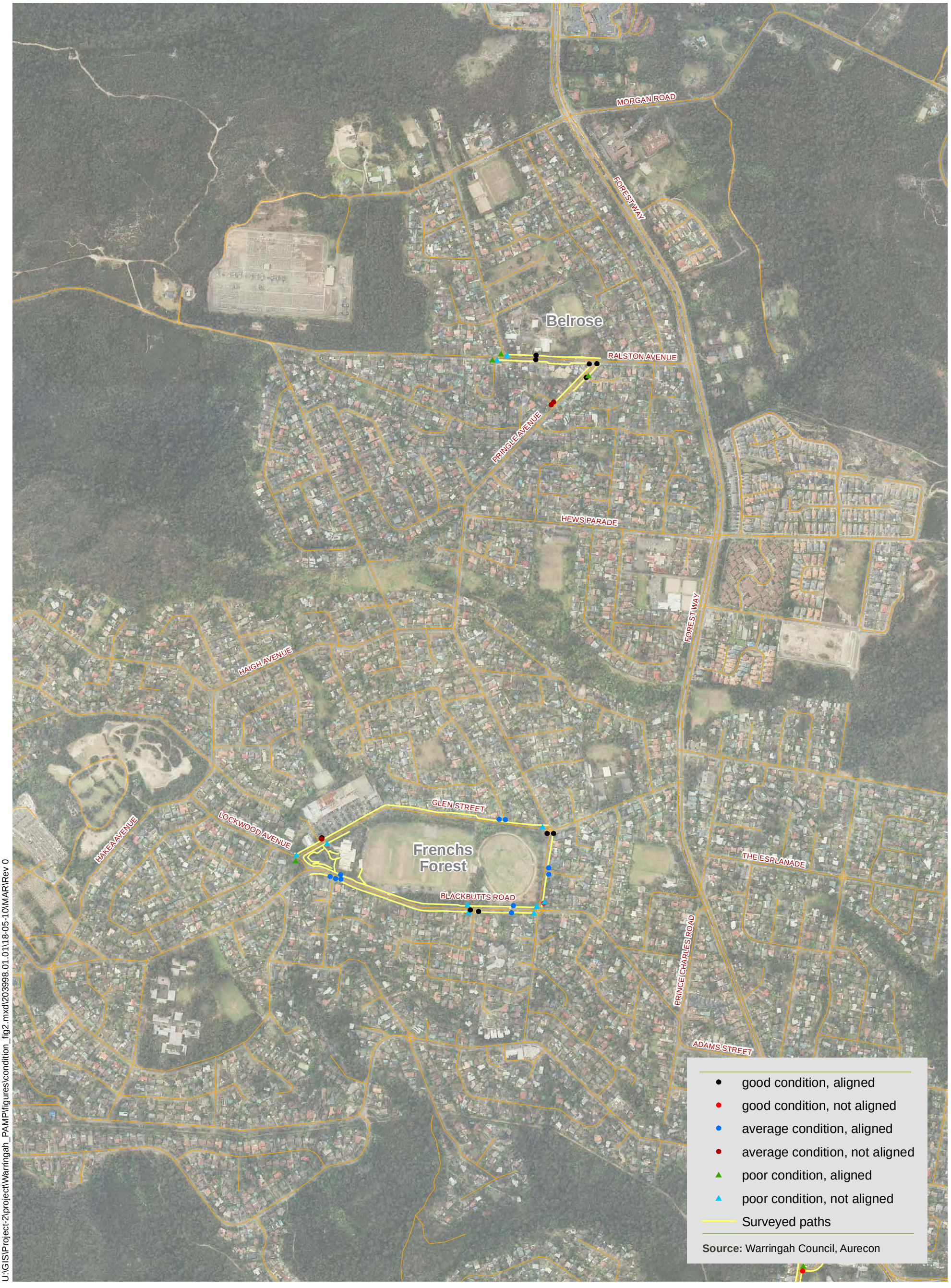
FIGURE 2A: Pedestrian accidents



Warringah **PAMP**

FIGURE 2B: Pedestrian crossing and path condition

aurecon



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SCALE 1:10,000 @ A3

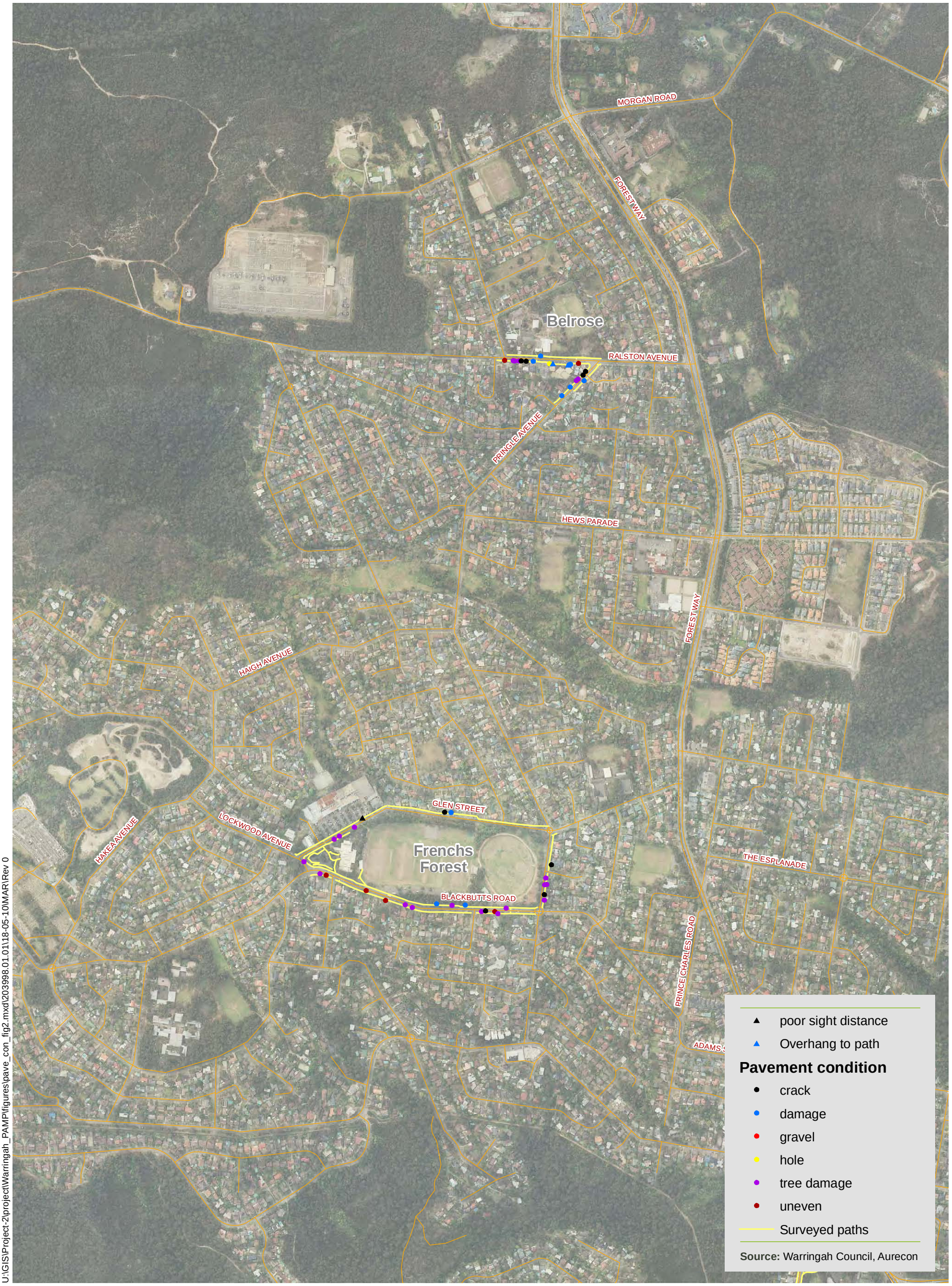
0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 2C: Crossing condition and alignment

aurecon



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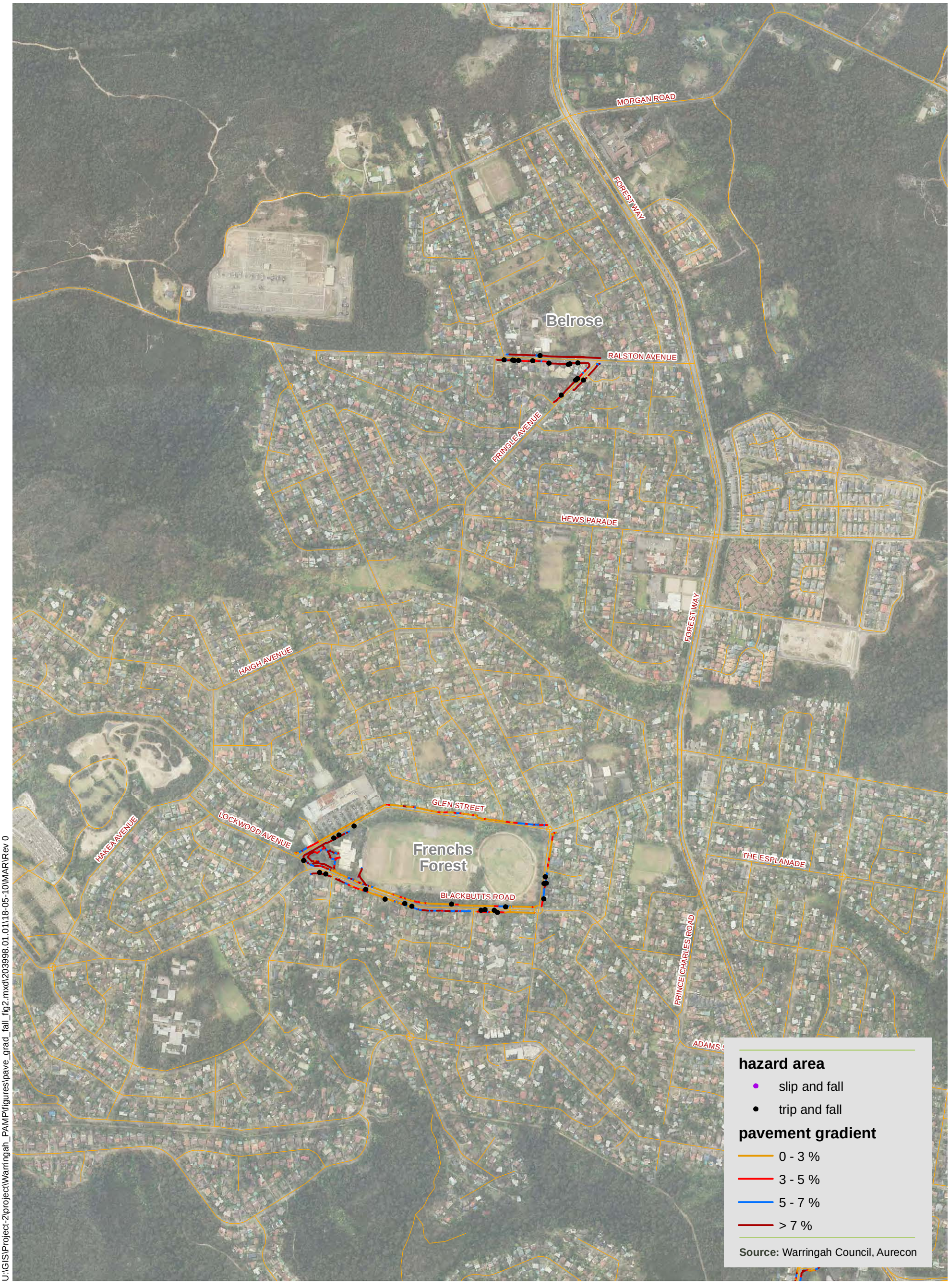
SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

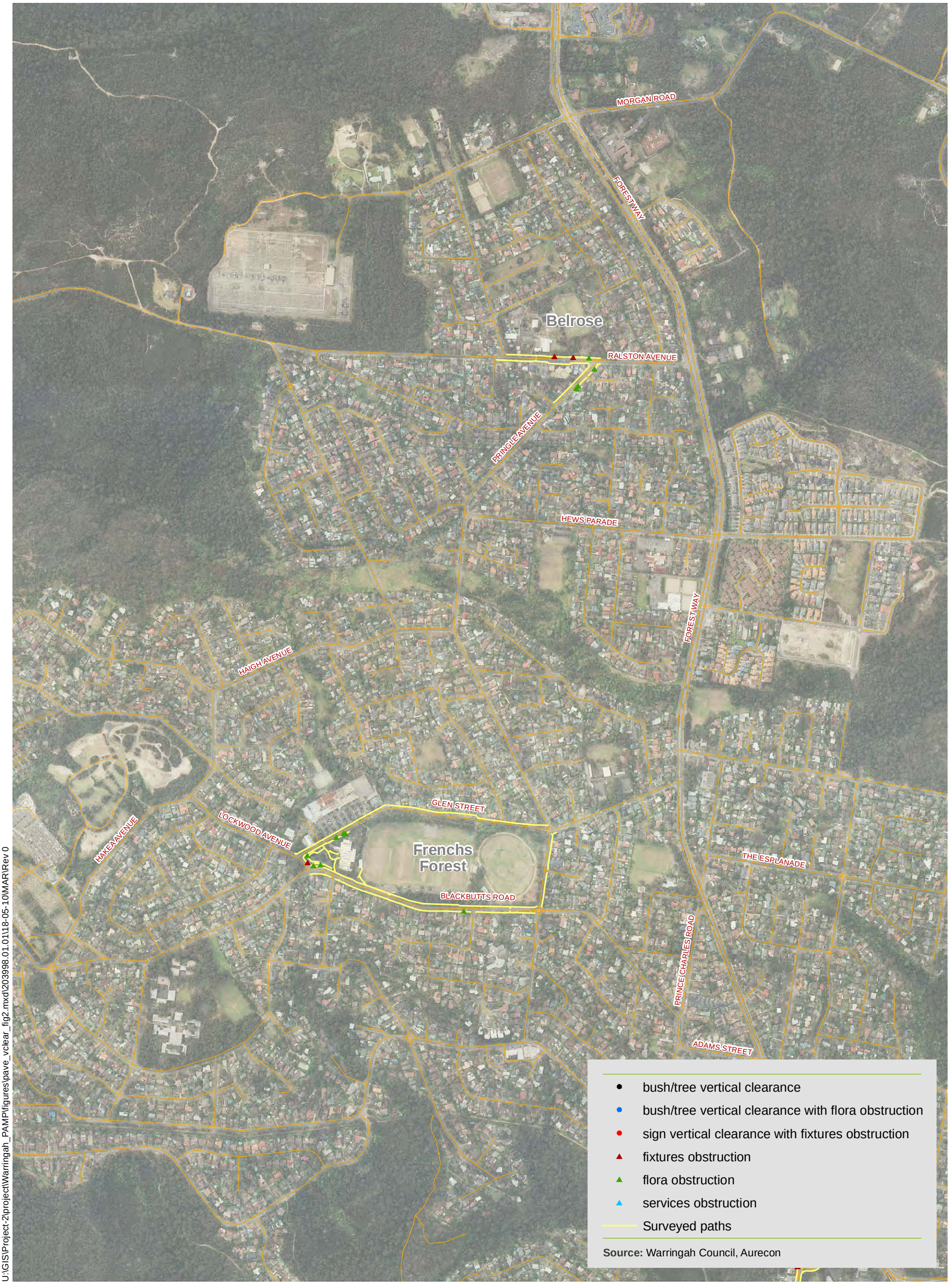
Warringah **PAMP**

FIGURE 2D: Pavement condition, sight distance and overhang



Warringah **PAMP**

FIGURE 2E: Pavement gradient and hazard areas



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SCALE 1:10,000 @ A3

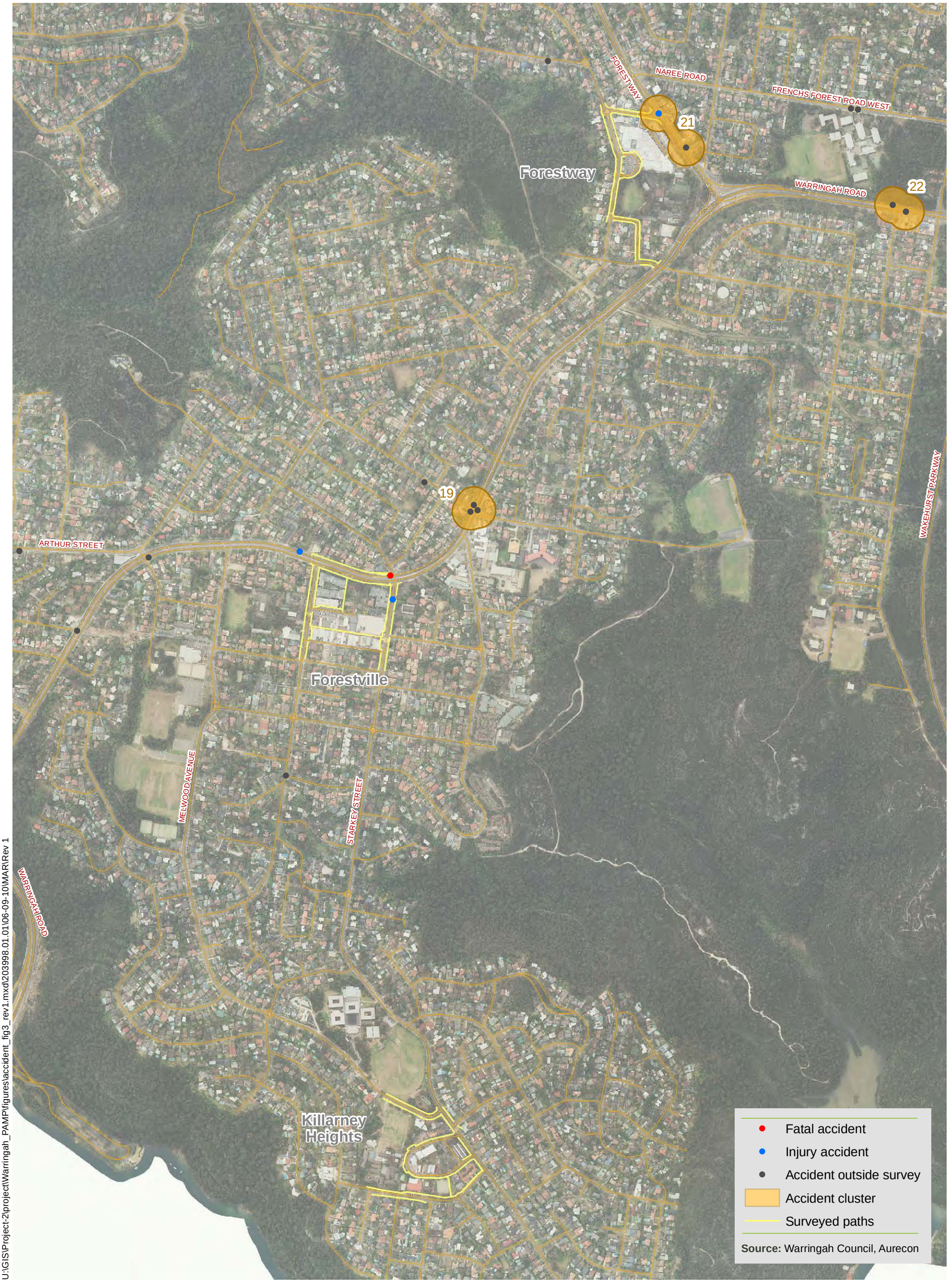
0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 2F: Vertical clearance and obstructions

aurecon



SCALE 1:10,000 @ A3

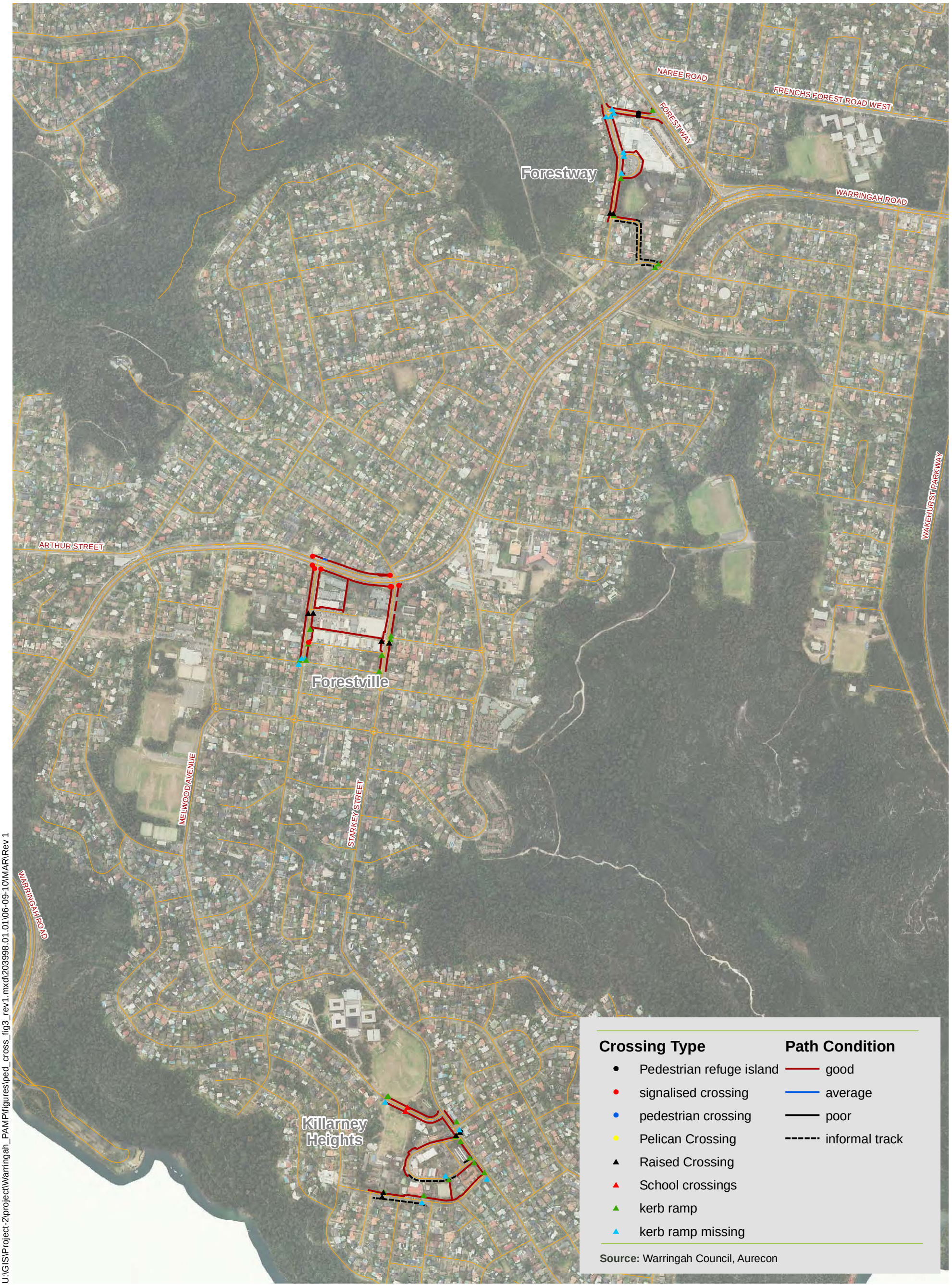
0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 3A: Pedestrian accidents

aurecon



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SCALE 1:10,000 @ A3

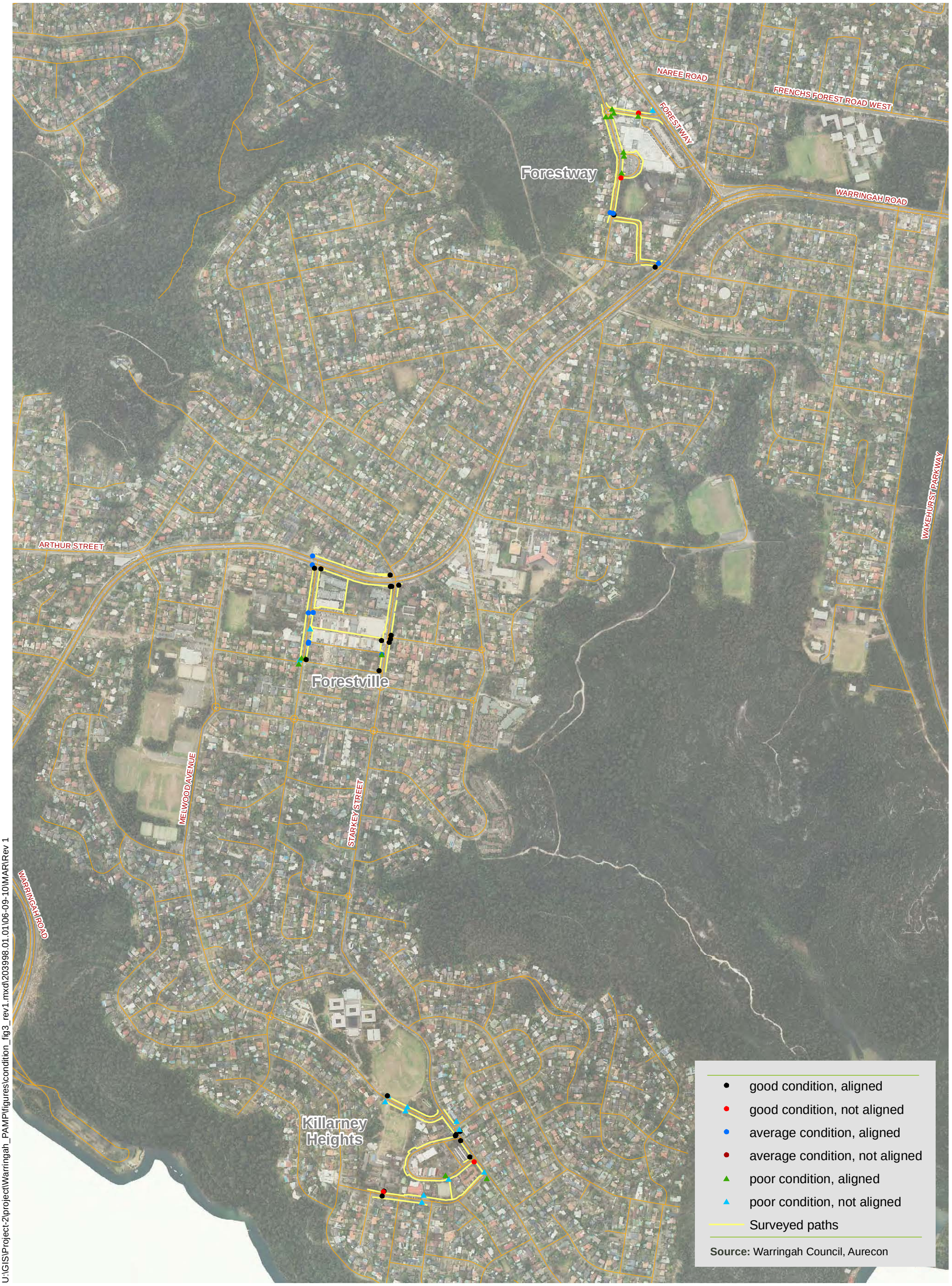
0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 3B: Pedestrian crossing and path condition

aurecon



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SCALE 1:10,000 @ A3

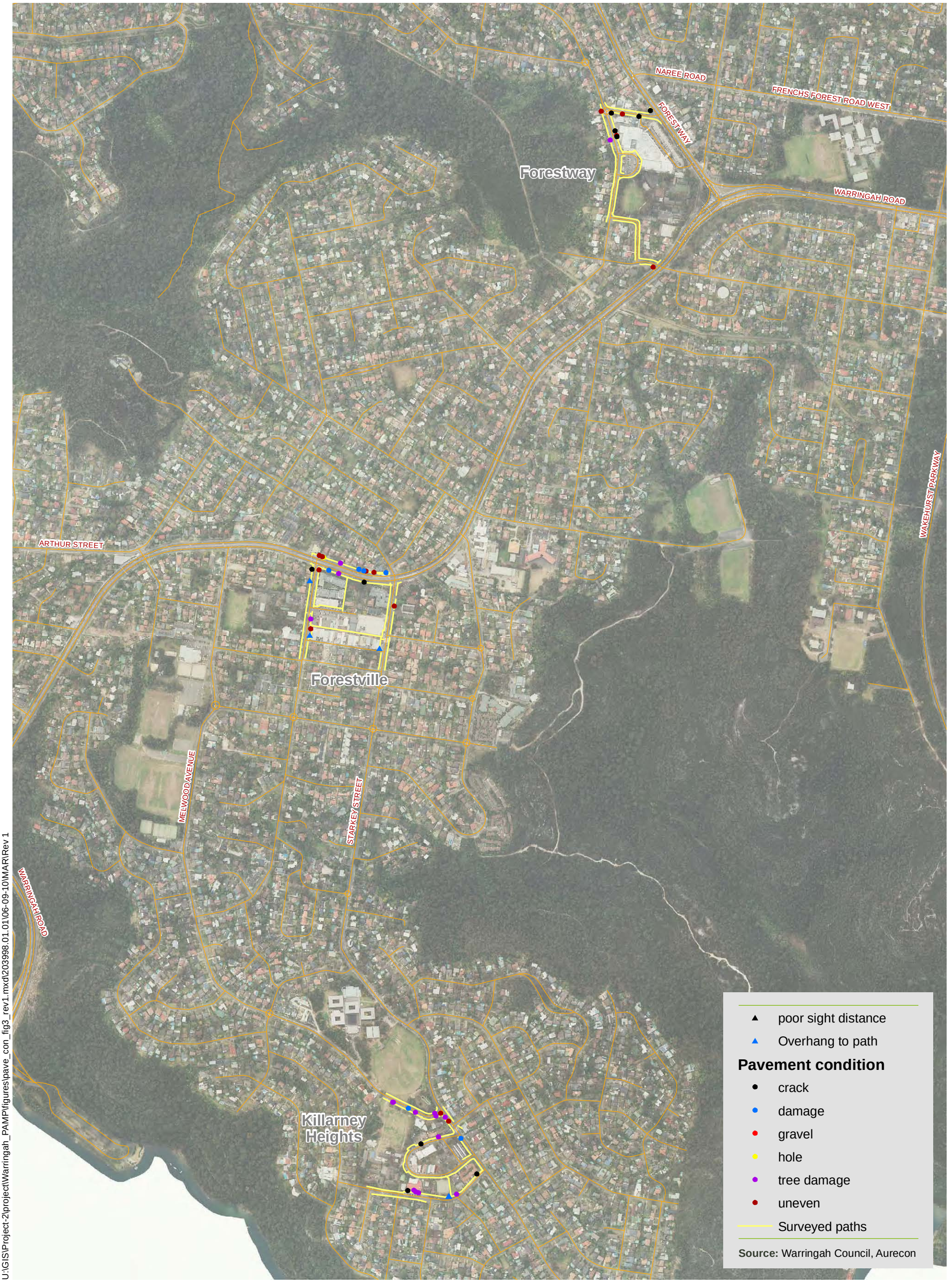
0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 3C: Crossing condition and alignment

aurecon



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SCALE 1:10,000 @ A3

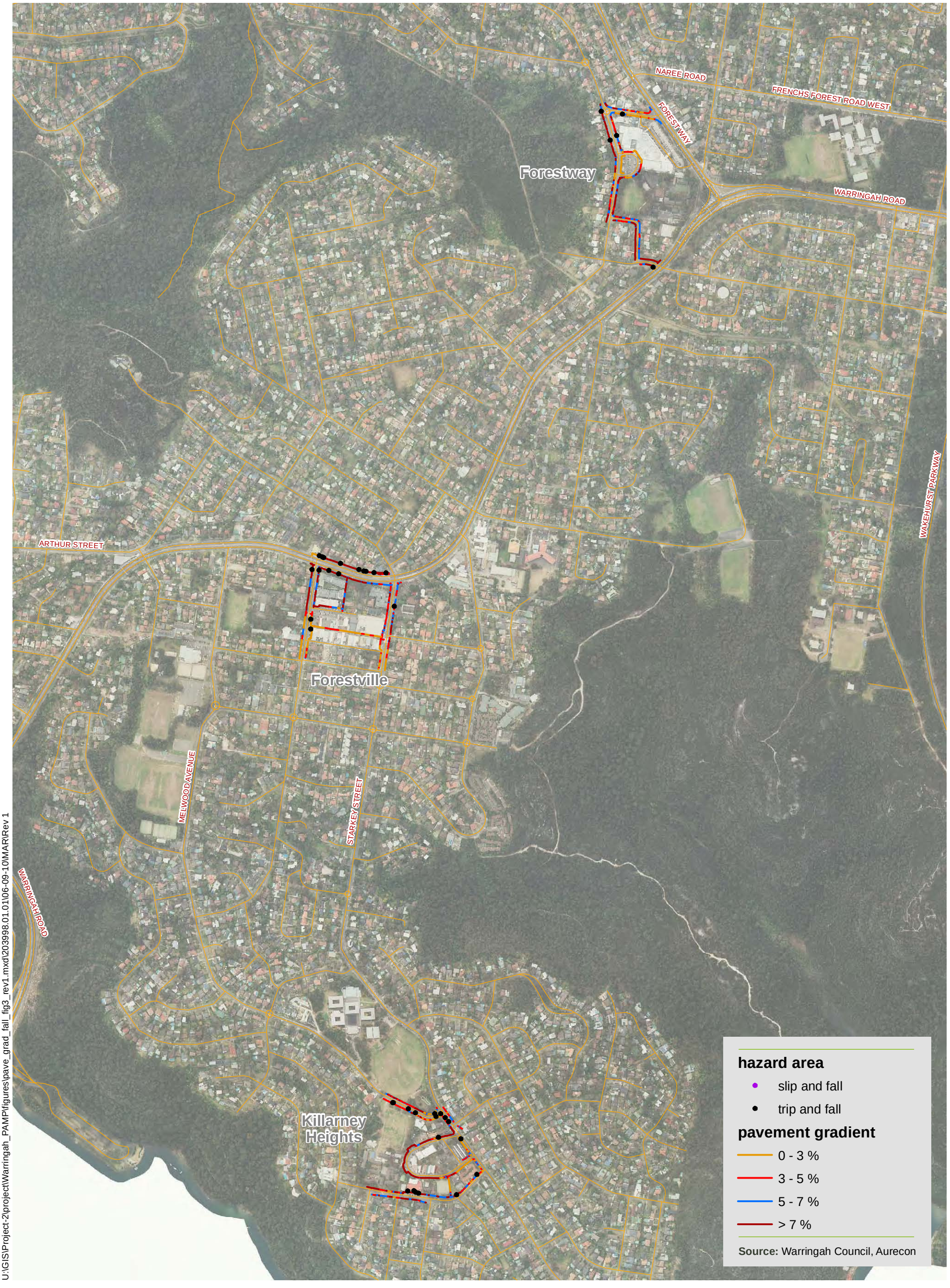
0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 3D: Pavement condition, sight distance and overhang

aurecon



SCALE 1:10,000 @ A3

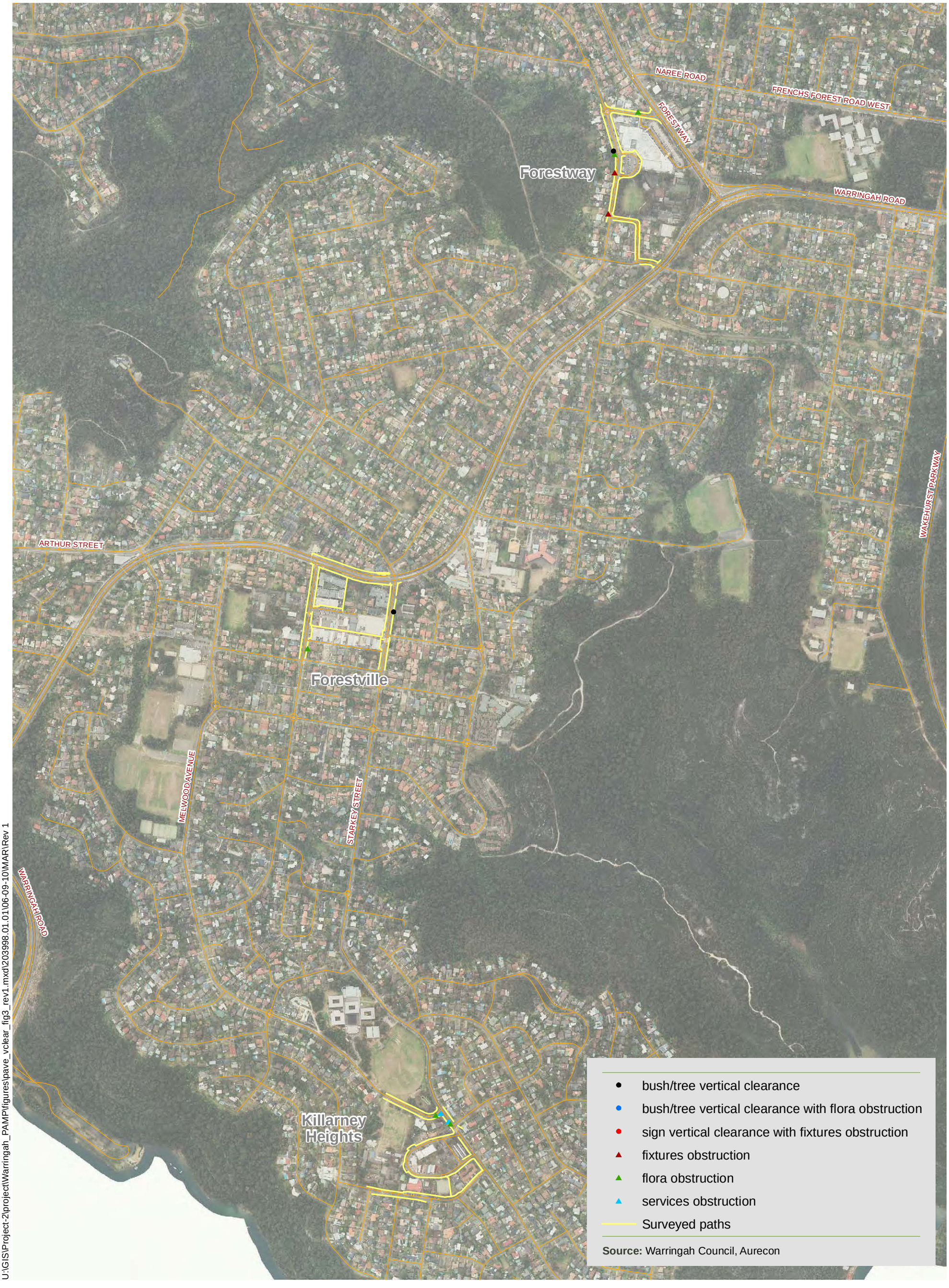
0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 3E: Pavement gradient and hazard areas

aurecon



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SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 3F: Vertical clearance and obstructions

aurecon

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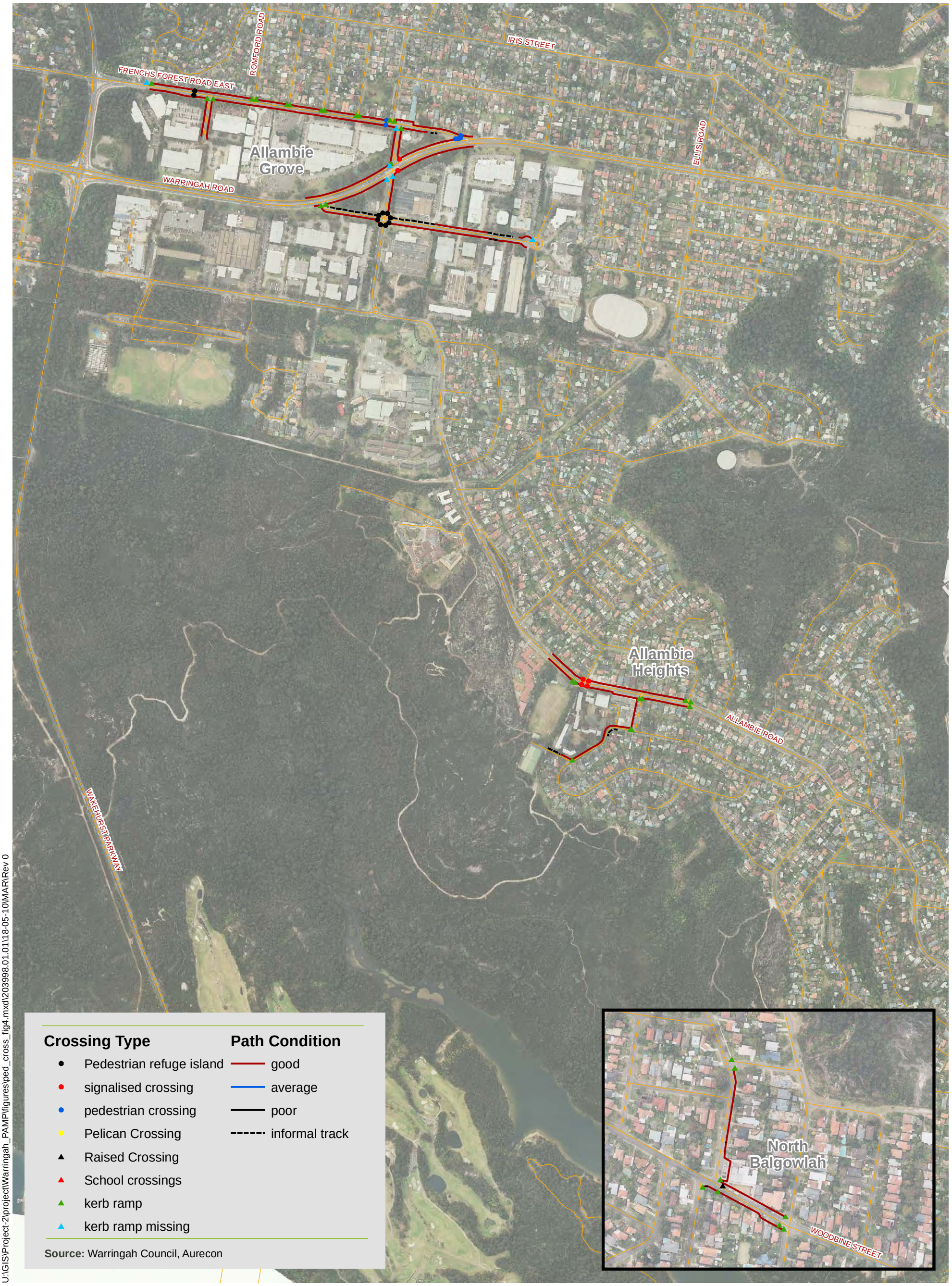
SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 4A: Pedestrian accidents



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SCALE 1:10,000 @ A3

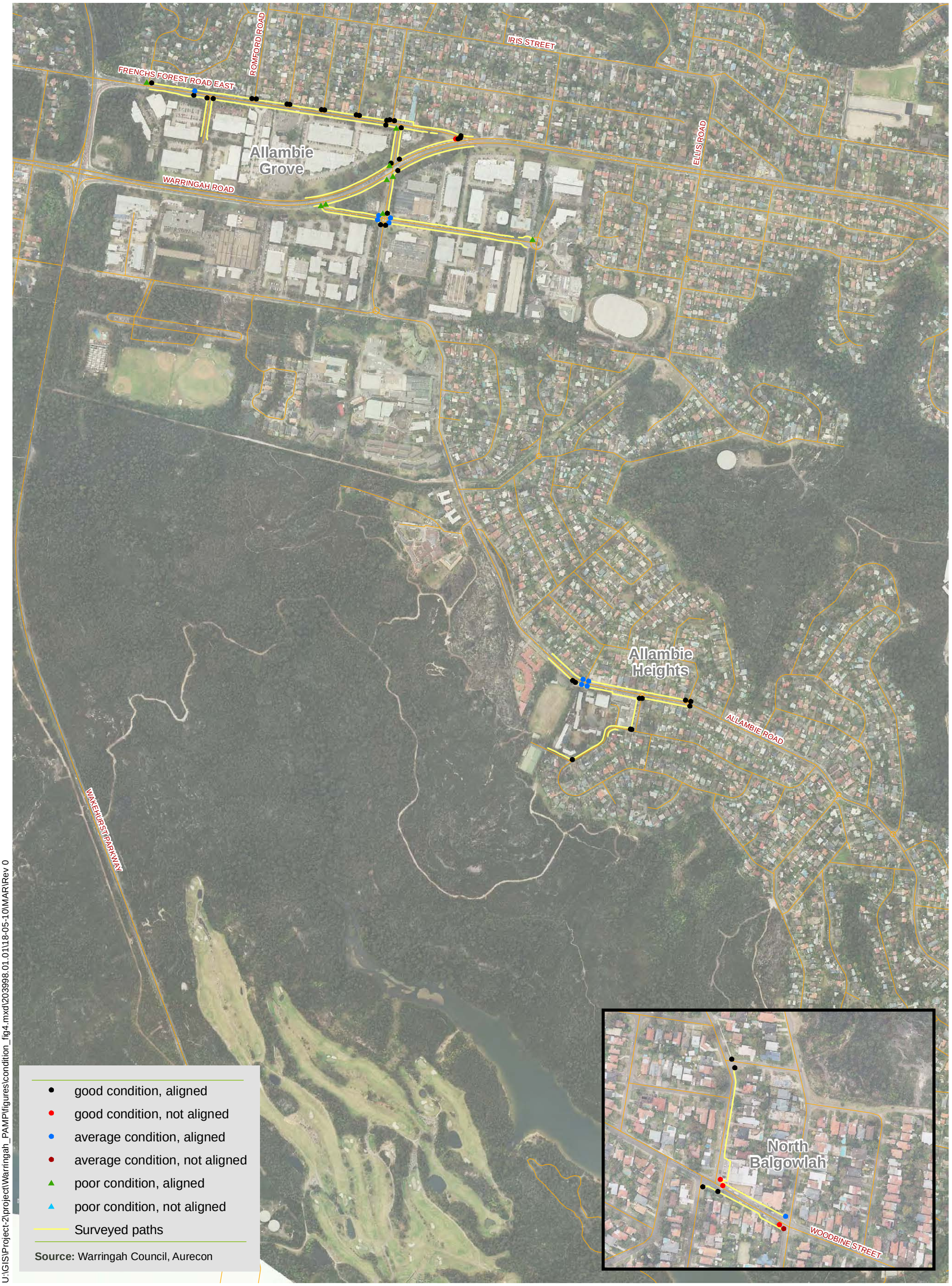
0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 4B: Pedestrian crossing and path condition

aurecon



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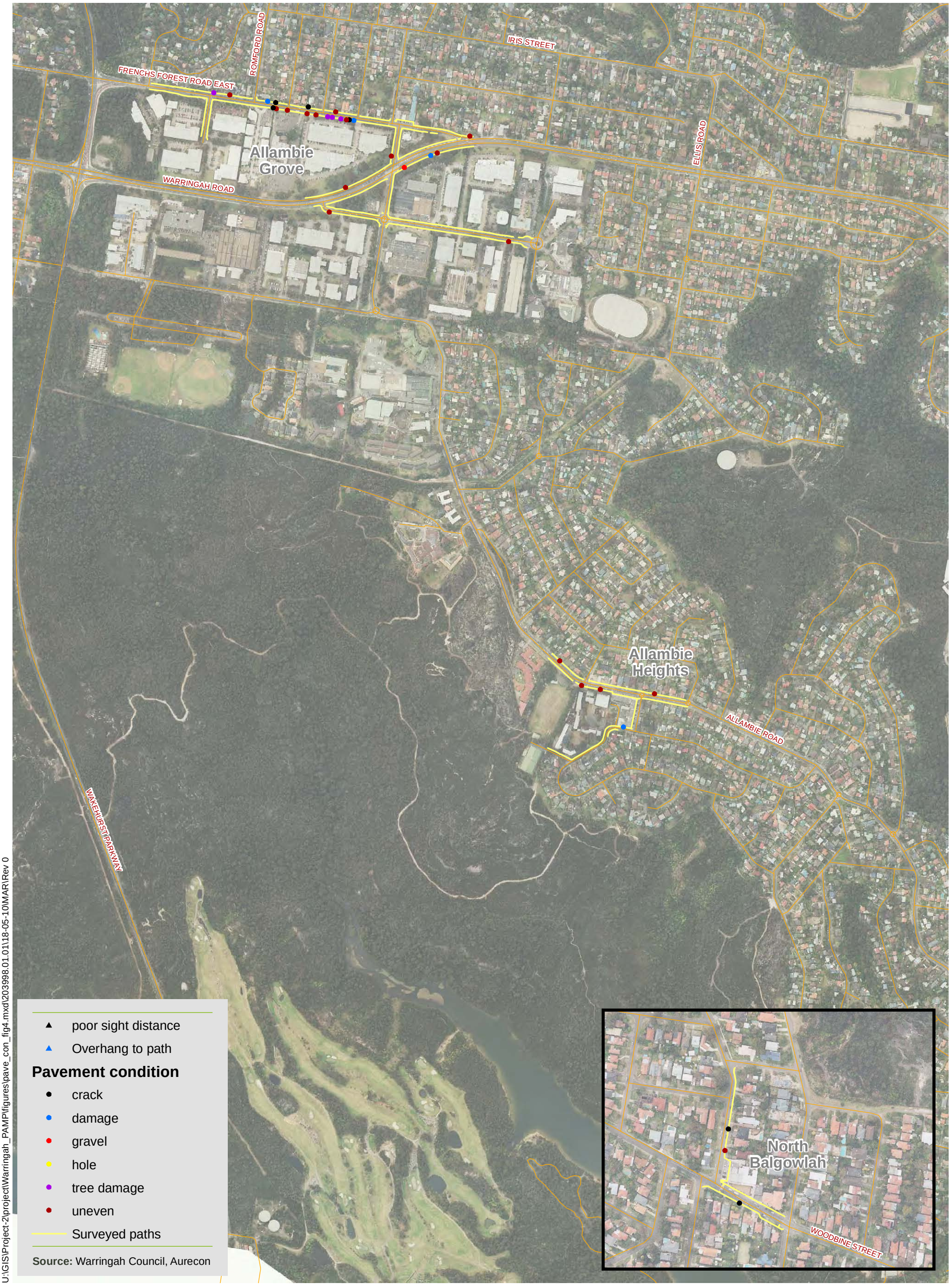
SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

Warringah **PAMP**

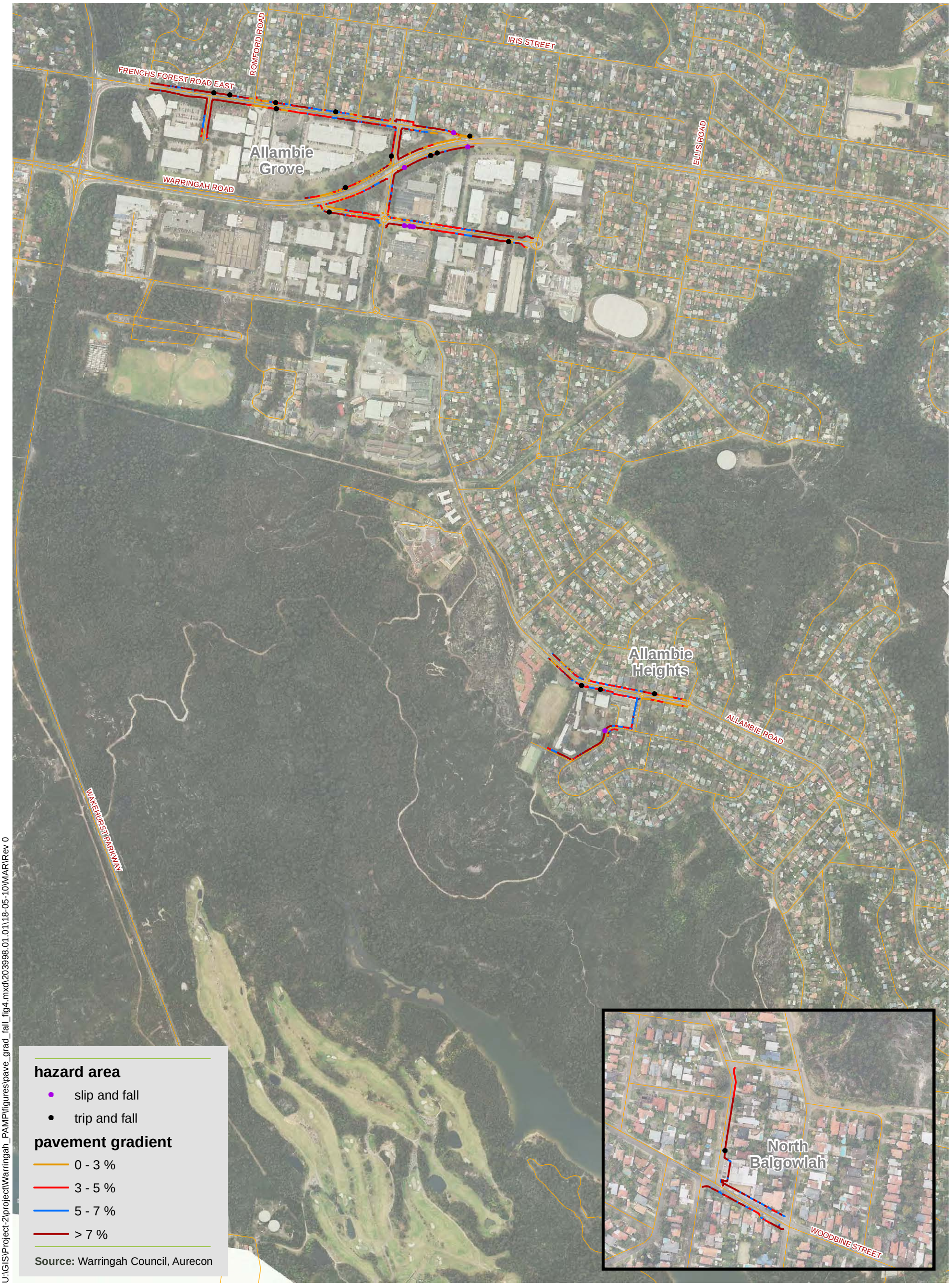
FIGURE 4C: Crossing condition and alignment



Warringah **PAMP**

FIGURE 4D: Pavement condition, sight distance and overhang

aurecon



SCALE 1:10,000 @ A3

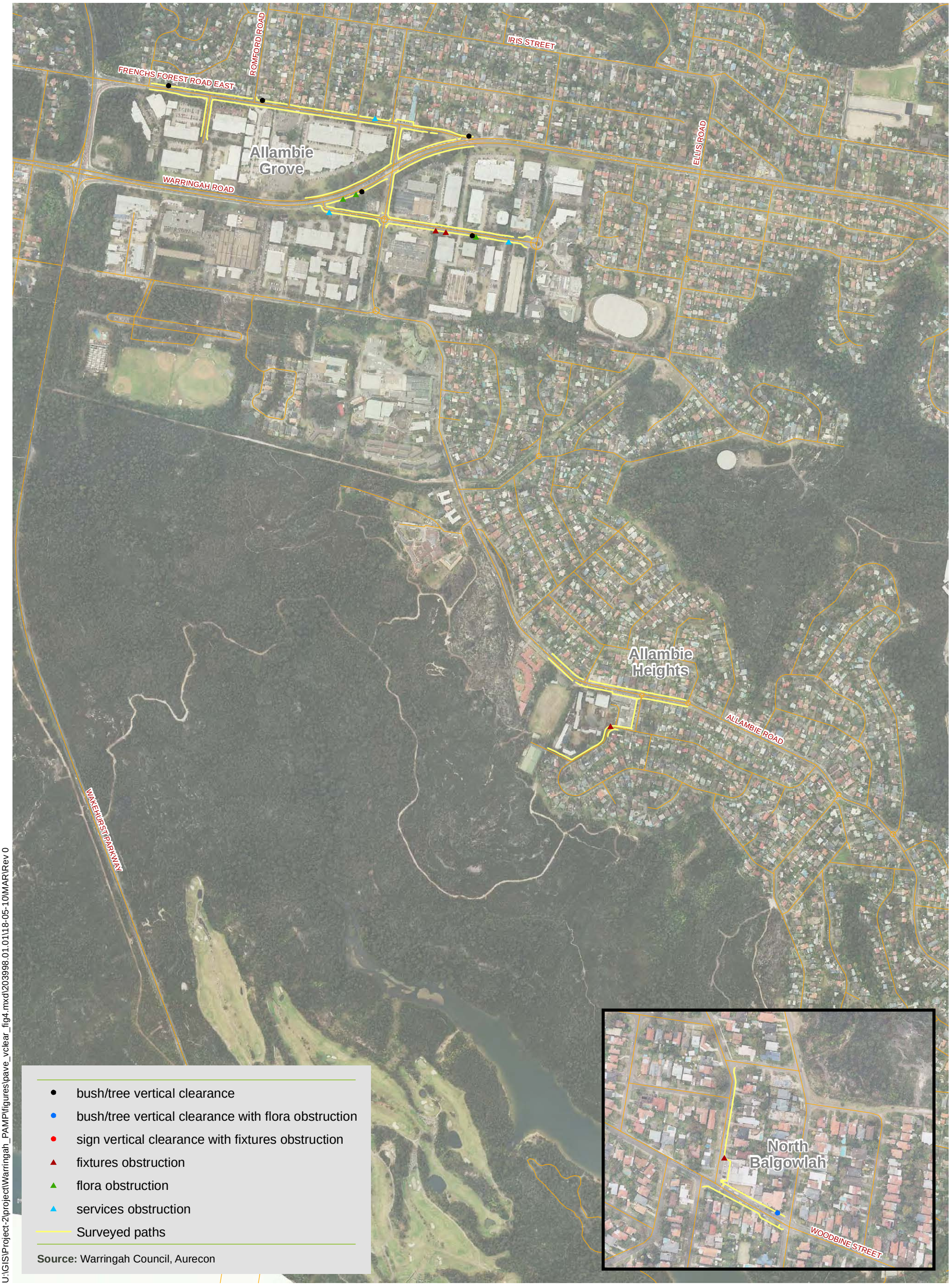
0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 4E: Pavement gradient and hazard areas

aurecon



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SCALE 1:10,000 @ A3

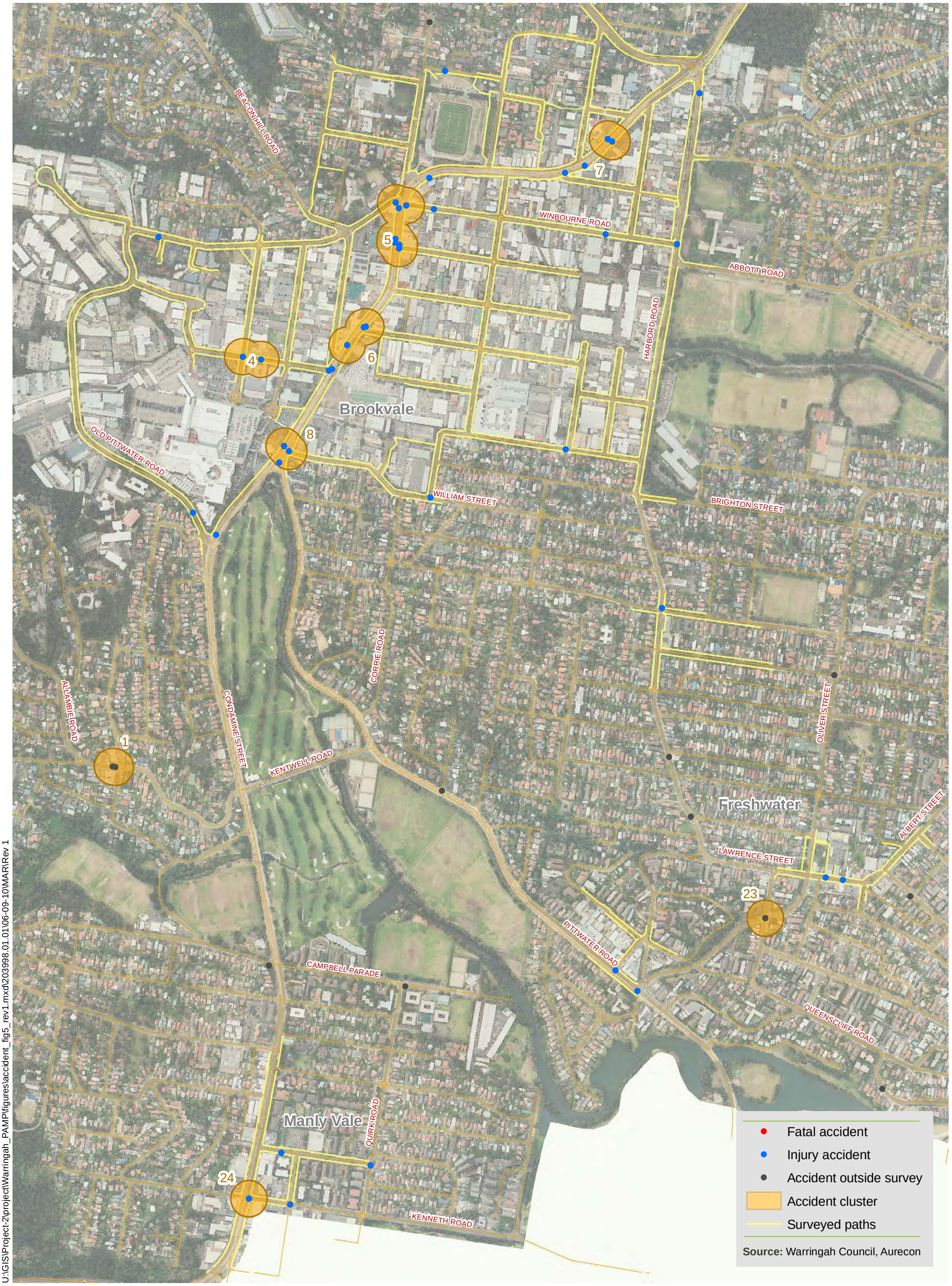
0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 4F: Vertical clearance and obstructions

aurecon



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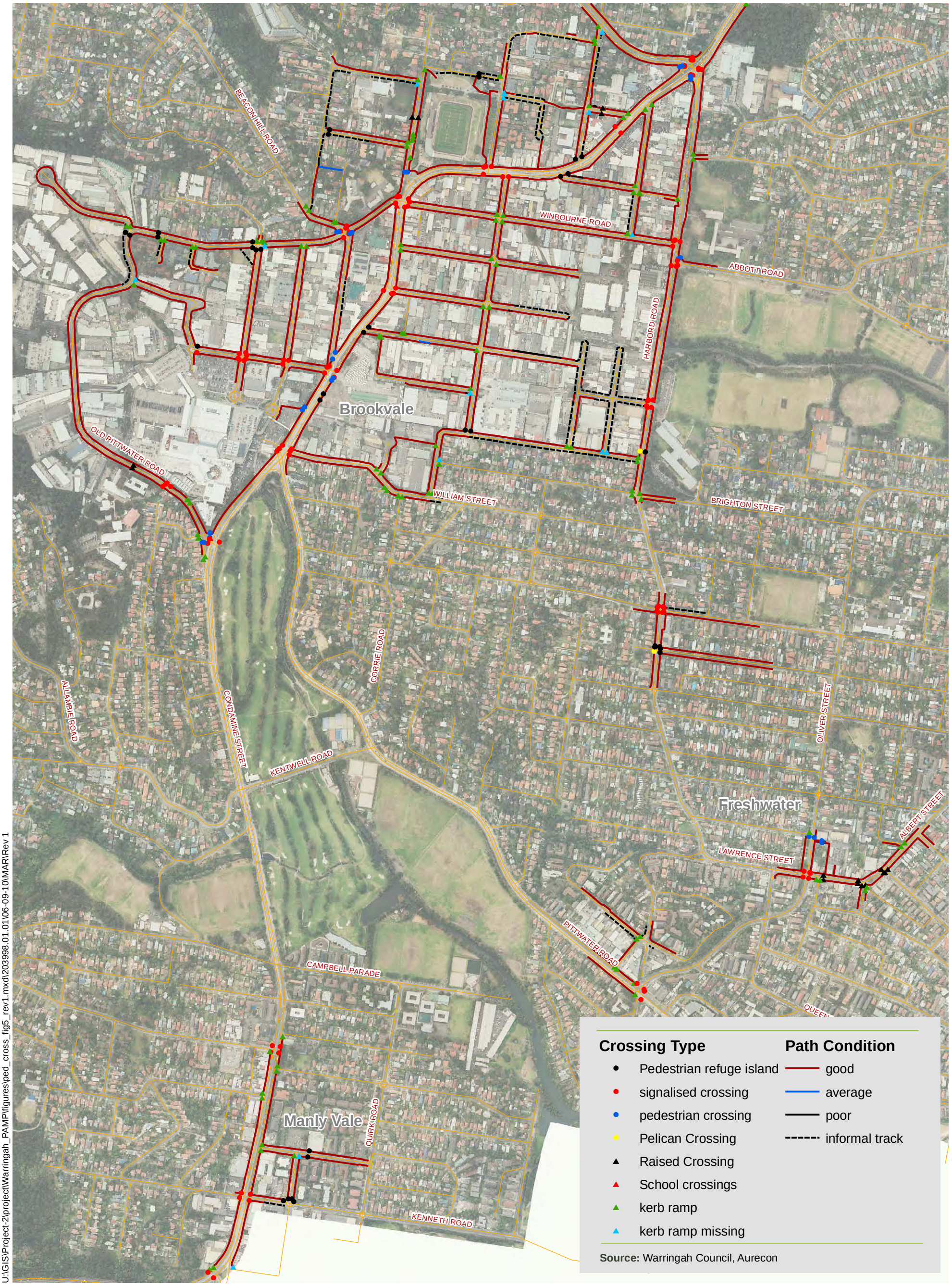
SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 5A: Pedestrian accidents



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SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 5B: Pedestrian crossing and path condition

aurecon

U:\GIS\Project-2\project\Warringah_PAMP\figures\condition_fig5_rev1.mxd\203998.01.01\06-09-10\MAR\Rev 1

SCALE 1:10,000 @ A3

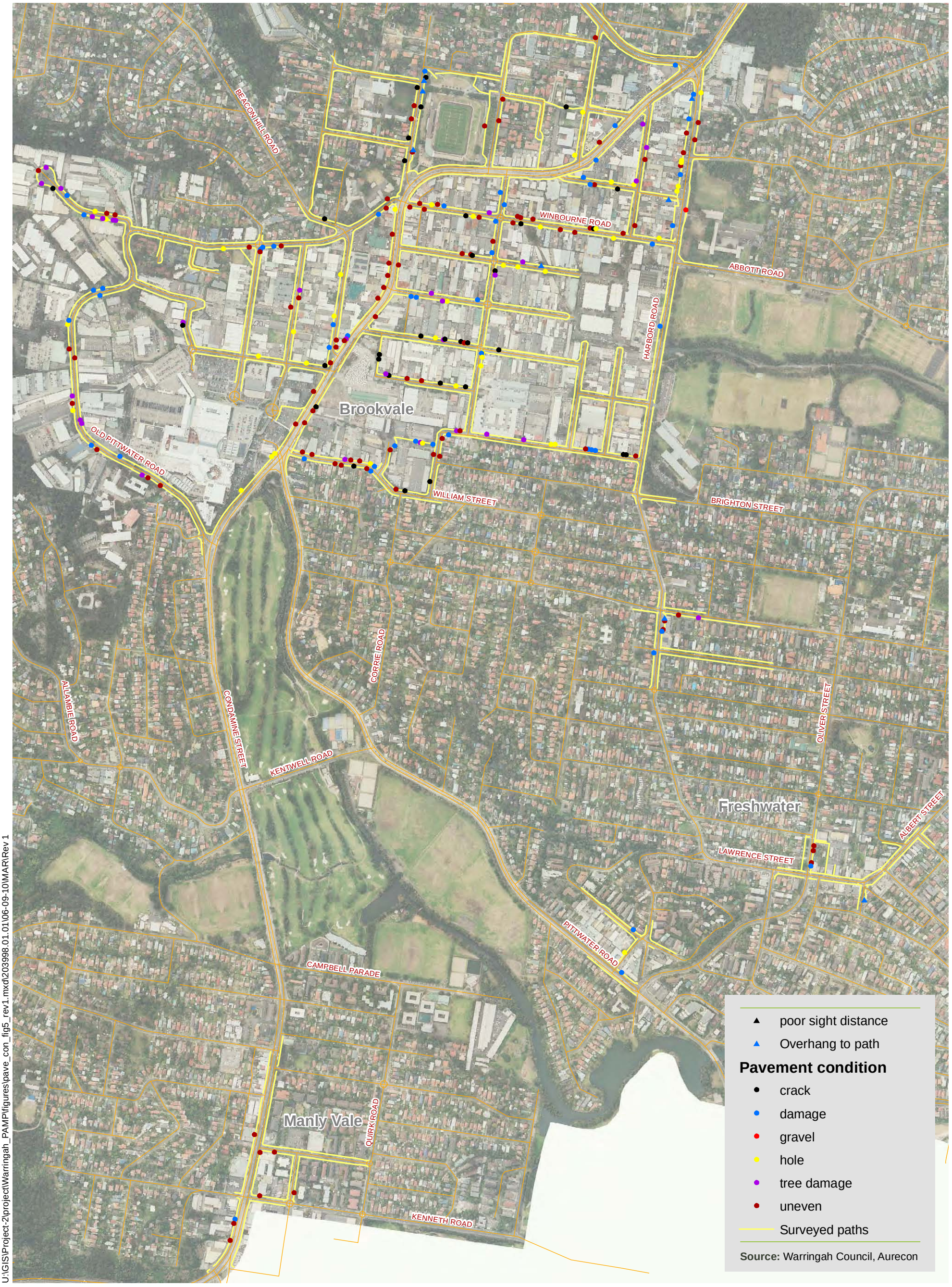
0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 5C: Crossing condition and alignment

aurecon



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SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 5D: Pavement condition, sight distance and overhang

aurecon

U:\GIS\Project-2\project\Warringah_PAMP\figures\pave_grad_fall_fig5_rev1.mxd\203998.01.01\06-09-10\MAR\Rev 1

SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 5E: Pavement gradient and hazard areas

aurecon

U:\GIS\Project-2\project\Warringah_PAMP\figures\pave_vclear_fig5_rev1.mxd\203998.01.01\06-09-10\MAR\Rev 1

SCALE 1:10,000 @ A3

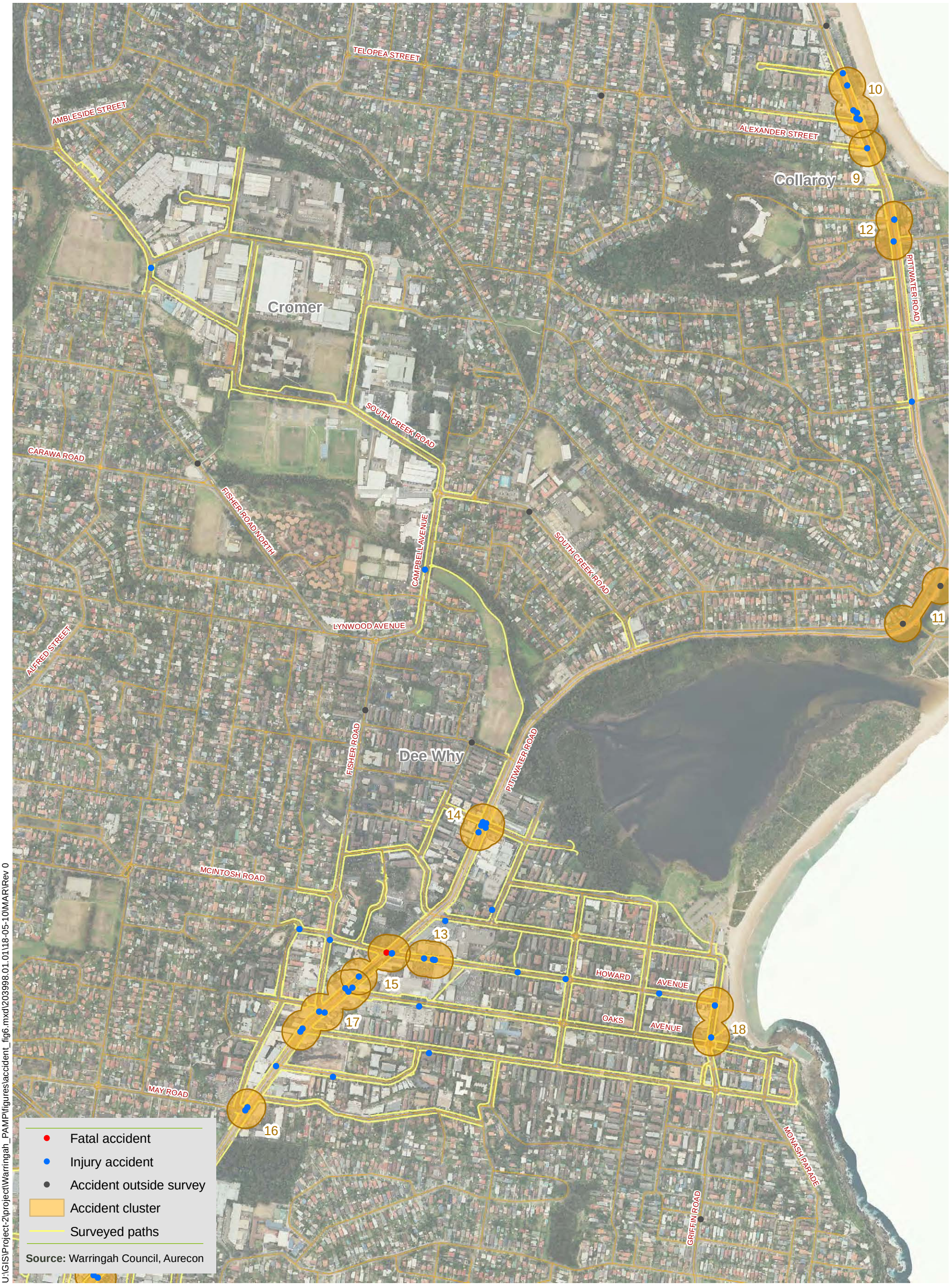
0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 5F: Vertical clearance and obstructions

aurecon



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SCALE 1:10,000 @ A3

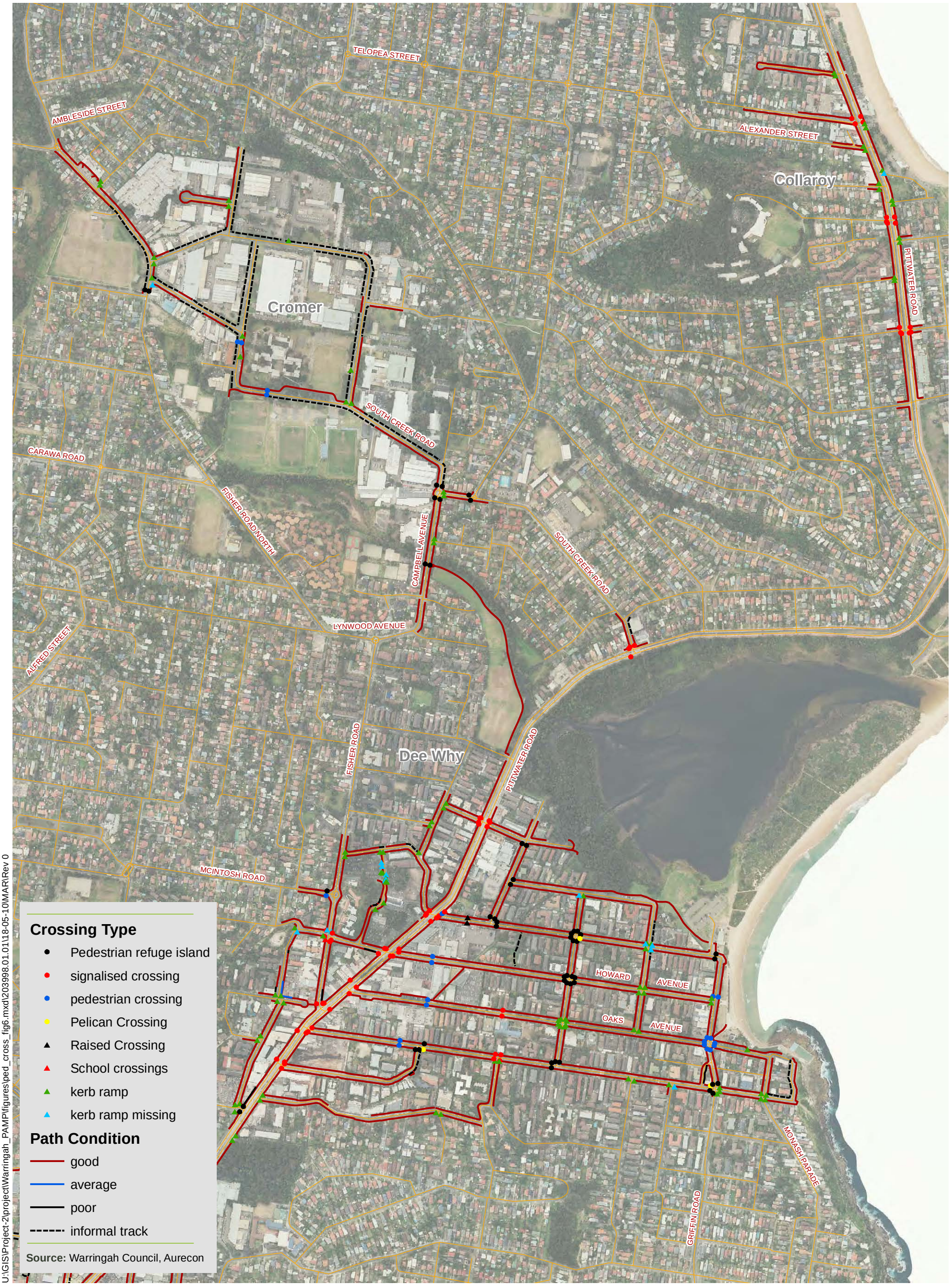
0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 6A: Pedestrian accidents

aurecon



SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 6B: Pedestrian crossing and path condition

aurecon

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SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 6C: Crossing condition and alignment

aurecon

U:\GIS\Project-2\project\Warringah_PAMP\figures\pave_con_fig6.mxd\203998.01.01\18-05-10\MAR\Rev 0

SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 6D: Pavement condition, sight distance and overhang

aurecon

U:\GIS\Project-2\project\Warringah_PAMP\figures\pave_grad_fall_fig6.mxd\203998.01.01\18-05-10\MAR\Rev 0

SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 6E: Pavement gradient and hazard areas

aurecon

U:\GIS\Project-2\project\Warringah_PAMP\figures\pave_vclear_fig6.mxd\203998.01.01\18-05-10\MAR\Rev 0

SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 6F: Vertical clearance and obstructions

aurecon

SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 7A: Pedestrian accidents

Warringah **PAMP**

FIGURE 7B: Pedestrian crossing and path condition

aurecon

U:\GIS\Project-2\project\Warringah_PAMP\figures\condition_fig7.mxd\203998.01.01\18-05-10\MAR\Rev 0

SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 7C: Crossing condition and alignment

Warringah **PAMP**

FIGURE 7D: Pavement condition, sight distance and overhang

Warringah **PAMP**

FIGURE 7E: Pavement gradient and hazard areas

aurecon

U:\GIS\Project-2\project\Warringah_PAMP\figures\pave_vclear_fig7.mxd\203998.01.01\18-05-10\MAR\Rev 0

SCALE 1:10,000 @ A3

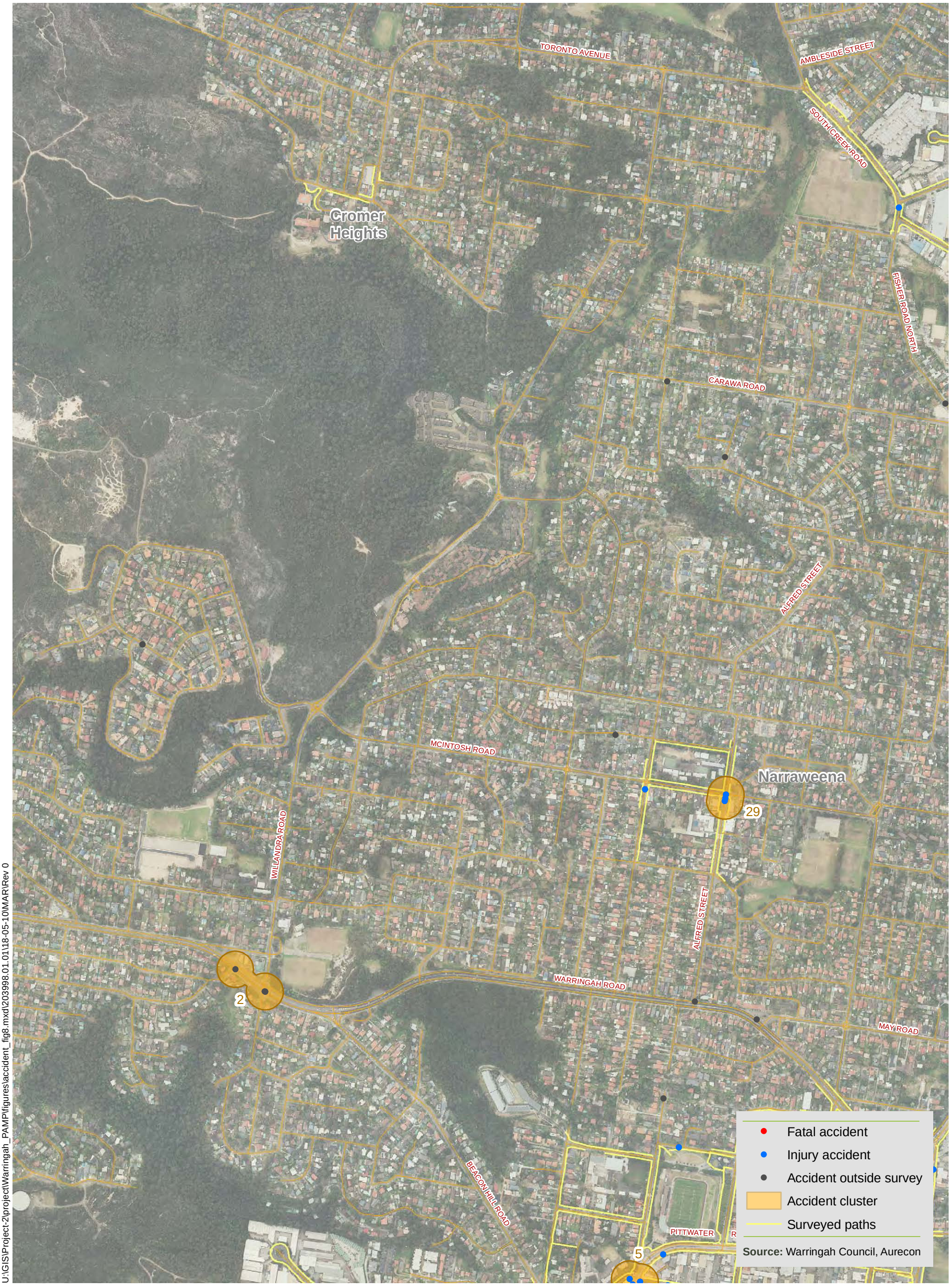
0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 7F: Vertical clearance and obstructions

aurecon



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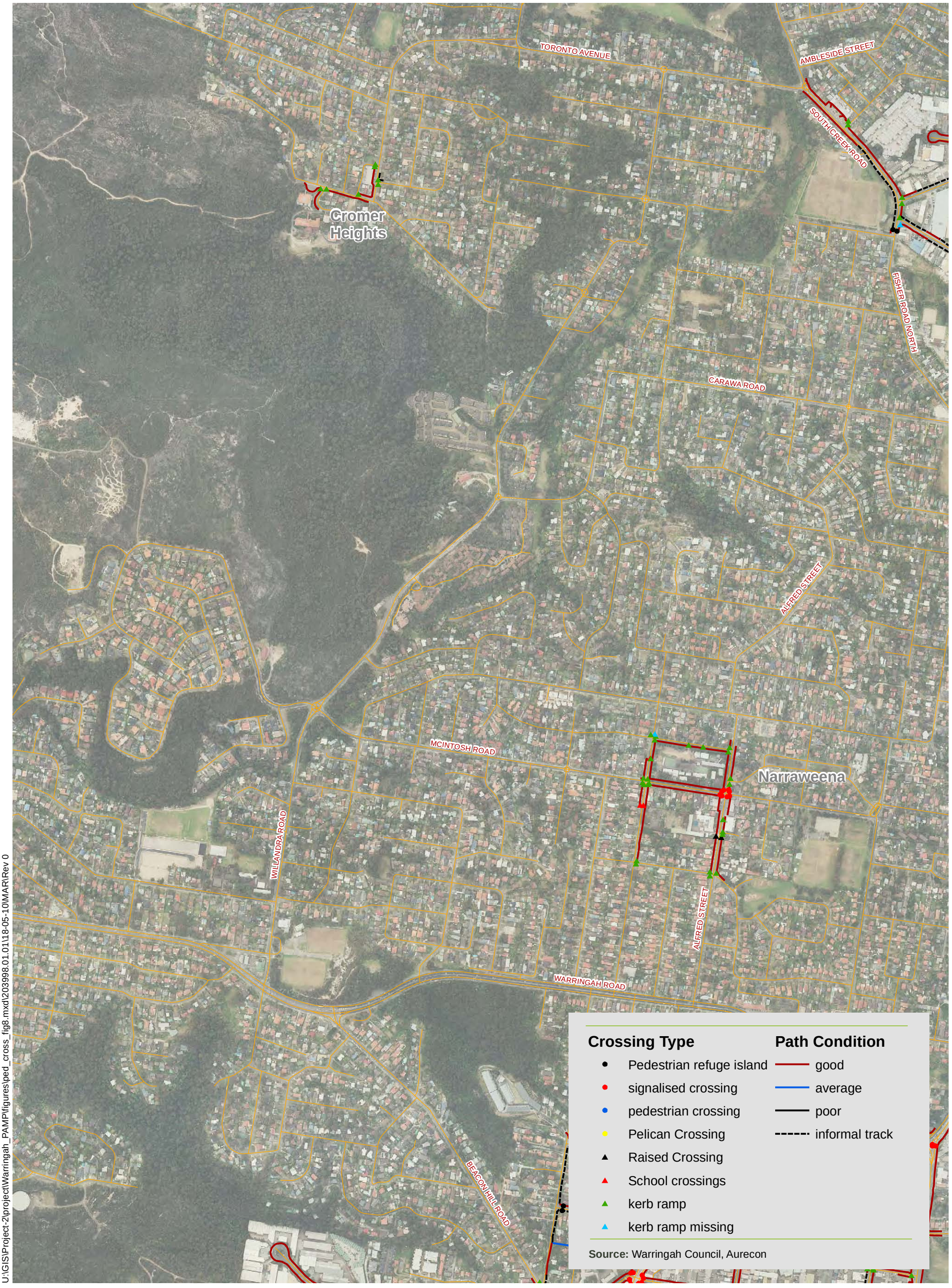
SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 8A: Pedestrian accidents



U:\GIS\Project-2\project\Warringah_PAMP\figures\ped_cross_fig8.mxd\203998.01.01\18-05-10\MAR\Rev 0

SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 8B: Pedestrian crossing and path condition

U:\GIS\Project-2\project\Warringah_PAMP\figures\condition_fig8.mxd\203998.01.01\18-05-10\MAR\Rev 0

SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 8C: Crossing condition and alignment

U:\GIS\Project-2\project\Warringah_PAMP\figures\pave_con_fig8.mxd\203998.01.01\18-05-10\MAR\Rev 0

SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 8D: Pavement condition, sight distance and overhang

U:\GIS\Project-2\project\Warringah_PAMP\figures\pave_grad_fall_fig8.mxd\203998.01.01\18-05-10\MAR\Rev 0

SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 8E: Pavement gradient and hazard areas

U:\GIS\Project-2\project\Warringah_PAMP\figures\pave_vclear_fig8.mxd\203998.01.01\18-05-10\MAR\Rev 0

SCALE 1:10,000 @ A3

0 250 500 m

Projection: MGA

Warringah **PAMP**

FIGURE 8F: Vertical clearance and obstructions

Appendix B
Pedestrian Crash Cluster Details

ID No.	Nearest Intersection to the cluster	Location	Suburb	Number of Crashes within the clusters	Comments
1	Kentwell Road/Orara Road intersection	10m-20m west of the intersection	Allambie Heights	2	• Marked pedestrian crossing is located west of Kentwell Road/ Orara Road roundabout. • One (1) crash occurred at the intersection.
2	Warringah Road/Willandra Road	From the intersection to the 100m west.	Beacon Hill	3	• All crashes occurred involved with the vehicles travelling westbound. • A total of 2 crashes occurred at the intersection.
3	Forest Way/Glen Street	From the intersection to 100m south	Belrose	2	• No signalised pedestrian crossing is provided for the southern leg of the intersection. • One (1) crash occurred at the intersection.
4	Cross Street/Green Street intersection	From the intersection to 50m east	Brookvale	2	• One (1) crash occurred at the intersection. • This intersection provides access to Warringah Shopping Mall.
5	Pittwater Road with Chard Road Winbourne St and Old PittwaterRd	From Pittwater Rd/Chard Rd to Pittwater Rd/Winbourne St/Old PittwaterRd	Brookvale	6	• Three (3) crashes occurred at the intersections. • No marked crossing is provided at the Pittwater Road/Chard Road intersection.
6	Pittwater Road/Orchard Road intersection	From 15m north of the intersection to 50m south of the intersection	Brookvale	3	• One (1) crash occurred at the intersection. • No marked crossing is provided at the intersection.
7	Pittwater Road/Victor Road	100m north of the intersection	Brookvale	2	• Both crashes occurred in 2005. • Crashes occurred in the vicinity of the signalised midblock crossing.
8	Pittwater Rd/William Rd	At the intersection	Brookvale	3	• Two (2) crashes occurred when the street lights were on.
9	Pittwater Rd/Alexander Stt	At the intersection	Collaroy	2	• No marked crossing is provided at the intersection.
10	Pittwater Rd/Collaroy St	From the intersection to 100m north	Collaroy	5	• Two (2) crashes occurred at the intersection. • Four (4) crashes occurred during night time.
11	Pittwater Road/Hay Street	100m-240m south of the intersection	Collaroy	2	• No marked crossing is provided at the intersection. • A Kiosk is located approx. 200m south of the intersection.
12	Pittwater Rd/Homestead St	From the intersection to 60m south	Collaroy	3	• Two (2) crashes occurred at the intersection.
13	Pittwater Rd/Howard St	90m-120m east of the intersection	Dee Why	3	• A marked crossing is provided approx 100m east of the intersection.
14	Pittwater Rd/Hawkesbury Ave	From the intersection to 20m south	Dee Why	7	• six (6) crashes occurred at the intersection.
15	Pittwater Rd/Howard St/St David Ave	From the intersection to 100m south	Dee Why	6	• Five (5) crashes occurred at the intersection. • One (1) fatal accident occurred at this intersection.
16	Pittwater Rd/May St	At the intersection	Dee Why	2	• All the crashes occurred involved with the vehicles travelling northbound.

ID No.	Nearest Intersection to the cluster	Location	Suburb	Number of Crashes within the clusters	Comments
17	Pittwater Rd with Oaks St, Fisher St and Pacific St	From Pittwater Rd/ Oaks St to Pittwater Road/Pacific St	Dee Why	8	• Majority of the crashes occurred involved with the vehicles travelling southbound. • All crashes occurred at the intersections.
18	The Strand/Howard St	From the intersection to 90m south	Dee Why	3	• Two (2) crashes occurred at the intersection when street lights were on. • A marked pedestrian crossing is provided for the northern leg of the intersection. However, no marked pedestrian crossing is available for the southern leg.
19	Warringah Rd/Brown St/Currie St	From the intersection to 20m south	Forestville	3	• Two (2) crashes occurred at the intersection.
20	Blackbutts Rd/Pringle Ave intersection	20m-50m east of the intersection	Frenchs Forest	2	• A marked pedestrian crossing is provided approx. 10m east of Blackbutts Road/Pringle Avenue intersection.
21	Forest Way/Russell Ave	From the intersection to 120m south	Frenchs Forest	2	• One (1) crash occurred at the intersection. • No pedestrian crossing is provided at the intersection and midblock signalised crossing is provided approx. 120m south of the intersection.
22	Warringah Rd/Hilmer St	From the intersection to 30m east	Frenchs Forest	2	• One (1) crash occurred at the intersection. • No signalised crossing is provided for eastern leg of the intersection.
23	Oliver St/Cavill St	At the intersection	Freshwater	2	• Both crashes occurred during night time. • No pedestrian crossing is provided for the northern leg of this signalised intersection.
24	Condamine St/Kenneth Rd	At the intersection	Manly Vale	2	• Both crashes occurred between vehicles travelling south and pedestrians walking west. • No pedestrian crossing is provided for the southern leg of this signalised intersection.
25	Pittwater Road/Devitt Street	22m-50m north of the intersection	Narrabeen	2	• Both crashes are fatal crashes and occurred on Friday.. • Both crashes occurred between vehicles travelling north and pedestrians walking west.
26	Pittwater Road/Mactier Street	At the intersection	Narrabeen	2	• No pedestrian crossing is provided for the eastern and southern legs of this signalised intersection.
27	Pittwater Rd/Robertson St	From the intersection to 100m north	Narrabeen	3	• Two (2) crashes occurred at the intersection.
28	Pittwater Rd/Waterloo St	From the intersection to 110m south	Narrabeen	8	• Three (3) crashes occurred at the intersection. • Majority of the crashes occurred between vehicles travelling north and pedestrian travelling east. • One (1) fatal crash occurred 50m south of the intersection.
29	Alfred St/McIntosh Rd	From the intersection to 20m south	Narraweena	3	• Two (2) crashes occurred at the intersection.

Appendix C
Stakeholder and Community Comments

Appendix C-1 – Focus Group Meeting Comments

Appendix C-2 – Public Information Stall Comments

Appendix C-3 – School Consultation Comments

Appendix C-1
Focus Group Meeting Comments

No.	issue code	location					comment	person	Session (D/E)
		main st	*cross st 1*	*cross st 2*	*other*	*PAMP area*			
1	SC						timing of signalised ped x'g too short for pedestrians.		D
2	KU						kerb ramps direct scooters into oncoming traffic.		D
3	O	Frenchs Forest Rd E	Warringah Rd	Patanga Rd	Skyline shops	Allambie Grove	on scooter waiting behind parked cars to cross road, can't be seen.	J, D	D
4	KU	Allambie Rd	Arnhem Rd		nr. Spastic Centre	Allambie Grove	kerb ramps too steep - wheelchairs & scooters tip backwards.	J, D	D
5	KU	Allambie Rd	Arnhem Rd		nr. Sunnyfield Village	Allambie Grove	kerb ramps too steep - wheelchairs & scooters tip backwards.	J, D	D
6	KU	Allambie Rd	Martin Luther Pl			Allambie Heights	kerb ramps too steep, lip too high - wheelchairs & scooters tip backwards.	J, D	D
7	PC	Oaks Av	Pittwater Road	Dee Why Beach		Dee Why	many uncontrolled x'gs, roundabouts problematic for vision-impaired users. In general, Guide Dogs Assoc recommends mid-block crossing away fr roundabouts due to difficulty hearing approaching cars at r'bouts.	E	D
8	TS	The Strand	Howard Av			Dee Why	cars don't stop at ped x'g.	E	D
9	PC	Howard Av	Avon Rd			Dee Why	roundabouts problematic for vision-impaired users.	E	D
10	PC	Dee Why Pde	Avon Rd			Dee Why	roundabouts problematic for vision-impaired users.	E	D
11	TS, PC	Fisher Rd N	Grover Av			Cromer	Cromer High School chn cross here, but cars too fast. Possible zebra crossing here?	BB	D
12	TS, PC	Fisher Rd N	Middleton Rd			Cromer	Cromer High School chn cross here, but cars too fast.	BB	D
13	TS, PC	Fisher Rd N	nr Ryrie Av			Cromer	Cromer High School chn cross near here fr Dumic Pl, but cars too fast.	BB	D
14	FU	Fisher Rd N	South Creek Rd	Tennyson Rd	(DW Gdns to Ret.Vill)	Cromer	tree roots causing uneven footpath.	BB	D
15	general						need large print version of PAMP questionnaire.		D
16	F	Aquatic Dr	Allambie Rd	Warringah Aquatic Centre		Allambie Grove	need footpaths to access Aquatic Centre from Spastic Centre & beyond.	J	D
17	KU	Pittwater Rd	Oaks Av			Dee Why	kerb ramp lip too high, dangerous for scooters.		D
18	KU	Pittwater Rd			median strip	Dee Why	poor design?		D
19	KU	Pittwater Rd	Delmar Pde	Hawkesbury Av		Dee Why	kerb ramps too steep, lip too high, and ramps from one side of road do not match up across the other side.	JC	D
20	KU	Pittwater Rd	Dee Why Pde			Dee Why	kerb ramps too steep, lip too high, and ramps from one side of road do not match up across the other side.	JC	D
21	F	Pittwater Rd	Kingsway			Dee Why	from the Medical Centre, have to go north to get to the other side.	JC	D
22	FU	Pittwater Rd	Sturdee Pde			Dee Why	light pole in footpath just before ped x'g, obstructs scooters.	JC	D
23	FU	Warringah Rd	Alfred St			Narraweena?	telegraph pole in middle of footpath	JC	D
24	KU	Pittwater Rd	William St		outside Warr.Mall	Brookvale	steep kerb ramp near bus stop on Mall side	JC	D
25	general						refer to historic Warringah Access Cmtee meeting notes. JM to provide.	JM	D
26	PC, F?	Somerville Pl			nr St Kieran's Primary school	Manly Vale	used by peds, too narrow for 2-way traffic	AG	D
27	O?	King St	Somerville Pl			Manly Vale	poor sight distance. Suggest parking restrictions at entry to King St fr Condamine St?	AG	D
28	F	King St				Manly Vale	parking in bus stop & no footpath, so people walk on road and nature strip.	AG	D
29	PC, TS	Alexander St	Telopea St	Pittwater Rd	Plateau to beach	Collaroy	high speed traffic and no ped x'g facility, so dangerous for peds; also narrow road, impatient drivers.	AG	D
30	PC	Aubreen St			nr. Collaroy Plateau Primary school	Collaroy	no x'g for children.	AG	D
31	FU, KU	Pittwater Rd	Mona St		Narrabeen High School	Pittwater Ccl area	grades on footpath and kerb ramps are no good.	BB	D
32	PC	Lawrence St	Rowe St	Cavill St	nr. Roundabout	Harbord	difficult to cross; fatalities have occurred; ppl cross road to catch buses to Manly.	E	D
33	TB	Forest Way	Russell Av	Rabbett St	outside shopping cntr	Frenchs Forest	tactile button too high at signalised ped x'g.	JC	D
34	TB	Forestville Av	Warringah Rd			Forestville	button for signalised x'g is tucked behind power pole	D	D
35	KU	Woodlands Rd	Warringah Rd			Forestville	kerb ramp on N-side too steep, lip too high	D	D
36	KU, TB						depth perception issues can make steep kerb ramps more problematic; distance bt. button and crossing kerb ramp can also be a problem; directing kerb ramp into oncoming traffic also a problem.	MS	D
37	O	Allambie Rd	Arnhem Rd		ped island nr. Spastic Centre	Allambie Grove	yellow bins & "keep left" sign obstructing view of wheelchair/scooter users	JC	D
38	general						accompany a person in a wheelchair/ mobility scooter on a ped audit.	R	D
39	K or KU?	Pittwater Rd	King St			Narrabeen	kerb ramps		D
40	K or KU?	Allambie Rd	Grigor Pl			Allambie Heights	kerb ramps		D
41	F	Aquatic Dr				Allambie Grove	hundreds of cars both ways, and peds have to walk on road	B	E
42	PC	Allambie Rd	Warringah Rd			Allambie Grove	difficult to cross.	B	E
43	PC	Allambie Rd	Rodborough Rd			Allambie Grove	difficult to cross, 5-10 min wait for safe break in traffic; alternative is to go through "Innovations" car park, but still have trouble crossing at Allambie Rd at Warringah Rd.	B	E

No.	issue code	location					comment	person	Session (D/E)
		main st	*cross st 1*	*cross st 2*	*other*	*PAMP area*			
44	PC, F	Frenchs Forest Rd E	Allambie Rd	Warringah Rd	to Skyline Shops	Allambie Grove	difficult to cross to get to Skyline Shops; also lack of footpath.	MJ	E
45	V	Allambie Rd				Allambie Grove	overhanging branches need trimming.	MJ	E
46	PC	Allambie Rd?	nr. Rodborough Rd?		Capital Business Park	Allambie Grove	Capital Business Pk has disability services offices, but no x'g to bus stop on opposite side of Allambie Rd; all peds have to use Aquatic Dr.	MJ	E
47	PC	Wyndora Av	Carlton St	Foam St		Harbord	high speed traffic on Wyndora-Carlton-Evans St 'rat run' and high ped demand, but no x'g. Suggest x'g here.	DM	E
48	V	Wyndora Av	Carlton St	Foam St		Harbord	vegetation overgrown so footpath can't be used.	DM	E
49	F	Glen St	Jacka Park	Soldiers Av		Harbord	ped demand fr park up cul-de-sac, but no footpath on either side.	DM	E
50	F	Veterans Rd	Grevillea St	Telopea St		Wheeler Heights	need footpath on route from Wheeler Heights Primary school.	V	E
51	F	Heather St	Veterans Rd	Ambleside St		Wheeler Heights	links Collaroy Plateau to industrial area.	V	E
52	F	Ambleside St	Heather St	South Creek Rd		Wheeler Heights	links Collaroy Plateau to industrial area.	V	E
53	V	Madison Wy				Allambie Grove	overgrown vegetation needs trimming to improve ped environment.	V, B	E
54	H						all steps should have handrails	MG	E
55	KU						ensure kerb ramps on either side of a road crossing match up.	Z	E
56	general						boats/ caravans parked on-street are a sight obstruction to vehicles making pickups fr. clients homes.	Z	E
57	SC	Pittwater Rd	Howard Av			Dee Why	signalised ped x'g phase too short for slower people.	B	E
58	general	Pittwater Rd				Dee Why	ped fence good, but have seen people jump the fence	V, MJ	E
59	RP						retirement village developers should contribute towards recreational paths, and ensure villages are not built in inaccessible areas.	Z	E
60	F	Worrobil St				Nth Balgowlah	some houses have taken over nature strip leaving no path through	MJ	E
61	TV	Dee Why Pde				Dee Why	lots of high density development feeding traffic into Dee Why Pde.	V	E

LIST OF GENERAL ISSUES

F	lack of footpath
FU	footpath unsafe - obstructions (eg. poles), tree roots causing unevenness
PC	lack of safe pedestrian crossing facility
TV	traffic volumes too high --> unsafe for crossings
TS	traffic speed too high --> unsafe for crossings
NS	condition and continuity of nature strip
V	vegetation maintenance
B	bus services - changes to routes, access to shops, etc
H	lack of handrails for steps
KU	kerb ramp unsafe - lip too pronounced, kerb directs scooter to centre of intersection, gradient too steep
K	lack of kerb ramp
SC	short duration of signalised pedestrian crossing phase
RP	recreational path opportunity
TB	awkward location of tactile button for signalised crossing
O	obstructed view from traffic to pedestrians waiting to cross

SESSION D: Disability Group representatives

J	Judith Coeppert	Spastic Centre (mobility scooter user)
D	Dawn Sallars?	Spastic Centre (mobility scooter user)
JC	John & Cheryl Morg	Spastic Centre (mobility scooter users)
R	Robert Horton	Paraquad (wheelchair user)
JM	Jim & Margaret Mur	Balgowlah School for Seniors, also ex-Warringah Access Cmtee
M	Margaret Steggles	Vision Australia
E	Elaine Chan	Guide Dog Association
BB	Bev & Beth	Special Olympics Nthn Region
A	Annie Grogan	Special Olympics Nthn Region

SESSION E: Elderly Group representatives

B	Beryl Brown	Eurobodalla Homes - Allambie Heights
MJ	Mary Johnstone	Eurobodalla Homes - Allambie Heights
DM	David Morrisey	Northern Beaches Health Promotion
V	Valerie Turner	National Seniors Association
EG	Erhard Gohl	Allambie Heights Village Ltd - Self Care
MG	Mandy George	Sunnyfield, also Manly Access Cmtee
Z	Zena Maxwell	Manly-Warringah-Pittwater Community Aid, also ex-Warringah Access Cmtee

Appendix C-2
Public Information Stall Comments

ISSUES RAISED DURING WARRINGAH PAMP COMMUNITY CONSULTATION ON SATURDAY 24 APRIL 2010.

Suburb	Location	Issues
Forestville Shopping Centre		
Killarney Heights	Tramore Place	• Conflicts between parked cars and pedestrian. • No marked crossing is provided to cross Tramore Place at the entrance to the Killarney Heights Public School. • No school crossing supervisor is in place at this crossing. • Few 'near miss" incidents were observed by parents. • No footpath is provided for Tramore Place (shop side).
Killarney Heights/Forestville	Melwood Avenue	• Footpath is not complete along this road which is being used by school children and park users.
Narrabeen	Lindley Avenue	• No footpath along this narrow road. • Access to emergency vehicles in particular fire services is restricted due to the narrow width of the road. • Vegetation overgrown on the sides of the road and this forces pedestrian to walk on the road. • Poor lighting
Narrabeen	Walker Avenue	• No footpath on this road.
Narrabeen	Cnr of Mactier Street and Lake Side Road	• The house located cnr of Mactier Street and Lake Side Road forces pedestrians to walk around the house.
Killarney Heights	Starkey Street – Park to Tralee Avenue, Hyde Avenue	• No footpath is provided. • Amber tree leaves causing slip and fall incidents.
Forestville	Warringah Road – Stakey to Forest Way (eastern side)	• Condition of the footpath is poor.
Forestville	Forestville Shopping Centre	• Bikes/dogs/skate boards to be banned for the pedestrian safety • Toilet facilities are lacking. • The current toilet arrangement encourages unlawful activities.
Forestville	Cannons Pardae	• Footpath is provided for part of this road
Killarney Heights	Ballys Hannon Road	• Two crashes occurred at the bend. As a result of this two cars were written off.
Forestville	Forestville Shopping Centre – Coles Loading Dock	• The reversing manoeuvre at the loading dock requires restricted pedestrian movements to/from loading dock.
Forestville	Cook Street/Cannon	• Footpath is provided for part of these roads.
Killarney Heights/Forestville	Melwood Avenue	• Footpath is not complete along this road which is being used by school children and park users.
General	General	• Overhanging trees need pruning. • Concrete foot path is required.
Forestville	Warringah Road/Brown Street/Currie Road intersection	• Excessive delays at the Brown Street approach.
Killarney Heights	General	• Poor lighting.
Terrey Hills Shopping Village		
Terrey Hills	Terrey Hills Shopping Village and its environ	• Inadequate bicycle parking. • Termites on Council's chair. • Inadequate garbage collection bins. • Poor lighting. • High number of vehicle movements and cyclists. • Inadequate parking. • Excessive travel speed of vehicles.
Terrey Hills	Booralie Road/Yulong Avenue intersection	• Consider traffic signals at this location. • Sight lines are obscured for the pedestrians crossing Yulong Avenue due to trees/vegetation.

Terrey Hills	General	• Cycling is a real issue. Cyclists block traffic movements and cause queuing.
Terry Hills	Booralie Road – west of Laitoki Road	• No foot path is provided.
Terrey Hills	Booralie Road – Adjacent to Sydney Japanese School and Northern Beaches Christian School	• Parking is an issue adjacent to these schools. • Heavy traffic during the school opening and closing hours. • Parked car narrows width of the road carriageway to one lane road during school functions.
Terrey Hills	Dandenong Road	• No footpath is provided along Dandenong Road. The Browns Way/Jamberoo Ave/Dandenong Road route is being used by the residents of Retirement Village & Nursing Home located at the corner of Booralie Road/Nerang Avenue.
Forestway Shopping Centre		
Forestway	Forest Way	• Footpath between parks through the residential area are missed
	Warringah Rd/Starkey St	• The green time for pedestrian crossing is too short at the intersection. Pedestrian is not able to complete the crossing. In addition, there are 3 retirement villages around the area and there are plenty of older people to use this crossing.
Narrabeen	Lindley Avenue	• The removal of footpath due to development
Narrabeen	Bike track	• The lighting around the lake is at the eye level that blinds users of the path, making it difficult to see what it ahead on the footpath and making feel unsafe. • The path should have directional marking on it to separate the direction of movements. • People should be forced to walk their dogs on leashes • Lighting should be provided that is above eye level
Belrose	Devere Avenue	• Plants have overgrown and block the footpass through the reserve
Forestville	Melwood Avenue	• There is no pedestrian link between Forestville Ovals and Downpatrick Road
Frenchs Forest	Greendale Avenue	• No footpath for wheelchairs to pass, have to use the gutter
Frenchs Forest	Naree Rd/Frenchs Forest Road	• The crossing at the roundabout is okay and should not be moved, if it is moved, then people will not use the crossing • Should be made a pedestrian crossing
Frenchs Forest	Russell Avenue	• The crossing needs more signs and should be raised, cars drive fast around the corner. Should also have signs for cars leaving the shopping centre car park
General	Warringah Road	• Needs more crossings
General	General	• Driveway laybacks should be made more accessible ramps for wheelchairs • Bus stops should accommodate for wheelchairs
Dee Why Town Centre		
Dee Why	McIntosh – Kingsway	• Footpath is not continued from McIntosh Road to Kingsway
	Lewis St	• Formal crossing is required at the corner of Francis /Lewis St • Pedestrian crossing is required at the roundabout of Victor Rd/McIntosh • Wider footpath is required on Strand St, Dee Why
Dee Why	Oaks Avenue	• Signalised crossing near school – kerb ramp to steep
General	General	• Pedestrian Green Corridor between Pacific Parade to Dee Why Parade along the old water channel • Clean the parks, make them more family friendly

Appendix C-3
School Consultation Comments

Summary of comments from the Schools Consultation

Collaroy Plateau Public School

Collaroy Plateau Public School has identified that they wish to provide better pedestrian access to the school. As part of their input, the following items are suggested to improve pedestrian access:

- To establish new footpaths along both sides of Idaline Street. This will encourage both parents and children to use this as pedestrian walkway into the school grounds.
- To establish a new pedestrian crossing on the corner of Telopea Street and Idaline Street. This will encourage parents and children living north of the school to walk to school safely.
- To establish a new pedestrian crossing near the corner of Hilma Street and Duncan Crescent, closest to the kiss and drop zone.
- To make Hilma Street a 40km/h zone and also to install speed bumps to reduce vehicle speed along Hilma Street during school hours.
- To establish a new footpath along the resident side of Hilma Street.
- To extend the fencing on both sides of Plateau Road, in particular around the bend in Plateau Road and Hall Avenue. This is to prevent school children from being hit by oncoming traffic. This bend in the road is a blind spot area and is very hazardous to all pedestrians.
- To establish a new footpath along the resident side of Plateau Road for children and parents with prams/strollers to walk along, so as to use the pedestrian crossing (outside of property number 24 to 66 Plateau Road).

A subsequent Traffic Committee meeting (of 7 September 2010) recommended that the PAMP study consider the request for the Plateau Road pedestrian fencing and footpath extension. While the PAMP supports the extension of the footpath, further investigation is required regarding the pedestrian fencing. This could be undertaken as part of a 'Safety around Schools' program, as discussed in **Appendix H**.

Terrey Hills Primary School

Terrey Hills Primary School raised a number of concerns and recommendations regarding ways to improve the safety of their children, to further encourage walking to school.

The pedestrian crossing on Booralie Road near Myoora Road was identified as an issue of concern for the school. This is due to the reduced visibility along Booralie Road as a result of a bend in the road for northbound vehicles. The school advised that a child had been recently involved in an accident at this location. Due to the curvature of the road, is it difficult to improve the visibility. However, advanced warning signs along this section will provide additional safety.

The school raised concern regarding the intersection of Cooyong Road and Myoora Road. They stated that vehicles do not slow down while passing through the roundabout (especially left turns from Cooyong Road into Myoora Road). To address this issue, it is recommended that a traffic assessment into the design of the roundabout be undertaken to determine what traffic calming devices would be appropriate.

The school stated that pick up and set down activities occur along Myoora Road. This is also evident with the walking track on the eastern side of the road. The school suggests that a pedestrian crossing near the school entrance would assist parents and children.

South west of Terrey Hills Primary School along Myoora Road is the German International School Sydney (neighbouring Terrey Hills Swim School). Between the two schools is a private property breaking the school zone into two separate sections. It was advised by the school

that some vehicles would slow for one school zone but not the other (depending on the direction that they travel in). The school suggested that the merging of the two school zones into one would assist with maintaining the reduced speed of vehicles along Myoora Road.

The Forest High, Frenchs Forest

The Forest High is one of the largest schools in the LGA, and located near the Forest Way focus area. Through consultation with Forest High School, it was identified that the pedestrian crossing on Frenchs Forest Road does not provide adequate safety. The school advised (from a number of staff and parents) that vehicles appear to be travelling faster than 40km/h along Frenchs Forest Road during school zone times and some drivers do not always see children crossing the road. It is apparent from the comments received about this crossing that additional warning needs to be provided at this crossing. The provision of a zig zag road marking or flashing amber lights (if only to be operating during school zone hours) would greatly assist with safety at this location.

Staff and children use Frenchs Forest Road East to connect to other bus routes. There is a pedestrian refuge island near Skyline Place. However, as also identified during community consultation, this is a busy area and would benefit from an improved crossing facility (pedestrian crossing or even signalised crossing). This location is close to bus stops and would be used by employees of the local businesses.

Killarney Heights High School

Killarney Heights High School borders Killarney Heights Oval and is also near Killarney Heights Primary and local shops. The high school identified that Melwood Avenue is greatly used by staff and students to travel to Forestville and to the Forestville War Memorial Playing Fields. The school stated that they use the sporting fields, particularly on Wednesday afternoons, and that the provision of a footpath along the eastern side of the Melwood Avenue would assist with the safety of children along this route. This route would also be used by the Killarney Heights Primary school and the local community (as identified through public consultation).

St Augustine's College, Brookvale

St Augustine's College identified that Federal Parade from the intersection of Alfred Road up to the College gate and boundary of the school is in need of a pedestrian footpath. They stated that this route is not only highly used by staff, parents and students, but by the local community to access the facilities at Brookvale Park.

Harbord Public School, Freshwater

A parent of one of the students at Harbord Public School identified a number of risks that occur around the school. The main item was the crossing of parents (with children) along Oliver Street and Wyadra Avenue away from formal pedestrian crossing locations. One clear location is between the school and a nearby childcare centre. To improve the safety of parents and their children, a pedestrian crossing across Oliver Street should be considered at, or near, the intersection of Oliver Street and Robert Street. This would assist with the provision of a safe crossing location and hopefully encourage parents to cross in these locations.

Narraweena Primary School

Respondents for Narraweena Primary School commented that there were no school crossings at their school and felt that they were overlooked because it was assumed that the traffic signals at the corner of Alfred Street and McIntosh Street were sufficient. These signals would facilitate road crossing for children from the south, but was too far for children from the north to access. They suggested that safe crossings were required at the entry gates on Alfred Street, Ronald Avenue and Waratah Parade. It was also identified that there was a lack of School Zone and speed control signage and some signage that did exist was obscured by trees.

Appendix D
Questionnaire Surveys and Results

Appendix D-1 – Questionnaire Survey

Appendix D-2 – Questionnaire Results

Appendix D-1
Questionnaire Survey

Warringah Council has commissioned Aurecon Australia Pty Ltd to prepare a Pedestrian Access and Mobility Plan (PAMP) for the Warringah Local Government Area.

The aim of the PAMP is to improve your access to, and movement, around your local shops, schools, community facilities, and neighbourhoods.

To ensure the Pedestrian Access and Mobility Plan addresses your needs, we would like to know which areas you regularly use; how easily you are able to reach those areas, what pedestrian facilities need to be improved in the area; and how important different pedestrian facilities are to you.

To collect this information we would appreciate your assistance by completing the following survey, it is anticipated that it will take up to 10 minutes to complete. All responses are confidential and can not be traced back to a particular individual.

All residents completing this survey are invited to enter a draw to win a shopping voucher, there are 5 vouchers valued at $30 each. If you would like to be placed in the draw please complete the details at the end of the survey.

1. Your age group?

- [ ] 12 – 18 years
- [ ] 19 – 24 years
- [ ] 25 – 34 years
- [ ] 35 – 44 years
- [ ] 45 – 54 years
- [ ] 55 – 64 years
- [ ] 65 – 74 years
- [ ] 75+

2. Are you?

- [ ] Male
- [ ] Female

3. Which suburb do you live in? *

- [ ] ALLAMBIE HEIGHTS
- [ ] BEACON HILL
- [ ] BELROSE
- [ ] BROOKVALE
- [ ] COLLAROY
- [ ] COLLAROY PLATEAU
- [ ] COTTAGE POINT
- [ ] CROMER
- [ ] CROMER HEIGHTS
- [ ] CURL CURL
- [ ] DAVIDSON
- [ ] DEE WHY
- [ ] DUFFYS FOREST
- [ ] FORESTVILLE
- [ ] FRENCHS FOREST
- [ ] FRESHWATER
- [ ] INGLESIDE
- [ ] KILLARNEY HEIGHTS
- [ ] MANLY VALE
- [ ] NARRABEEN
- [ ] NARRAWEENA
- [ ] NORTH BALGOWLAH
- [ ] NORTH CURL CURL
- [ ] NORTH MANLY
- [ ] OXFORD FALLS
- [ ] QUEENSCLIFF
- [ ] TERREY HILLS
- [ ] WHEELER HEIGHTS

4. Do you have a disability or care for someone with a disability?

☐ Yes ☐ No

If yes, please specify what type of disability you or the person you care for has?

☐ Physical (eg. Mobility issues)
☐ Cognitive (e.g. Intellectual impairment or brain injury)
☐ Sensory (e.g. Visual or auditory impairment)
☐ Other (Specify)

5. Are you considered the main carer of any of the following?

☐ Children under 5 years
☐ Children 6 – 12 years
☐ Child/children with a disability
☐ Adult with a disability
☐ Elderly relative/friend etc
☐ Other (Specify)

6. Do you or anyone in your primary care use any of the following when visiting your local facilities such as shops and neighbourhoods? Tick all that apply.

☐ Pram
☐ Shopping trolley bag
☐ Walking stick/walking frame
☐ Wheelchair
☐ Mobility scooter
☐ Guide Dog
☐ Guide/Carer (other than parent/ guardian for young children)
☐ Other mobility aid (please specify)

7. Which of the following Warringah locations do you visit the most? You may choose up to three (3) areas

☐ Collaroy Beach Shops
☐ Condamine Street Shops, Manly Vale
☐ Dee Why Town Centre
☐ Forestway Shops
☐ Forstville Village
☐ Freshwater Village Town Centre
☐ Glen Street Village
☐ Narrabeen Village Shops
☐ North Balgowlah Shops
☐ Pittwater Road, Brookvale
☐ Pittwater Road Shops, Narrabeen
☐ Terrey Hills Shops
☐ The Strand, Dee Why Beach
☐ Warringah Mall

8. How do you generally travel to *Areas identified in Question 7**

☐ Walk
☐ Mobility Scooter/Wheelchair
☐ Bus
☐ Bicycle
☐ Private vehicle
☐ Community Transport
☐ Taxi
☐ Other

9. Why do you choose to travel this particular way to *Areas identified in Question 7*?

☐	Public transport not available	☐	To improve health
☐	Car required for other business and responsibilities	☐	Personal safety
☐	Parking provided	☐	Quicker than alternatives
☐	Limited cycling infrastructure (i.e. cycle ways and end of trip facilities)	☐	Limited infrastructure suitable for walking (i.e. pathways and crossings)
☐	Cheaper than alternatives	☐	Reliability
☐	Comfort	☐	Best option due to poor health or disability
☐	Other (Please note)		

10. As a pedestrian how safe do you feel at *Areas identified in Question 7*?

☐	Very unsafe	☐	Unsafe	☐	Neither unsafe nor safe	☐	Safe	☐	Very safe

11. As a pedestrian how easy is it to move around *Areas identified in Question 7*?

☐	Always difficult	☐	Difficult	☐	Neither easy nor difficult	☐	Easy	☐	Always easy

12. How satisfied are you with following in *Areas identified in Question 7*?

	Very Unsatisfied	Unsatisfied	Neutral	Satisfied	Very Satisfied
Footpath connectivity (links to facilities and amenities etc)					
Condition of the footpaths					
Width of the footpaths					
Location of footpaths					
Location of pedestrian crossings					
Pedestrian behaviour on the crossings					
Traffic response to pedestrian crossings					
Location of temporary footpath furniture, stalls and café tables					
Location of permanent footpath furniture (bins, chairs) and signage					
Location of kerb ramps (used for exit/entry to footpath or road for prams, wheelchairs etc)					
Height of kerb ramps – (step down height)					
Location and effectiveness of lighting					
Location of directional signage					
Amount of directional signage					
Getting from a car park to a footpath					
Location of public transport stops/ranks etc					
Streetscape and general appearance of the streets					
Access for Prams					

Access for Wheelchairs					
Access for Mobility/scooter					
Access for People with walking aids (frames/sticks)					
Access for Vision impaired residents					
Access for Families with young children					

Do you have any specific comments for *Areas identified in Question 7*on any of the above?

13. In Warringah how important do you think improvements of the following pedestrian facilities are?

	Very Unimportant	Unimportant	Neutral	Important	Very Important
Pedestrian crossings					
Footpath condition and width					
Footpath connectivity (new footpaths and links)					
Driver education					
Pedestrian education					
Kerb ramps					
Directional signage					
Management of temporary furniture					
Location of permanent furniture and signage					
Lighting					
Connectivity to and from carparks and public transport					
Vision impaired facilities					
Streetscape and appearance					

14. Do you have any further comments regarding pedestrian access and mobility or specific locations where access could be improved in Warringah?

Appendix D-2
Questionnaire Results

Q2

1.1 Your age group?

12 – 18 years	3	1.79%
19 – 24 years	8	4.76%
25 – 34 years	21	12.50%
35 – 44 years	**88**	**52.38%**
45 – 54 years	25	14.88%
55 – 64 years	9	5.36%
65 – 74 years	7	4.17%
75+	7	4.17%
Total	**168**	

Q3

1.2 Are you?

Male	46	27.38%
Female	**122**	**72.62%**
Total	**168**	

Q4

1.3 Which suburb do you live in?

ALLAMBIE HEIGHTS	7	4.17%
BEACON HILL	3	1.79%
BELROSE	1	0.60%
BROOKVALE	1	0.60%
COLLAROY	15	8.93%
COLLAROY PLATEAU	**19**	**11.31%**
COTTAGE POINT	0	0.00%
CROMER	4	2.38%
CROMER HEIGHTS	5	2.98%
CURL CURL	3	1.79%
DAVIDSON	2	1.19%
DEE WHY	11	6.55%
DUFFYS FOREST	0	0.00%
FORESTVILLE	11	6.55%
FRENCHS FOREST	9	5.36%
FRESHWATER	15	8.93%
INGLESIDE	0	0.00%
KILLARNEY HEIGHTS	14	8.33%
MANLY VALE	3	1.79%
NARRABEEN	11	6.55%
NARRAWEENA	3	1.79%
NORTH BALGOWLAH	0	0.00%
NORTH CURL CURL	3	1.79%
NORTH MANLY	10	5.95%
OXFORD FALLS	1	0.60%
QUEENSCLIFF	2	1.19%
TERREY HILLS	8	4.76%
WHEELER HEIGHTS	0	0.00%
Other	7	4.17%
Total	**168**	

Q5

1.4 Do you have a disabilty or care for someone with a disabilty?

Yes	28	16.67%
No	**140**	**83.33%**
Total	**168**	

Q6

1.4a Please specify what type of disability you or the person you care for has?

Physical (eg. Mobilty issues)	**14**	**42.42%**
Sensory (e.g. Visual or auditory impairment)	4	12.12%
Cognitive (e.g. Intellectual impairment or brair	5	15.15%
Other (Specify)	10	30.30%
Total	**33**	

Q7

1.5 Are you considered the main carer of any of the following?

Children under 5 years	**73**	**41.24%**
Children 6 – 12 years	73	41.24%
Child/children with a disability	5	2.82%
Adult with a disability	6	3.39%
Elderly relative/friend etc	10	5.65%
Other (Specify)	10	5.65%
Total	**177**	

Q9

1.6 Mobility AidsDo you or anyone in your primary care use any of the following when visiting your local facilities such as shops and neighbourhoods? Tick all that a

Pram	**55**	**47.83%**
Shopping trolley bag	14	12.17%
Walking stick/walking frame	13	11.30%
Wheelchair	12	10.43%
Mobility scooter	9	7.83%
Guide Dog	0	0.00%
Guide/Carer (other than parent/ guardian for y	6	5.22%
Other mobility aid (please specify)	6	5.22%
Total	**115**	

Q11

2.1 Which of the following Warringah locations do you visit the most? You may choose up to three (3) areas.

Collaroy Beach Shops	31	7.19%
Condamine Street Shops, Manly Vale	9	2.09%
Dee Why Town Centre	65	15.08%
Forestway Shops	36	8.35%
Forestville Village	35	8.12%
Freshwater Village Town Centre	33	7.66%
Glen Street Village	9	2.09%
Narrabeen Village shops	22	5.10%
North Balgowlah Shops	4	0.93%
Pittwater Road, Brookvale	9	2.09%
Pittwater Road Shops, Narrabeen	12	2.78%
Terrey Hills Shops	7	1.62%
The Strand, Dee Why Beach	42	9.74%
Warringah Mall	**117**	**27.15%**
Total	**431**	

Q12

How do you generally travel to ${piping_text}

Walk to	90	23.87%
Mobility Scooter/Wheelchair	3	0.80%
Bus	14	3.71%
Bicycle	17	4.51%
Private vehicle	**244**	**64.72%**
Community Transport	4	1.06%
Taxi	0	0.00%
Other	5	1.33%
Total	**377**	

Q13

Why do you choose to travel this particular way to ${piping_text}?

Public transport not available	28	4.27%
Car required for other business and responsib	94	14.35%
Parking provided	79	12.06%
Limited cycling infrastructure (i.e. cycle ways	38	5.80%
Limited infrastructure suitable for walking (i.e.	36	5.50%
To improve health	50	7.63%
Personal safety	12	1.83%
Quicker than alternatives	**127**	**19.39%**
Cheaper than alternatives	37	5.65%
Comfort	47	7.18%
Reliability	34	5.19%
Best option due to poor health or disability	21	3.21%
Other (Please note)	52	7.94%
Total	**655**	

Q26

As a pedestrian how safe do you feel at ${piping_text}?

Very unsafe	15	4.63%
Unsafe	45	13.89%
Neither unsafe nor safe	75	23.15%
Safe	**145**	**44.75%**
Very safe	44	13.58%
Total	**324**	

Q26

As a pedestrian how easy is it to move around ${piping_text}?

Always difficult	14	4.32%
Difficult	61	18.83%
Neither easy nor difficult	69	21.30%
Easy	**152**	**46.91%**
Always easy	28	8.64%
Total	**324**	

Q18

How satisfied are you with following in ${piping_text}?

Footpath connectivity (links to facilities and amenities etc)

Very Unsatisfied	36	12.16%
Unsatisfied	75	25.34%
Neutral	49	16.55%
Satisfied	**116**	**39.19%**
Very Satisfied	20	6.76%
Total	**296**	

Condition of the footpaths

Very Unsatisfied	33	11.34%
Unsatisfied	55	18.90%

Neutral	64	21.99%
Satisfied	**119**	**40.89%**
Very Satisfied	20	6.87%
Total	**291**	

Width of the footpaths

Very Unsatisfied	21	7.37%
Unsatisfied	45	15.79%
Neutral	79	27.72%
Satisfied	**124**	**43.51%**
Very Satisfied	16	5.61%
Total	**285**	

Location of footpaths

Very Unsatisfied	20	7.12%
Unsatisfied	46	16.37%
Neutral	60	21.35%
Satisfied	**137**	**48.75%**
Very Satisfied	18	6.41%
Total	**281**	

Location of pedestrian crossings

Very Unsatisfied	33	11.50%
Unsatisfied	72	25.09%
Neutral	57	19.86%
Satisfied	**110**	**38.33%**
Very Satisfied	15	5.23%
Total	**287**	

Pedestrian behaviour on the crossings

Very Unsatisfied	16	5.67%
Unsatisfied	35	12.41%
Neutral	89	31.56%
Satisfied	**128**	**45.39%**
Very Satisfied	14	4.96%
Total	**282**	

Traffic response to pedestrian crossings

Very Unsatisfied	26	9.15%
Unsatisfied	69	24.30%
Neutral	72	25.35%
Satisfied	**108**	**38.03%**
Very Satisfied	9	3.17%
Total	**284**	

Location of temporary footpath furniture, stalls and café tables.

Very Unsatisfied	16	5.71%
Unsatisfied	27	9.64%
Neutral	99	35.36%
Satisfied	**126**	**45.00%**
Very Satisfied	12	4.29%
Total	**280**	

Location of permanent footpath furniture (bins, chairs) and signage		
Very Unsatisfied	14	4.96%
Unsatisfied	36	12.77%
Neutral	91	32.27%
Satisfied	**129**	**45.74%**
Very Satisfied	12	4.26%
Total	**282**	
Location of kerb ramps (used for exit/entry to footpath or road for prams, wheelchairs etc)		
Very Unsatisfied	21	7.55%
Unsatisfied	26	9.35%
Neutral	90	32.37%
Satisfied	**127**	**45.68%**
Very Satisfied	14	5.04%
Total	**278**	
Height of kerb ramps – (step down height)		
Very Unsatisfied	15	5.45%
Unsatisfied	21	7.64%
Neutral	100	36.36%
Satisfied	**125**	**45.45%**
Very Satisfied	14	5.09%
Total	**275**	
Location and effectiveness of lighting		
Very Unsatisfied	9	3.24%
Unsatisfied	37	13.31%
Neutral	97	34.89%
Satisfied	**124**	**44.60%**
Very Satisfied	11	3.96%
Total	**278**	
Location of directional signage		
Very Unsatisfied	7	2.50%
Unsatisfied	44	15.71%
Neutral	100	35.71%
Satisfied	**121**	**43.21%**
Very Satisfied	8	2.86%
Total	**280**	
Amount of directional signage		
Very Unsatisfied	11	3.99%
Unsatisfied	43	15.58%
Neutral	95	34.42%
Satisfied	**119**	**43.12%**
Very Satisfied	8	2.90%
Total	**276**	
Getting from a car park to a footpath		
Very Unsatisfied	25	9.06%
Unsatisfied	54	19.57%
Neutral	59	21.38%
Satisfied	**128**	**46.38%**
Very Satisfied	10	3.62%
Total	**276**	
Location of public transport stops/ranks etc		
Very Unsatisfied	18	6.55%
Unsatisfied	23	8.36%
Neutral	101	36.73%
Satisfied	**121**	**44.00%**
Very Satisfied	12	4.36%
Total	**275**	

Streetscape and general appearance of the streets		
Very Unsatisfied	41	14.86%
Unsatisfied	57	20.65%
Neutral	65	23.55%
Satisfied	**104**	**37.68%**
Very Satisfied	9	3.26%
Total	**276**	
Access for Prams		
Very Unsatisfied	20	7.33%
Unsatisfied	35	12.82%
Neutral	98	35.90%
Satisfied	**107**	**39.19%**
Very Satisfied	13	4.76%
Total	**273**	
Access for Wheelchairs		
Very Unsatisfied	18	6.98%
Unsatisfied	25	9.69%
Neutral	**137**	**53.10%**
Satisfied	70	27.13%
Very Satisfied	8	3.10%
Total	**258**	
Access for Mobility/scooter		
Very Unsatisfied	18	7.09%
Unsatisfied	27	10.63%
Neutral	**136**	**53.54%**
Satisfied	65	25.59%
Very Satisfied	8	3.15%
Total	**254**	
Access for People with walking aids (frames/sticks)		
Very Unsatisfied	22	8.63%
Unsatisfied	26	10.20%
Neutral	**135**	**52.94%**
Satisfied	64	25.10%
Very Satisfied	8	3.14%
Total	**255**	
Access for Vision impaired residents		
Very Unsatisfied	15	5.88%
Unsatisfied	24	9.41%
Neutral	**157**	**61.57%**
Satisfied	51	20.00%
Very Satisfied	8	3.14%
Total	**255**	
Access for Families with young children		
Very Unsatisfied	24	8.89%
Unsatisfied	43	15.93%
Neutral	82	30.37%
Satisfied	**107**	**39.63%**
Very Satisfied	14	5.19%
Total	**270**	

Open Ended Text Data
Q19

Do you have any specific comments for ${piping_text} on any of the above?

Data
Do you have any specific comments for ${piping_text} on any of the above?

General Comments

It is a great area, the footpath in front of the shops could be be cleaned a bit

More travelators would make changing levels easier for prams/wheelchairs. Lifts are slow and crowded.

The pedestrian crossings are poorly placed, very difficult to negotiate both as a driver of a car and a pedestrian.

Consider more pedestrian bridges and tunnels rather than level crossings: this will improve safety for pedestrians and moterised vehicles and reduce traffic congestion.

The are needs to be more consolidated and to have better variety of shops and restaurants available

The area needs to be more consolidated and offer better variety of services/shops/ council and community services. Too spread out and dominated by 2 dollar shops.

Can be dangerous in carparks. poor visibility and lack of marked paths

There needs to be a proper footpath along the full length of the eastern side of the road. If the proposals recently placed on exhibition go ahead, most of my concerns re width and pedestrian safety/access on the western side should be addressed.

many footpaths lead to nowhere.

Belrose - Glenrose Shops Comments

Shopping Centre is due for redevelopment, but area around Glen Street theatre could be improved with additional landscaping and public seating upgrade;

Brookvale Comments

Its not so much a problem of footpaths at Warringah Mall, but a significant problem of footpaths in getting down to Warringah Mall. Footpaths running down from Allambie Heights to Condamine Street / Warringah Mall are scarce. There is a footpath which runs down Kentwell Rd to Condamine Street, but other than that there are none. There should be a footpath running down Smith Avenue to allow pedestrians, particularly those with young children, the elderly or disabled to safely get down to Condamine street / Warringah Mall without having to jump on and off the road at points or to traverse unstable ground. There is a footpath connecting Orara Rd to Smith Ave down that unmade section of Fishbourne Ave but there it ceases. To continue the path on down Fishbourne Ave to Condamine St would be far too steep. In fact it would be better to continue that footpath along Smith Avenue down to Condamine Street. I believe this footpath was slated for development by council many years ago but has languished on a priority

My issue is the walk TO the mall which involves walking the pram on the street (Wyadra Ave) as there is no footpath

Warringah Mall should be much more transit oriented. The mall does not address the main road bus stop at all, and the current plan of continuing to have at grade parking and simply covering this with more development will simply be ugly and not fix the problem – public transport needs to be an attractive option for people to use it. The inner mall stop leaves much to be desired as well, and surely could be better placed to enable the faster turnover of buses.
The Mall also fails to address Brookvale TAFE, one of the only higher education facilities on the Northern Beaches, and should be reconfigured in the future to have active, large, high pedestrian activity entrances facing the TAFE with easy access across Old Pittwater Road.
Entrances to the north also need to be upgraded to be more amenable, and further consideration should be given to restoring Brookvale Creek north of the mall, both as a natural entrance and improving green links in the area.

As a private shopping centre it seems Warrignah Mall has far better infrastructure and facilites that most council controlled areas?

Access from the outside car park (near Woolies) to the Aldi car park is very dangerous. There is a pedestrian crossing and then a ramp but no crossing meaning you have to dodge the traffic to get through. Also, why does there have to be so much parking for 'parents with prams'?

Not many lifts in Mall make it difficult to get from A to B with a pram.

Complex is too spread out, organisation of outdoor parking is not efficient. Parking facilities are very limited during peak times, would benefit from parking indicators (as located in other in many other large shopping centres).

GETTING IN AND OUT OF THE MALL IS PRIMARILY THE DOMAIN OF THE CAR. WHILST THERE ARE MANY PATHS AND CROSSINGS FOR PEDESTRIANS YOU TAKE YOUR LIFE IN YOUR OWN HANDS ESPECIALLY ON THE WEEKENDS.

There is no footpath joining the streets running to it e.g smith ave. The footpath to it on old pittwater road is permenantly overgorwn and you have to walk with your pram onto the road.

* More directional signage to parking area.
* Bike racks are a token facility. They are too narrow and not set far enough apart. Also, the bike racks are not located in visble locations, but rather, tucked around corners.
* The pods take up room and are rather dysfunctional

1. Car-parks generally dangerous and unpleasant for pedestrians.
2. More pedestrian and cylce infrastructure needed around carparks and Mall perimeter.

Mostly walking around the mall is fine. However getting to Bing Lee/Aldi is a bit difficult from the Woolworths carpark.

Neutral on all of above as there are no significant problems apart from lack of free parking. These questions are highly subjective - of course more lighting is better than less but that does not mean it is necessary or worth the expense.

Access from Aldi carpark to the main centre is very convoluted in either direction with many crossings, turnings etc.

Getting to the mall from the car parks is difficult - particulary from Aldi to the main section of the Mall - all sections should be interconnected no matter who owns them - it is a community facility. The extra walking makes peolpe take risks to cross the road.
The access to the footpaths from internal car parks is also difficult in some places - particualry the outer car parks near Pittwater road etc.
Pedestrians crossing the car parking areas are very difficult to see etc - especially coming from Pittwater Road.

Convenient to have everything in the one place. Wouldn't want it to get much bigger as its a long walk from one end to the other. Hard for the elderly to shop there with the amount of walking required.

Its fine when parking is easy and not congested. There could be a better pedestrian connections between the 'island buildings' i.e Aldis and Bunnings to the rest of the Mall in the way of undercover walkways. Often you need to go all over the Mall on a visit and this would make it easier.

dangerous height and slopes on pram ramps along pittwater road from north Manly to inside and surrounding streets around warringah mall.

Crossings on virtually blind corners create a hazzard for pedestrians. Some footpaths lead to areas with no footpaths. Completely useless & dangerous to someone with a pram. trying to walk around the mall last week was an exercise in major frustration. It's such an ugly hotch potch of shops & parking areas with path ways that lead nowhere logical. It took me a good 10 mins to leave the mall area (to cross Pittwater Rd cnr cross st) on foot with a pram, trying to use pedestrian crossings & non existant footpaths & the road!! ArGGG. This sprawlling mess is an ugly monstrosity. No wonder 99% of the time I drive to Chatswood to shop!

Too many footpaths that lead nowhere. Too many cars crossing footpaths. Warringah mall is Too big and too far to walk.

Needs to be consolidtaed and offer more variety - currently too spread out and offers mainly food, banking and cheap shops

Although Mall management indicate they have the 'required' number of parking for disabled drivers, it is insufficient and poorly located. Past disabled parking was converted to 'mothers with prams' in the Target car park directly opposite access lifts. Users in wheelchairs now have less parking and a long way from the lifts. I frequently have to push on the roadway as pedestrian walkways are litttered with trolleys. Disabled parking does not allow enough wider parking in the majority of cases.

Dee Why Comments

As a new resident I find the car park in front of the Libray very confusing. It is not adequately marked directionally and people drive around it in a poor manner. Also there is a small section where you can't turn around in and may have to reverse back out into main traffic flow if you can't find a spot which is dangerous.

The strand parking is appaling, the existing pedestrian crossing on The Strand closest to Howard Avenue is very unsafe, i have seen someone runover here, it needs to be raised. The Footpaths have to be widened at present you can not move around the busy outdoor eating seating. The Strand from the Surf Club to Pacific Parade should be either closed or made one way. Further parking options need to be looked at such as further carparking spots made available in the existing SLSC carpark. The footpath between the exisiting playground on the beach Oaks Avenue end has to be widened and sufficent safety measure put in place to prevent a car running into the playground.

Would love to have part of the road closed off to provide easier access to food/drink outlets & be safer for young children. Would create a lovely relaxed atmosphere.

I would like to see a pedestrian crossing across Allambie Road around Lyly St and a footpath down Smith Street, Allambie. Many people in Allambie could easily walk to Warringah Mall to shop or catch public transport (buses along Allambie Rd only go to the Mall or Manly) if there was safer pedestrian access. The route they would take would be the short cut down Lyly rd and then the footpaths (stairs) connecting pedestrians with Orara and Smith streets - which leads to Condamine st and the Mall.

Forrestville Comments

Forestville Mall needs toilets closer to Coles and Cafes. Often Library is closed and Porta-loo is not working/ poorly maintained and a health risk to the children. Footpaths on Darley St end near corner of Tabora St, and it's dangerous pushing the pram between there and Melwood Ave as you need to walk on road. Furthermore, the street lights are dim on Darley St and located on the opposite side of the street to the main footpath making it dangerous to walk down at nights, particularly with a pram.
I think a lot of work needs to be done in the area to get more footpaths and more toilets.

More seats should be available along streets for elderly to sit and catch their breaths. There are three retirement villages along Cook St. Tyrone St should have another seat put in also.

Forestway Comments

I have found the pedestrian crossing at Forest Way (leading into Forestway shops, the youth centre and the primary school) to be unsafe. I believe that vehicles travelling along Forest Way towards Warringah Road can be looking further into the distance, at the traffic lights at the Warringah Rd-Forest Way intersection and not see the pedestrian crossing lights. On two occasions in the last six years I have begun to cross the road, heading to Forestway shops and a car has failed to stop at the pedestrian crossing red light. On many occasions, vehicles have just recognised the pedestrian crossing red light very close to the pedestrian crossing and have braked hard to stop. I now wait until the first vehicle in each of the three lanes has stopped before walking across Forest Way, and I ask my children to check this with me, so that they develop a habit. I am concerned that as my young children grow older and become ready to walk to school on their own (they attend Frenchs Forest Public) I will want to walk acro

Freshwater/North Manly Comments

I think you need to try and divert through traffic from coming through freshwater village and try and divert more of it maybe along oliver street rather than coming through the shops as people in cars get frustrated when the traffic gets banked up from the pedestrain crossings. Maybe you could put in more traffic slowing devices to discourage people from coming through there or even make it one way

The problem is not the Mall itself but the footpath access trying to get to the Mall from our address in North Manly is difficult, primarily because there are very few footpaths in North Manly. This means that if you are to go to the Mall with a pram or trolley must use the road in many areas making it very dangerous, especially with young children. This issue needs to be address as a priority before someone, possibly a child in a pram, is seriously injured or even killed.

I am less concerned with the Freshwater Village Town Centre and more concerned with the ability to walk there from North Manly. We have a young child in a pram and due to the distinct lack of foot paths we are required for large sections of the journey to walk on the road. This is unsafe and could easily be resolved given the width of existing nature strips.

A footpath for Wyadra Ave, North Manly, is long overdue. Many times I have seen elderly people, people with prams (we experienced this when our children were younger) and joggers resort to walking along this increasingly busy road. The grass along the side of the road is uneven and obstructed by tree routes. Considering there are bus stops along this road, a footpath is essential. I'm afraid it's only a matter of time before a serious accident occurs as pedestrians are forced to use the road itself as a footpath.

It is so huge and so many buildings everywehre. It is so busy no one cares about you. it is so hard to be able to use the public toilet the disabled one it is always full with young teenagers!!! The parking i find very difficult. The mobility system inside Warringah Mall is good.

Terrey Hills Comments

Most public transport from Terrey Hills to Warringah Mall (anywhere really) on the weekends is non-existant. If the kids need to go somewhere they have to rely on private cars, which are not always available. My teenager cannot go to the Mall unless driven as there is no public transport.

We are in desperate need of a pedestrian crossing on Myoora Road, opposite the Terrey Hills Public School. It is a very busy road, with many buses travelling down it at school time and nowhere safe for us to cross.

Need devices to slow down traffic on both Booralie and Yulong Ave's
Cafe's put chairs and tables out that totally block footpaths.
Impossible to get from front of shops to rear, especially with children, as the rear shop footpath entries are blocked by either the hedges or parked cars.....crossing the carpark from the front shops to the back is like playing russian roulette with small kids, let alone a pram that has no access provided and what there is is usually blocked by poles!!
Need a crossing across Yulong Ave - that is an accident waiting to happen.
Drivers usually drive across the Booralie Road crossing without stopping for pedestrians - I have nearly been run over a number of times. This could be due to pedestrians waiting to cross not being able to be seen properly due to poles and plants/shrubs.
Driveway exiting shops between the bottleshop and chinese takeaway needs a speed hump or something similar....it is a blind corner for pedestrians and the cars are usually looking the otherway for on

perhaps the addition of a zebra crossing on Yulong Rd would be an improvement as dangerous to cross over this road.

Other Comments

I avoid going to the Mall.I enjoy smaller shopping centres and do not like having to take my car

The public toilets located at the back of the shopping village are disgusting. They never seemed to be cleaned and are in a revolting state. The library has the only other toilets available for use but they aren't open every day and after hours. I never let me young children use the public toilet, i prefer instead to have them go on the grass because its much cleaner !!

Either your program has a glitch or this survey is totally pointless. I don't have any interest in Glen St village. I live in Narrabeen and work full time in North Ryde for which I HAVE TO drive for total lack of alternatives and which is getting more and more difficult. So of course every one would like nice footpaths but to see how much, I suggest you ask the question 'would you rather have wider footpaths or have a bus service to North Ryde, or be able to take the Wakehurst parkway in the morning without a 30 minute queue at the intersection with Warringah rd, I think would give you a better indication of where the priorities are and where people want to to spend their money. For example I note you've added many bus lanes; and that they are largely empty. Putting more buses on, so that people going to the CBD may 1) get on the bus and 2) have a seat, would seem like a good start. I don't know what gives you the idea that a pedestrian plan is the most pressing of priorities in our area but I strongly

The area is dirty and unfriendly. The beach area is rat infested, grubby, open rubbish containers and in in a poor and neglected condition.

Q20

3.1 In Warringah how important do you think improvements of the following pedestrian facilities are?

Pedestrian crossings		
Very Unimportant	4	3.92%
Unimportant	3	2.94%
Neutral	12	11.76%
Important	34	33.33%
Very Important	**49**	**48.04%**
Total	**102**	
Footpath condition and width		
Very Unimportant	3	3.09%
Unimportant	2	2.06%
Neutral	10	10.31%
Important	30	30.93%
Very Important	**52**	**53.61%**
Total	**97**	
Footpath connectivity (new footpaths and links)		
Very Unimportant	4	4.04%
Unimportant	2	2.02%
Neutral	8	8.08%
Important	30	30.30%
Very Important	**55**	**55.56%**
Total	**99**	
Driver education		
Very Unimportant	1	1.00%
Unimportant	6	6.00%
Neutral	**32**	**32.00%**
Important	32	32.00%
Very Important	29	29.00%
Total	**100**	
Pedestrian education		
Very Unimportant	1	1.02%
Unimportant	8	8.16%
Neutral	28	28.57%
Important	**39**	**39.80%**
Very Important	22	22.45%
Total	**98**	
Kerb ramps		
Very Unimportant	2	2.04%
Unimportant	5	5.10%
Neutral	31	31.63%
Important	**38**	**38.78%**
Very Important	22	22.45%
Total	**98**	
Directional signage		
Very Unimportant	2	2.08%
Unimportant	8	8.33%
Neutral	**37**	**38.54%**
Important	31	32.29%
Very Important	18	18.75%
Total	**96**	
Management of temporary furniture		
Very Unimportant	6	6.25%
Unimportant	6	6.25%
Neutral	**43**	**44.79%**
Important	31	32.29%
Very Important	10	10.42%
Total	**96**	

Location of permanent furniture and signage		
Very Unimportant	3	3.13%
Unimportant	5	5.21%
Neutral	37	38.54%
Important	**39**	**40.63%**
Very Important	12	12.50%
Total	**96**	
Lighting		
Very Unimportant	3	3.16%
Unimportant	3	3.16%
Neutral	22	23.16%
Important	**34**	**35.79%**
Very Important	33	34.74%
Total	**95**	
Connectivity to and from carparks and public transport		
Very Unimportant	5	5.10%
Unimportant	0	0.00%
Neutral	18	18.37%
Important	37	37.76%
Very Important	**38**	**38.78%**
Total	**98**	
Vision impaired facilities		
Very Unimportant	2	2.20%
Unimportant	2	2.20%
Neutral	**38**	**41.76%**
Important	26	28.57%
Very Important	23	25.27%
Total	**91**	
Streetscape and appearance		
Very Unimportant	1	1.06%
Unimportant	2	2.13%
Neutral	25	26.60%
Important	**35**	**37.23%**
Very Important	31	32.98%
Total	**94**	

Open Ended Text Data

Q21

6. Do you have any further comments regarding pedestrian access and mobility or specific locations where access could be improved in Warringah

Data

6. Do you have any further comments regarding pedestrian access and mobility or specific locations where access could be improved in Warringah?

General Comments

at the moment pedestrian access is often ignored by pedestrians and drivers alike

No other place to say that the overhead clearance along many footpaths (not shopping centres) is inadequate. I believe there is supposed to be approximately 6 feet clrearance, but on many footpaths branches from private properties overhang badly. Similarly council street trees do the same.

There is a distinct lack of footpaths on Warringah streets. I think more money should be invested in allowing safe pedestrian/bike access other than on the main thoroughfares. I would like to be able to walk or cycle around my block with my children without having to go onto the road to avoid long grass, cars and overhanging trees.

More widened footpaths in beachside retail / commercial areas, upgraded public domain - paving, treatment eg. granite, information signage, landscaping, public art etc. Use of more 'shared zones' in busy pedestrianised areas to slow traffic, also opportunity to 'raise' wide areas of contrast paving in beachside and other busy pedestrian areas for safety and ease of access.

As a new resident I find there are no footpaths from my street up to more major streets meaning I have to walk my child on the road which can be dangerous. I think provision of new footpaths is a very important target.

Council should take particular note with the many small accessways between houses that allow pedestrian movements across blocks, and should more heavily signpost these, including possible destinations and even on more major routes maps of paths so that pedestrians feel it is easy to navigate streets in a quick and comfortable fashion.

Warringah has no central area or 'heart' such as Manly Corso, Chatswood mall, Hornsby Mall and some of the smaller shopping precincts in Pittwater. There is a mixed bag of half baked, alledged 'villages' that seem to lack atmosphere and a sense of community? Warringah Council needs to seriously consider some road closures to attract pedestrain traffic and build a sense fo community away from their precious cars. I rememebr when the Manly Corso traffic closure was first proposed the shop keepers protested it would be end of their businesses - well they have boomed and become an iconic area for tourists and residents alike. Warringah has no such focal point and so lacks a community 'heart' and opportuity for positive engagement.

There needs to more footpaths through the neighbourhoods of Warringah - not just the centres. They promote walking and activity, which is vital for our population including mothers with prams, peple with a disability and older people - enabling access, independence and opportunities for social interaction ultimately asssiting community conhesiveness.

Allambie Grove Comments

Skyline Shops, cnr Warringah and Allambie Roads and down Allambie Road.

I have noticed the council is spending a lot of resources replacing footpaths along Starkey st, but many streets I regularly have to walk have NO footpaths at all. THese include Aquatic Drive and Melwood Avene. Both busy roads which are not safe for pedestrians

Brookvale Comments

I was disappointed I could not comment about the mess that Brookvale is in.

Collaroy Comments

Please make the Pittwater Road crossing at Long Reef safer.

Collaroy Plateau Comments

Hi, I think that Collaroy Plateau Public School should get the flashing lights for the crossing as many drivers treat Plateau Road as if it were a main road or a their own private raceway. There should also be another School Crossing Sign at the top corner of Plateau Rd.

yes! Collaroy Plateau Public School needs someone to come up with a parking scheme. It's an accident waiting to happen.
Edgecliff BLVD Collaroy Plateau Needs a footpath! It is So dangerous to walk along, impossible with a pram. Few cars, let alone the garbabge trucks, go anywhere near the speed limit...

There is only footpath on the one side of Plateau Road running past Collaroy Plateau Public School. For parents / carers who park on that side of the road, it is impossible to walk on a grassed area if you have smaller pre-school children (who are unsteady on their feet) or who are pushing a buggy - this results in people with small children making a mad dash across a busy road, to reach the paved footpath, so they can then walk into the school to drop their children at class.
Walking to school - 70% of CPPS children COULD walk to school if they had safe footpaths along the entire route of the busy, feeder roads. Anzac Avenue is one such road but between Melody lane and Hendy Avenue there is no footpath and no lever walking grassed area. So children walking to school and parents pushing prams are forced to walk in the road intoo oncoming traffic.

Collaroy Plateau Public School needs a drop and kiss zone like other schools have. Parking for parents impossible.

Collaroy Plateau is in desperate need of more footpaths. Drivers need to slow down to the 50km/h speed limit and 40km/h speed limit in school zones. Speed bumps (traffic calming) need to be introduced along the length of Hall Avenue, Collaroy Plateau.

Yes, I have children who attend Collaroy Plateau PS and the parking and access to the school is very difficult. Another pedestrian crossing is required on Plateau Rd in between Hall Avenue and Telopea Street.

My son goes to Collaroy Plateau School and we are struggling with parking and safety. There is one crossing but there needs to be better access crossing the road with young children. Sometimes you have to park up to 3 streets away and can be hard for mum's with young children and prams and negotiating across busy roads with limited visibility. To get down to the crossing is not paved and becomes difficult to negotiate with prams

Near Collaroy Plateau School it is very unsafe trying to cross the street to the east of the school towards the shops (where Plateau Rd meets Aubreen Street) i.e. Idaline Street. The speed limits, in particular in Hilma Street, for school zones are almost never adhered to. There needs to be a footpath along Edgecliffe Boulevarde and other streets on Collaroy Plateau - Edgecliffe Boulevarde would be one of the most used roads in terms of people walking on the Northern Beaches.

Footpaths around Collaroy Plateau, especially around Collaroy Plateau school. Introduce kiss and drop zone along Plateau Rd outside CCPS.

FOOTPATHS are required on residential streets, especially with the growing number of young families moving into the area (it is simply not acceptable to push a pram on the road on a busy street). eg Westmoreland Ave, Hall Ave etc

Corner of Idaline & Telopea St, Collaroy Plateau (school crossings)

Collaroy Plateau Public school. Extremely dangerous conditions for children around the area. We need a pedestrian crossing on Telopia St (between Idaline St and Aubreen St). Many families, including ours, won't let kids walk to school from Northern side of Plateau as there are no crossings and no school zone speed limit. Someone will get run over / killed one day as people speed down Telopia St on their way to Alexander St and Pittwater Rd. You would drastically reduce parking problems if there was a crossing so kids could walk to school.
Edgecliff Boulevard on Collaroy Plateau should have a proper footpath. This road has one of the best views in Sydney and is a popular walking path and picnic spot. It is an area Warringah should be very proud of and it is a disgrace that there is no proper footpath, especially considering it is on a bus route. One day a walker or child will get run over, its only a matter of time.

We need better footpaths and pedestrian crossings around schools - in particular Collaroy Plateau Public school.

Augusta shops in Veterans Parade, Collaroy Plateau are used by many locals from Collaroy Plateau, Wheeler Heights and the RSL Retirement Village. I would walk more often if there was a footpath from my street to the Augusta shops. I am afraid of spraining my ankle if I walk on the grass verge. I do not feel safe walking on the road. I also expect to use a mobility scooter or similar vehicle at some time in the not too distant future. Again, proper footpaths are required. I also notice that quite a few people use mobility scooters when visiting the Augusta shops. There is a footpath but quite often cars are parked in driveways obstructing the footpath.

Cromer Comments

The new 50km speed limit along Willandra Road at Cromer is long overdue, however the stretch of the road between Nalya Road and the start of Carawa Road is very dangerous for pedestriansd as it is used as a speed zone for many drivers. There are bus stops along the road and crossing Willandra Road is very difficult as you have to negotiate the parked cars which reduce visibility and the speeding cars and large trucks from the nearby Cromer Industrial area and those using it as a rat run to/from Collaroy. A roundabout at Lillihina Avenue along with a pedestrian crossing would help people cross, especially those from the nearby retirement areas and the local school children

Yes -The placing of Bus stops on the corner of Kirkstone Rd and Rose Ave Wheeler Heights, has created a traffic nightmare, as this is a busy intersection the bus stop used to be 3 houses from the corner and over the last year has been moved to right on the corner, this is a busy intersection and this has caused coutless car accidents and almost had children run over. I think it is in the council and local communities best interest to rally the Bus Dept to move there bus stops to a safe distance of 50 meter from any corner, if we would be booked to park on this corner then why is it ok for a bus to stand in the same spot obstructing traffic to padestrians and vechiles. Please make a change and make a difference!!!

Dee Why Comments

Car drivers routinely take the right of way to cross footpaths from pedestrians. No pedestrian crossing across Fisher Road at back of DY council carpark. Cars travel too fast along Fisher road, despite the new 50 Kph limit.
No pedestrian crossing at th east end of Lewis Street to the back of Kentucky chicken. Lewis street is a dangerous hoon highway at peak times because it has only tee intersections giving right of way to lewis street drivers.

As residents, shop owners and council workers I would like to see us work together as a team to build these things we mentioned. There is one kerp ramp on Pittwater Road and Howard Ave in front of the library. The ramp is so dangerous. The entrance to the Nuclear Medicine further down on Pittwater Rd it is a ramp a steep ramp. There is a huge step up to the ramp. it is impossible for a disabled person to get up a step and ramp like that. I would like to see those 2 areas looked at. The area on Pittwater Rd in front of Pacific Pde there is no kerb ramp at all. I know it is because of the storm water drain . Further towards Manly there is no kerb ramp on the Strudee Rd lights. That is hard too I know as it has the complex sets of lights there from Telstra. I would hope that we can come to some wonderful answer about our needs from this survey.

Public facilities like pedestrian pathways should not be rented out for cafe furniture. Not only does it steal our pathway from us, it inhibits access and should be managed more closely as vendors seem to encroach on more pathway than they are granted. Nor should council spend vast amounts on widening pedestrian pathways only to rent it out to vendors, as proposed at Dee Why Strand.

Forestville Comments

you absolutely have to do something about forestville carpark before there is a major accident and i fear it will be a child, pedestrian safety is at its worse in warringah in this carpark especially in peak drop off school times

my comments about pedestrian crossings made earlier in the Forestville Village comment section hold here too - something must be done to force drivers to slow on the approach as often drivers can be distracted momentarily and not notice pedestrians on the crossing. In Forestville I saw a car drive over the crossing whilst a mother with a toddler in a stroller were crossing. The driver had no idea she nearly hit them.

North Manly/ Freshwater Comments

PLEASE FINISH THE FOOTPATH ON WYADRA AVE, NORTH MANLY THAT YOU STARTED A FEW YEARS AGO. OUR SAFETY AND THAT OF OUR CHILDREN IS SEVERELY COMPROMISED BY FORCING US TO WALK ON THE ROAD WITH BUSES. IT IS NOT GOOD ENOUGH.

As mentioned I frequently walk along Wyadra Ave (as do many other mothers) with a pram. I can not walk the pram on the footpath due to it being uneven. I therefore have to walk the pram on the road where I often have to dodge buses and other cars. This is VERY UNSAFE and it is only a matter of time before there is a serious accident

Wyadra Ave, North Manly - an accident waiting to happen. Footpath required as a matter or urgency.

There is a desperate lack of paths in the streets around North Manly forcing prams and wheelchairs onto the road which is incredibly dangerous. Particularly in a road like Wyadra with high bus and vehicular traffic. Priority should be given to fixing these streets rather than shopping centres where there are already adequate facilities.

Main concern is lack of pedestrian safety from the intersection of Harbord Road and Wyadra Road down to Pittwater Road. This is a very busy road and a bus route and there are a lot of families with young children, seniors and also residents with mobility issues including wheel chairs who live in the immediate area. Given the Mall and primary school locations, the lack of adequate footpaths and pedestrian crossings in this area is surprising. My young family and I would chose to walk or cycle around if footpaths and crossings were available. As it is I do not feel safe walking or taking my kids cycling on the roadway at Wyadra Avenue to access school or the Mall.

Our children attend Harbord public school. We drive to school every day. Harbord Public School has a large quantity of children who attend the school, somewhere between 800 and 900. Then there are the teachers and other staff, also parents who are at school to help in class room activities. All trying to get a car park around 0am Monday to Friday.
There is one pedestrian crossing on the main road of Oliver Street linked to the school.
Just down from the school there is a long day care centre with no pedestrian access from Curl Curl end of Oliver Street. There are two other crossings on two other sides of the school. One of these streets has a 'kiss and drop zone',which I have not used but seems to work well.
Wyadra Ave over looking training park is a dissaster waiting to happen.
I challange you to attain a car park on North side of Oliver St and walk a kindy kid plus their younger siblings into the school at 8.50 am roughly Monday to Friday. Also try negotiating a pram on training park side of Wyadra Ave

I consider the intersection of Oliver and Wyadra near Harbord Pulic School dangereous at school pick and drop of time. There is often impatient drivers who drive more erractically than they should especially with large groups of children around.

The whole 10% of road infrastructure spending should be dedicated to separate cycleways. Shared footpaths (and roads) are unsafe.
Requests in my local area: 1. Install footpath along Glen Street Freshwater (approx 70m), connecting (heavily used) pedestrian thoroughfare between Jacka Park footpath and Soldiers Avenue footpath. 2. Complete Fisherman's Walk (boardwalk) from South Curl Curl around headland to Freshwater pool. 3. Connect/complete footpath between lower end of Park Street Curl Curl and Lagoon/Netball Courts (approx 70m).

THE COUNCIL NEEDS TO OPEN THEIR EYES AND LOOK WHAT PEDESTRIANS ARE DOING. I LIVE ON WYADRA AVENUE AND WATCH PLENTY OF PEDESTRIANS EVERY DAY EITHER HAVE TO WALK ON A BUSY THROUGHFARE OR ON THE VERGE. ITS A COMMON ROUTE FOR PEOPLE TO WALK TO THE MALL OR TO THE CITY BUS ROUTES YET THERE IS NO PATH. OVER AND ABOVE THIS, YOU HAVE A FAIR IDEA OF WHERE PEDESTRIANS CONGREGATE AS YOU GIVE A LIST IN THIS SURVEY - ALL YOU NEED TO DO IS INCLUDE THE BEACHES AND MANLY DAM AND THEN PROVIDE PATHS FOR PEDESTRIANS/CYCLISTS TO USE INSTEAD OF HAVING TO TAKE A CAR.

Eight years ago we requested council pave the section of wakefield street between Austral Avenue and Pittwater road due the drain clogging and thus preventing disabled and abled bodied people being able to access the bus stop because the corner of the road is flooded every time it rains, the grassed area becomes muddy, the pram ramp on one side of Austral Avenue is overgrown with grass and the other side does not have a pram ramp. At present my disabled son has to walk on the road and then access the pram ramp cnr of pittwater road and wakefield street to get the bus to manly. One day I am sure someone is going to come round the corner and run him over. The grassed area between Austral avenue and pittwater road is too uneven to use with a walking frame. We also requested the pram ramps from Warringah Mall down to the bridge at queenscliffe lagoon be improved so disabled people in walking frames, wheelchairs and electric mobility devices could get out an about independently but we are still waiting. The on

Killarney Heights Comments

I live on Melwood Ave, Killarney Hts and 2 of my children attend Killarney Hts Public School plus I have a 2 year old in a pram. We walk to school but there is no sealed footpath from home for half the distance. The footpath that exists is very difficult to manoevre a pram over as there are many tree roots that stick out of the ground and are difficult to avoid. The grass is also difficult to push a pram over as well as the fact that these are hilly footpaths. We would appreciate a sealed (concrete or tarmac) footpath to be built on Melwood Avenue from Langford Ave to Greystones Rd. There are many people who use this area. Many choose to walk on the more dangerous kerb part of the road to avoid the uneven grassy/hilly footpath. I see mums with prams, men walking their dogs, joggers all using the road instead. Also the highschool students use the footpath daily.

Please provide a footpath between Downpatrick Rd and the Forestville Playing Fields. It would mean that we could walk to the shops, cycle to the shops with the kids, and the kids could walk to school more safely.

This study doesnt cover Killarney Heights Shops
this shopping centre is very popular and is need of some new pavements
fence around the playground and improvements of the access from the shops to the school

I live just off Starkey Street in Killarney Heights. I notice that work is currently underway to extend the footpaths (along KH oval). The footpath stops at the corner of Tralee Ave, I would like to see the footpath extended further down Starkey St (say to Ballina Ave). This would give much safer access for pedestrians, kids riding their bikes & scooters.

Access needs to be improved around Killarney Heights. So far there are only footpaths near schools and old people homes and the rest of the area, we are forced to push prams on the road where cars come flying around the corner/ down hills. There is definitely an accident waiting to happen. More footpaths are needed in Forestville/ Killarney and improved street lighting is needed.

Terrey Hills Comments

Children's Crossing in Myoora Road at German International School Sydney

Recreational Comments

There should be a raised walkway starting from Dee Why all the way through to Long Reef. At present the existing path becomes soggy and muddy for a few deays after rain and it is not always possible to negotiate from one side of the mouth of th elagoon to the other woithout wading through water.

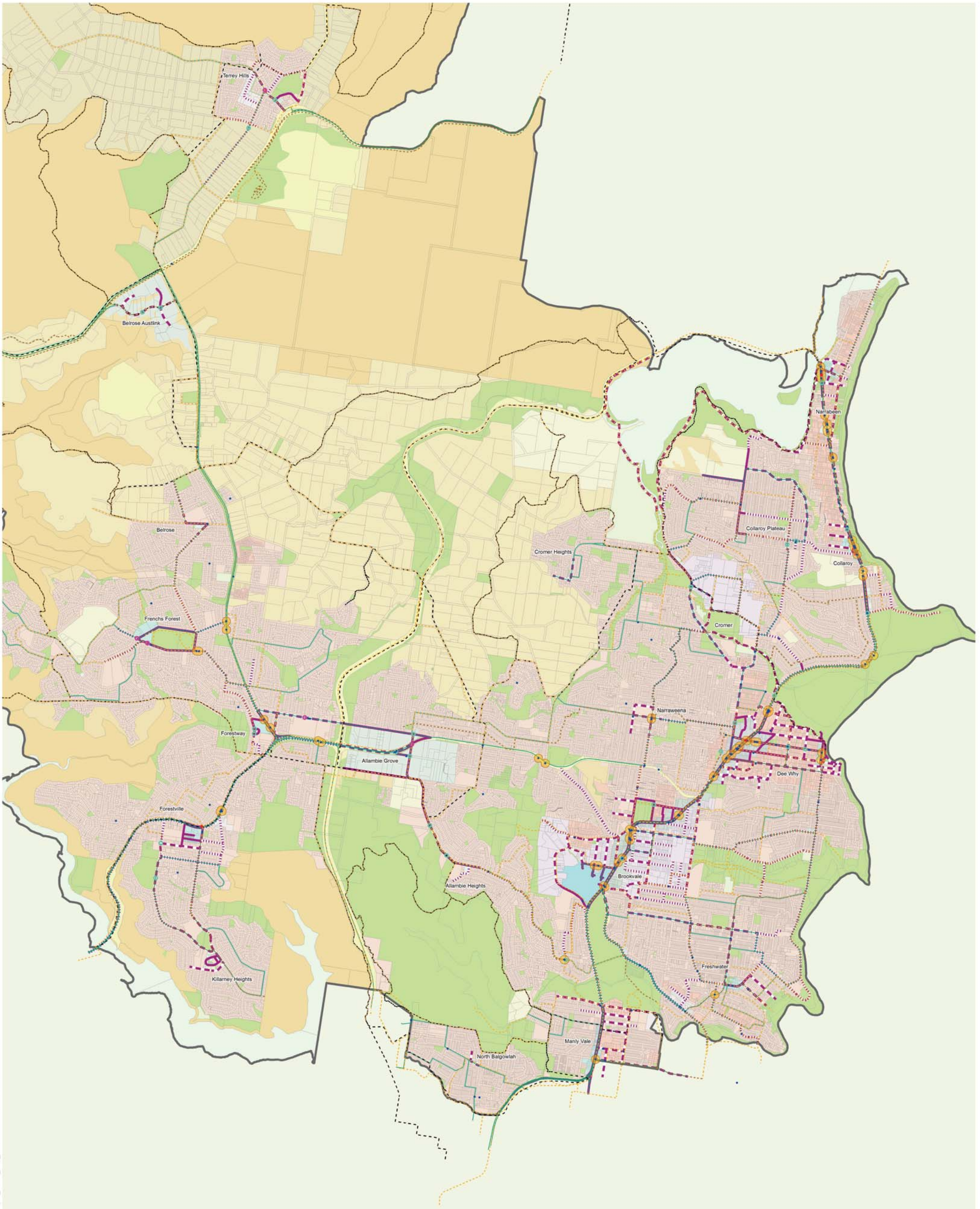
School Comment

Parking/access to schools needs reviewing.

Other Comments

Much of the current surge of works appears unnecessary, some of it is counterproductive and very little of it would pass any reasonable cost-benefit test. Surveys such as this illustrate how these decisions are made. Please stop creating hindrances rather than solving problems - ie bus lanes with no buses, new parking meters with no alternative means of transport, pedestrian traffic lights in the middle of nowhere. Proper bicycle paths and more buses are an example of more user (taxpayer) focused initiatives as they would allow more freedom rather than the current focus on stopping, slowing or taxing people through meters and fines. jonathan.ramsay@me.com

Appendix E
PAMP Pedestrian Network Map



Fatal accident within survey
Other accidents
Accident cluster
Recommended new crossing
Upgrade existing crossing
Existing bike routes
Proposed bike routes

Regional MUTS
Potential Regional MUTS
Bus routes
Primary Route
Secondary Route
Collector Route

B1 Neighbourhood Centre
B2 Local Centre
B3 Commercial Core
B4 Mixed Use
B5 Business Development
B7 Business Park
E1 National Parks and Nature Reserves

E2 Environmental Conservation
E3 Environmental Management
E4 Environmental Living
IN1 General Industrial
IN2 Light Industrial
R2 Low Density Residential
R3 Medium Density Residential

RE1 Public Recreation
RE2 Private Recreation
RU4 Rural Small Holdings
SP1 Special Activities
SP2 Infrastructure
W1 Natural Waterways

SCALE 1:15,000 @ A0

0 1 2km

Projection: MGA56

Warringah **PAMP**

FIGURE: Pedestrian Priority Routes

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PAMP Map by focus area

The figures below show detail of the Warringah PAMP map for each of the 20 PAMP focus areas.

The adjacent legend applies to all the PAMP focus areas maps.

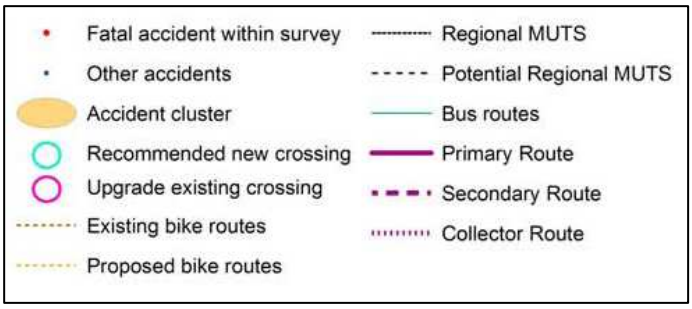


Figure E1: Allambie Grove focus area

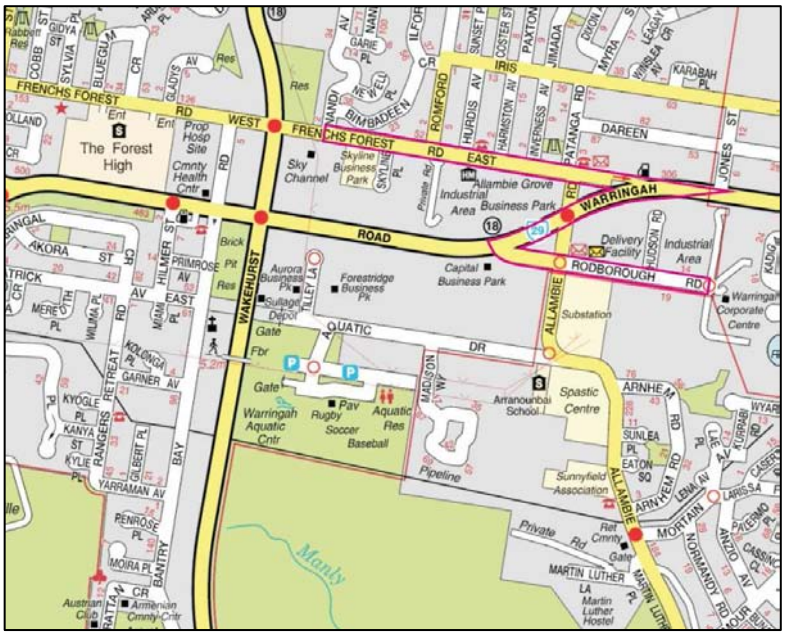


Figure E2: Allambie Heights focus area

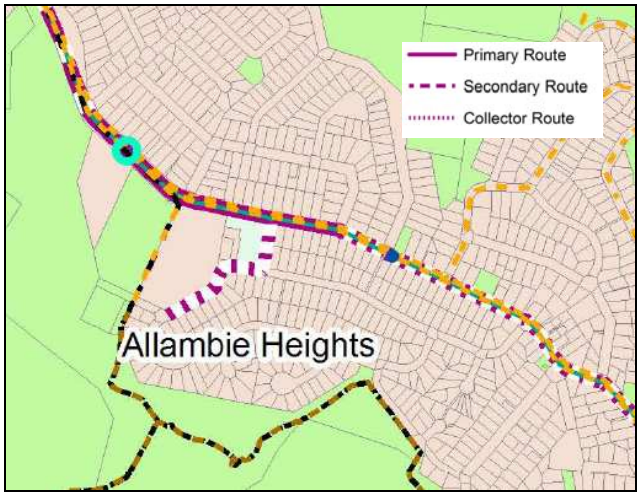


Figure E3: Belrose focus area

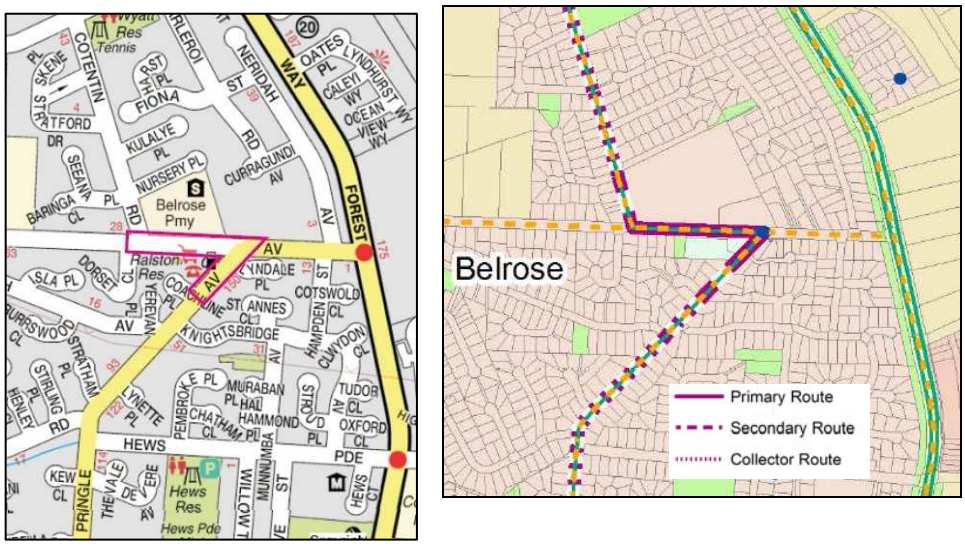


Figure E4: Belrose Austlink focus area

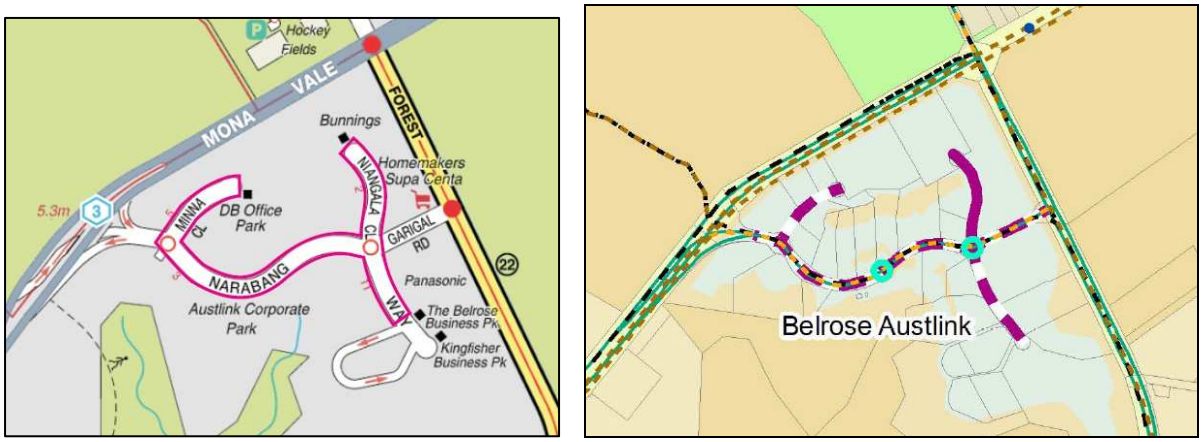


Figure E5: Brookvale focus area

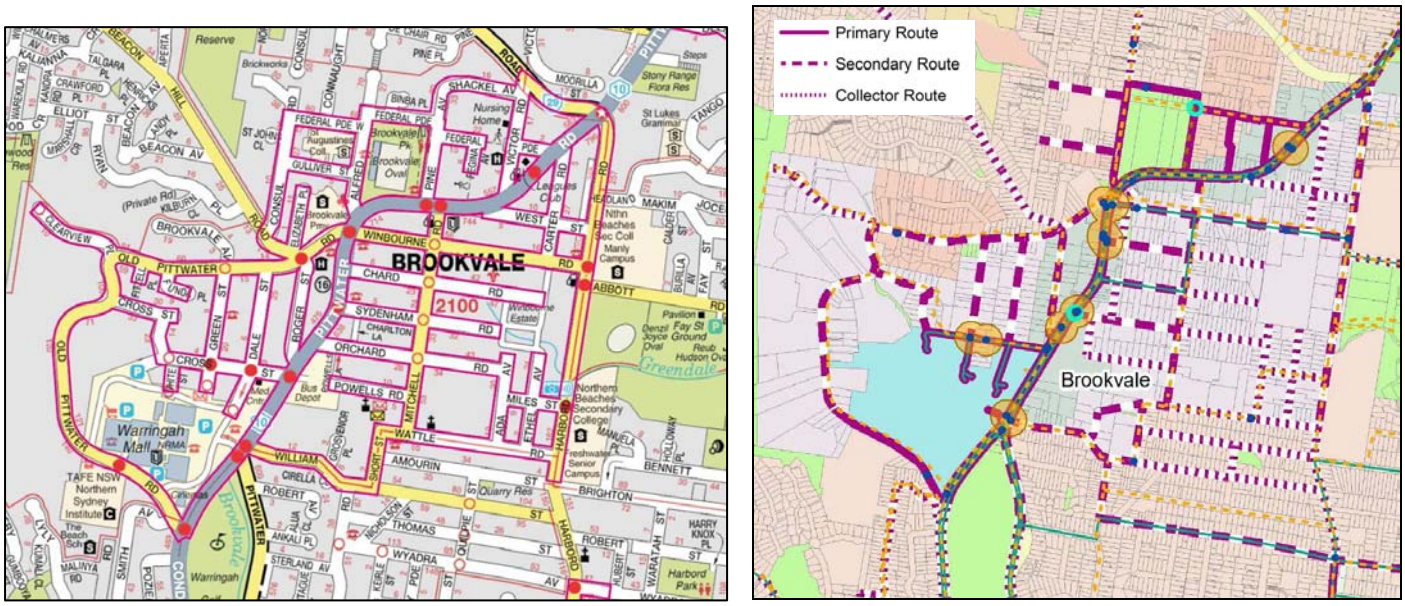


Figure E6: Collaroy focus area

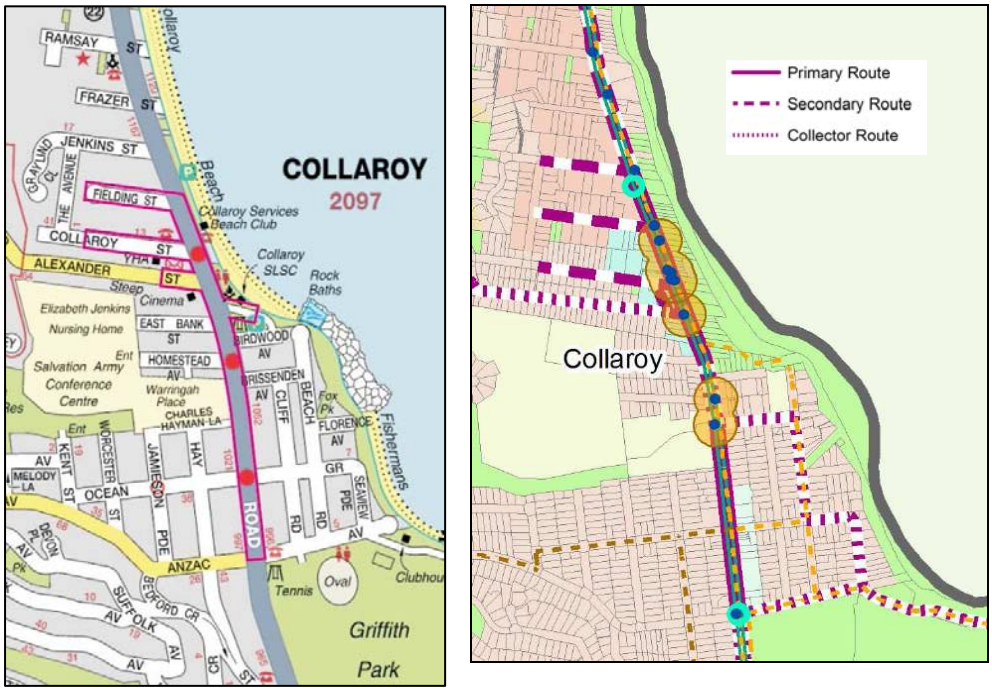


Figure E7: Collaroy Plateau focus area

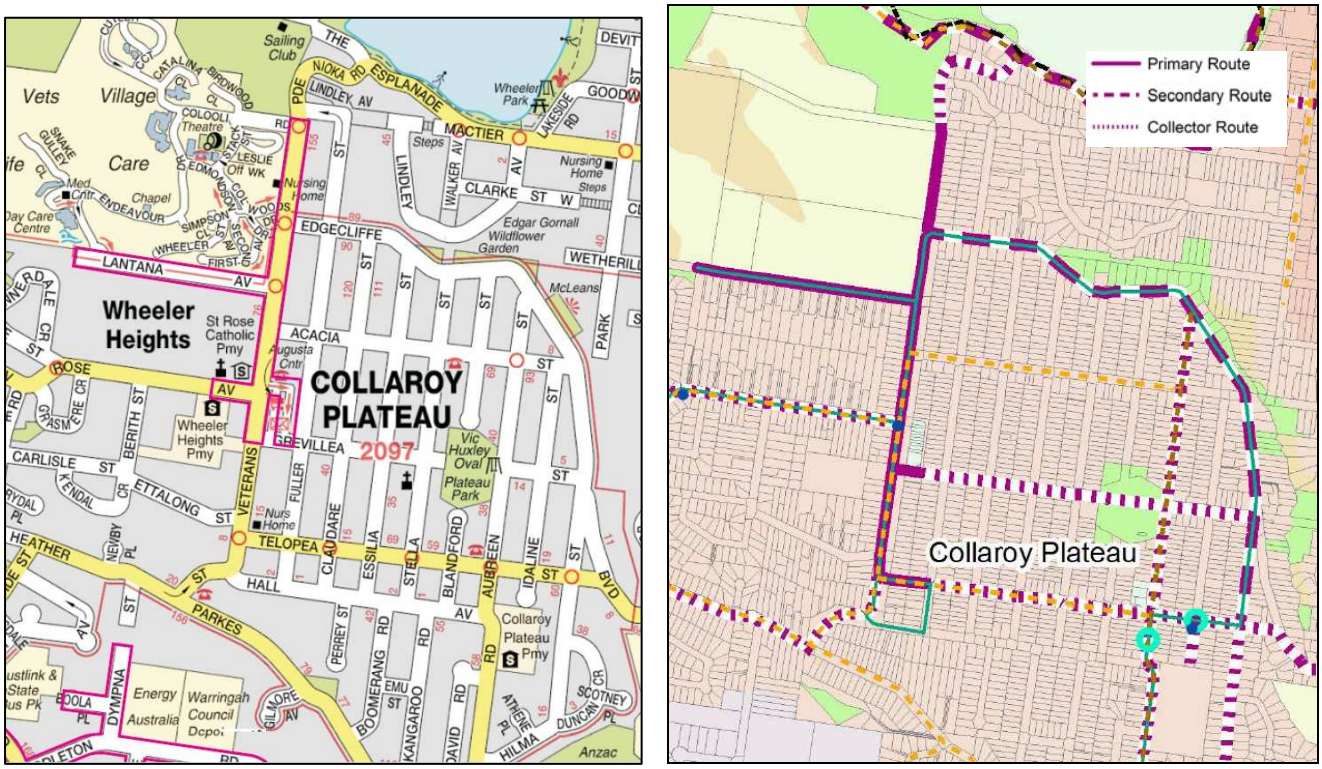
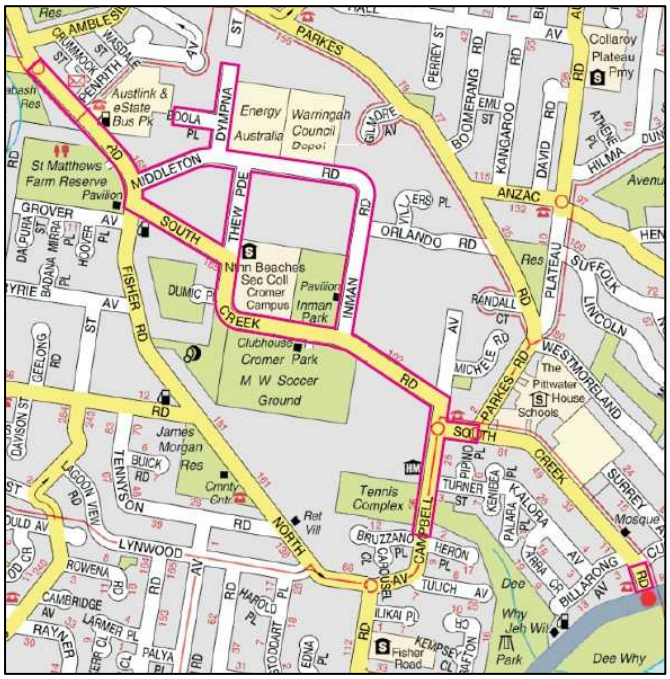


Figure E8: Cromer focus area



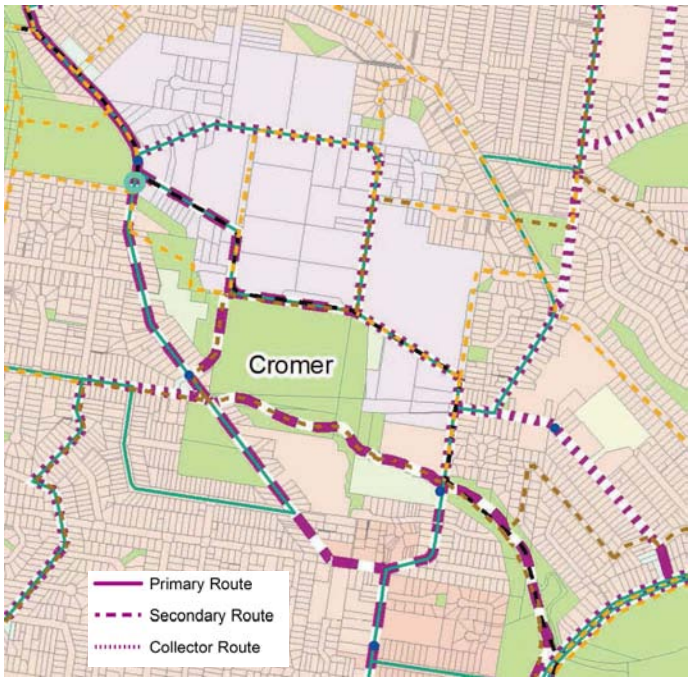
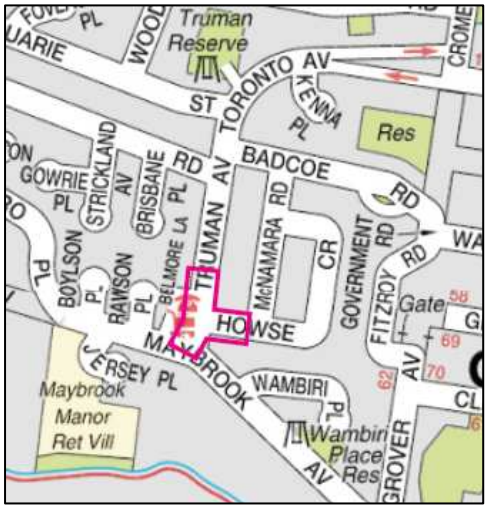


Figure E9: Cromer Heights focus area



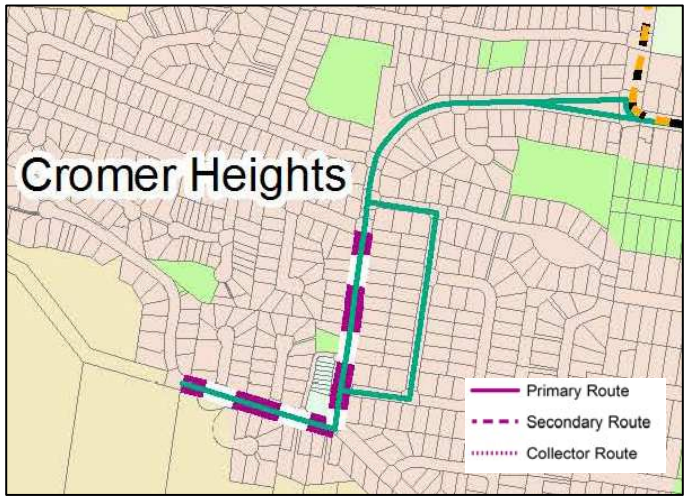
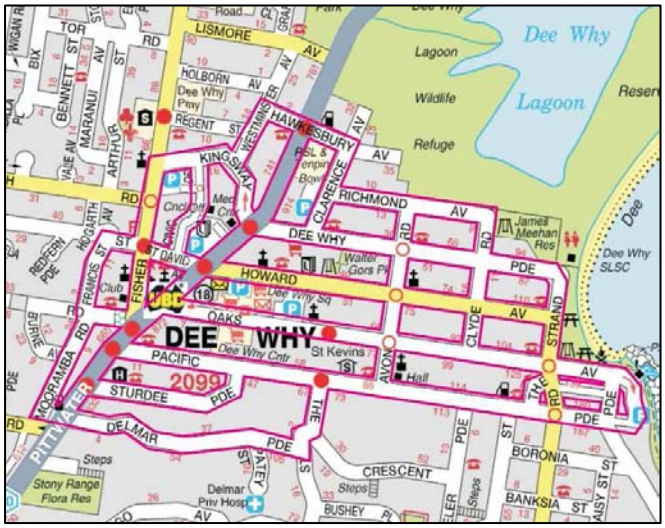


Figure E10: Dee Why focus area



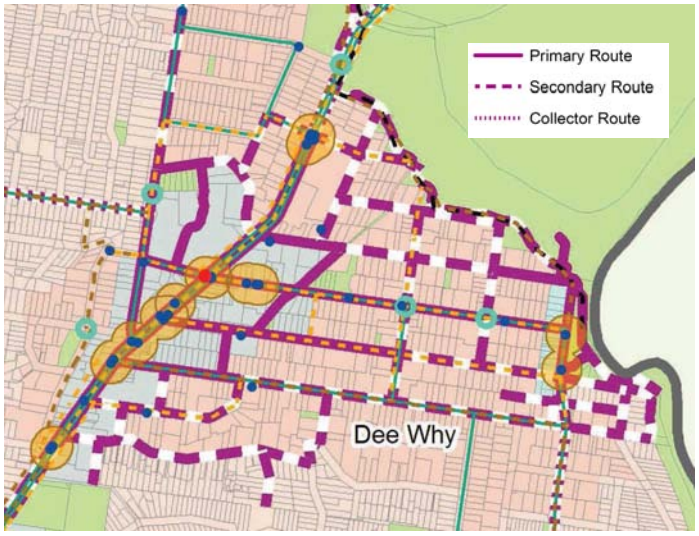
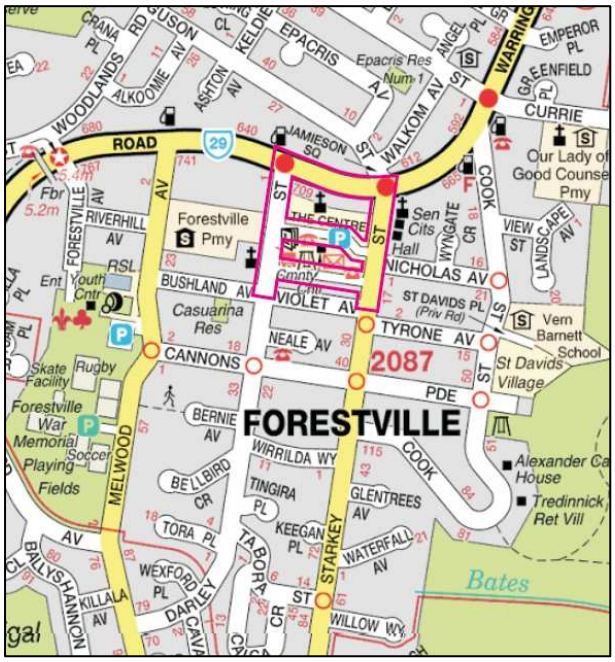


Figure E11: Forestville focus area



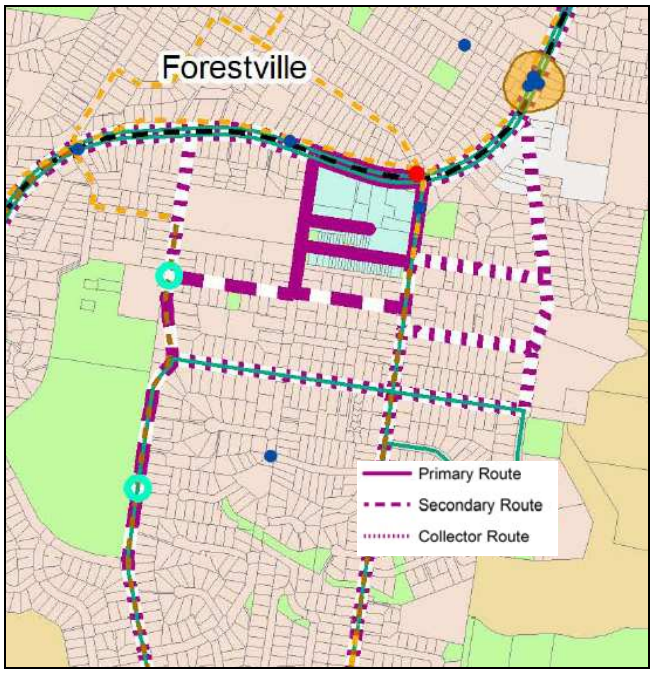


Figure E12: Forestway focus area

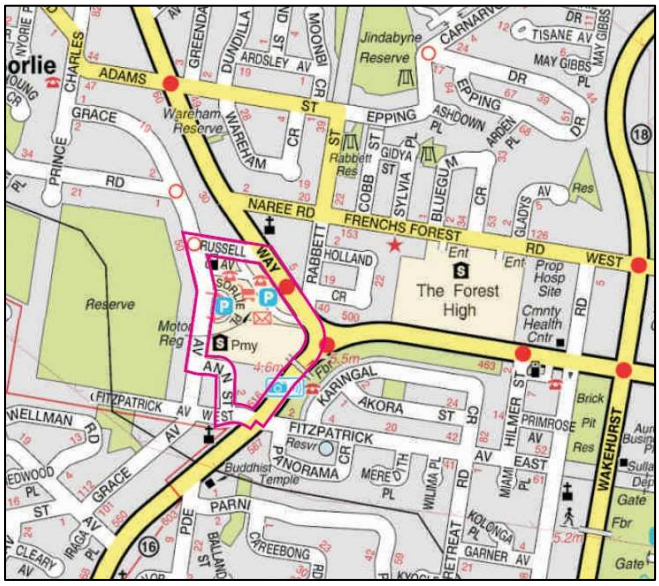
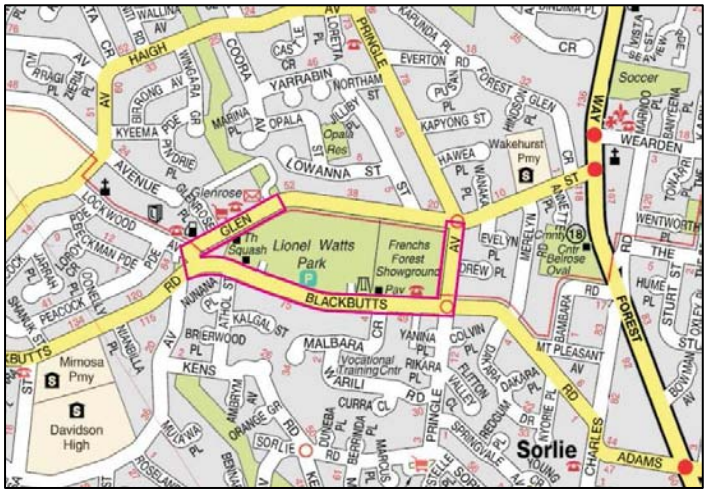


Figure E13: Frenchs Forest focus area



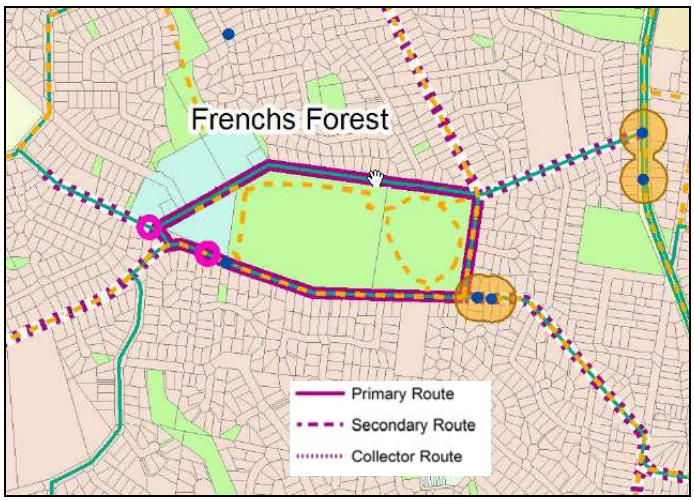


Figure E14: Freshwater focus area

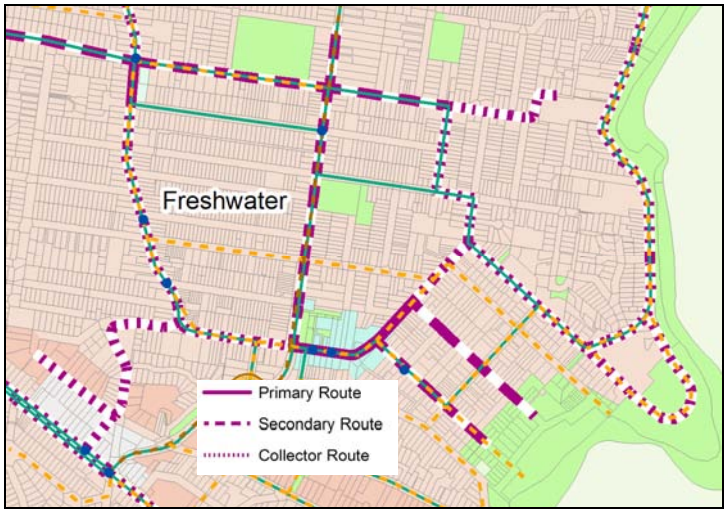
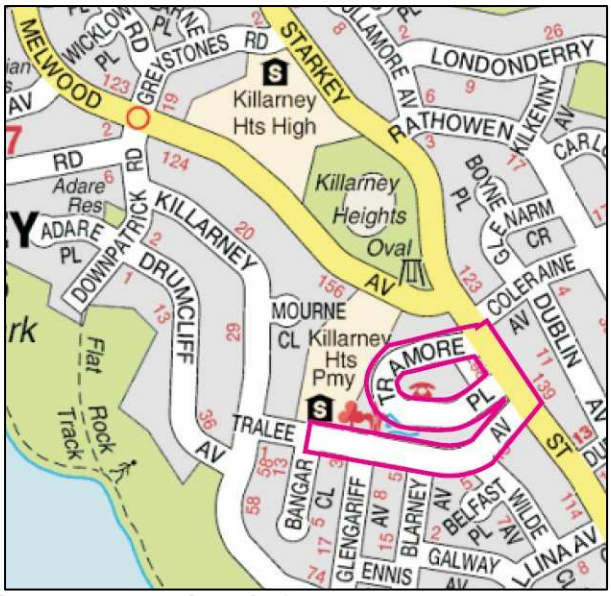


Figure E15: Killarney Heights focus area



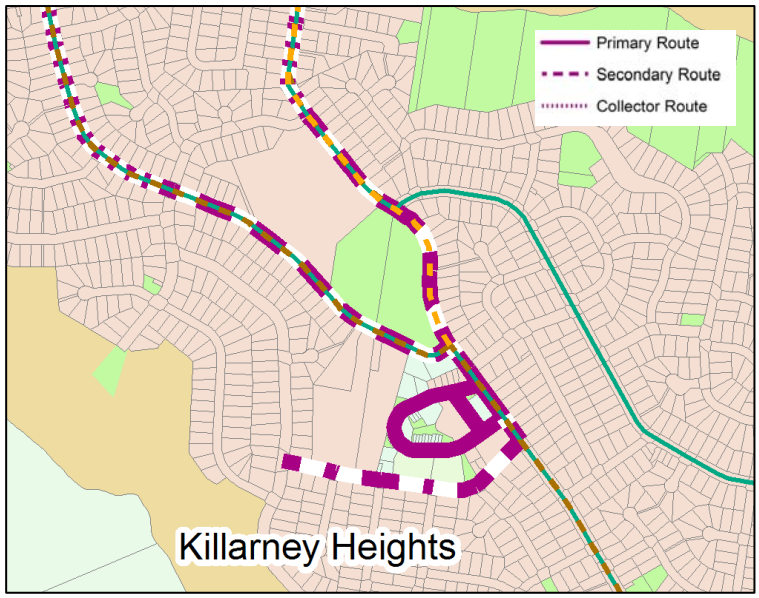
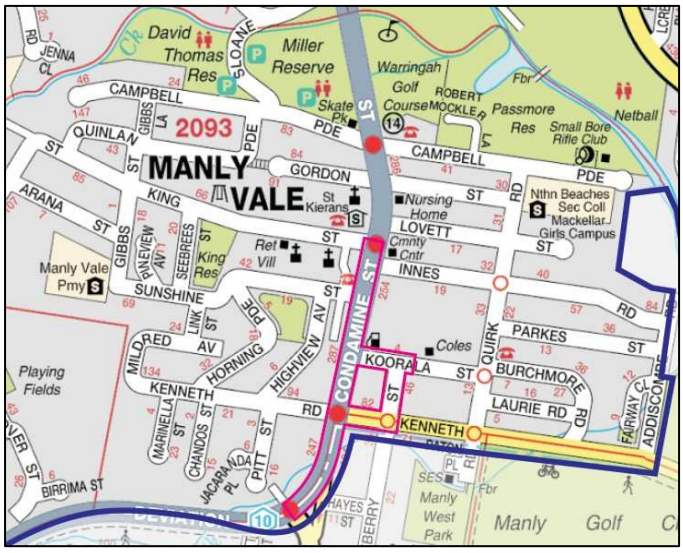


Figure E16: Manly Vale focus area



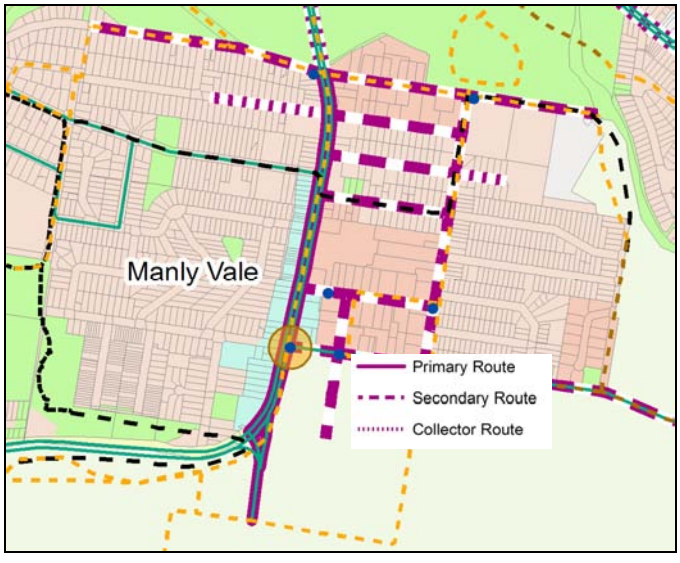


Figure E17: Narrabeen focus area

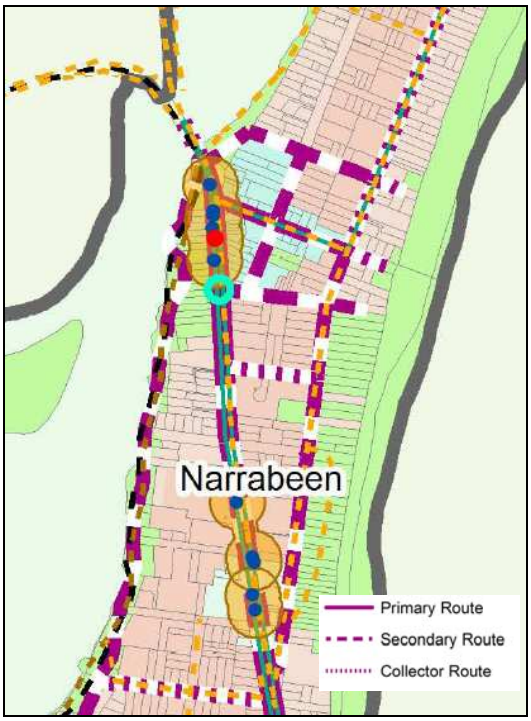
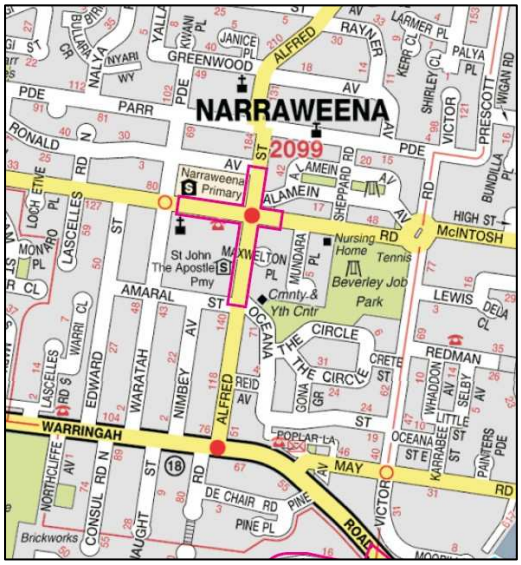


Figure E18: Narraweena focus area



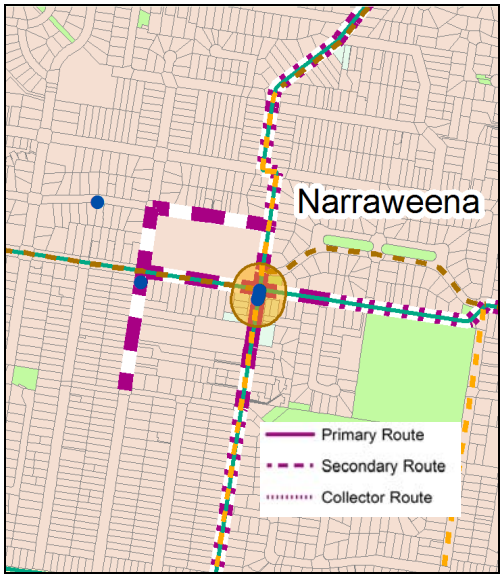


Figure E19: North Balgowlah focus area

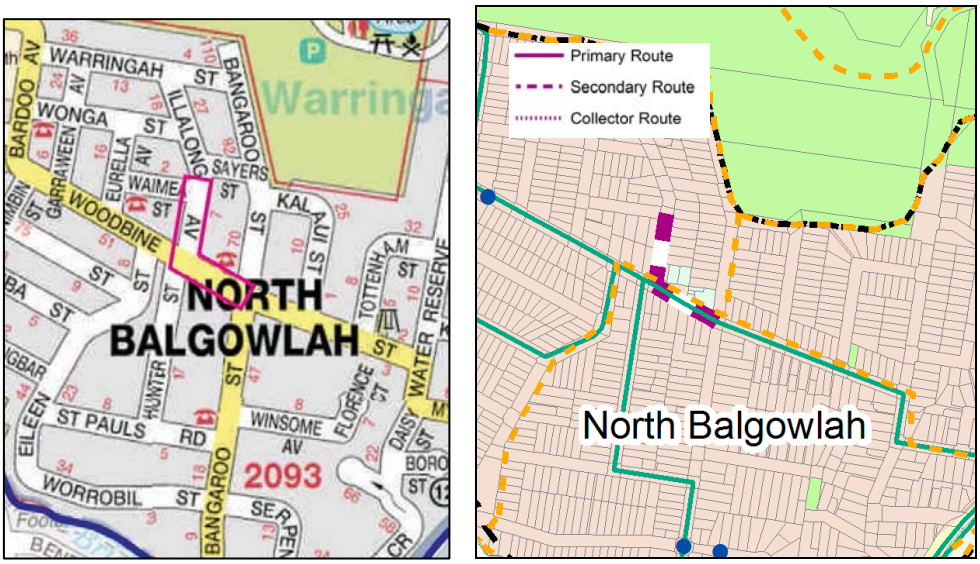
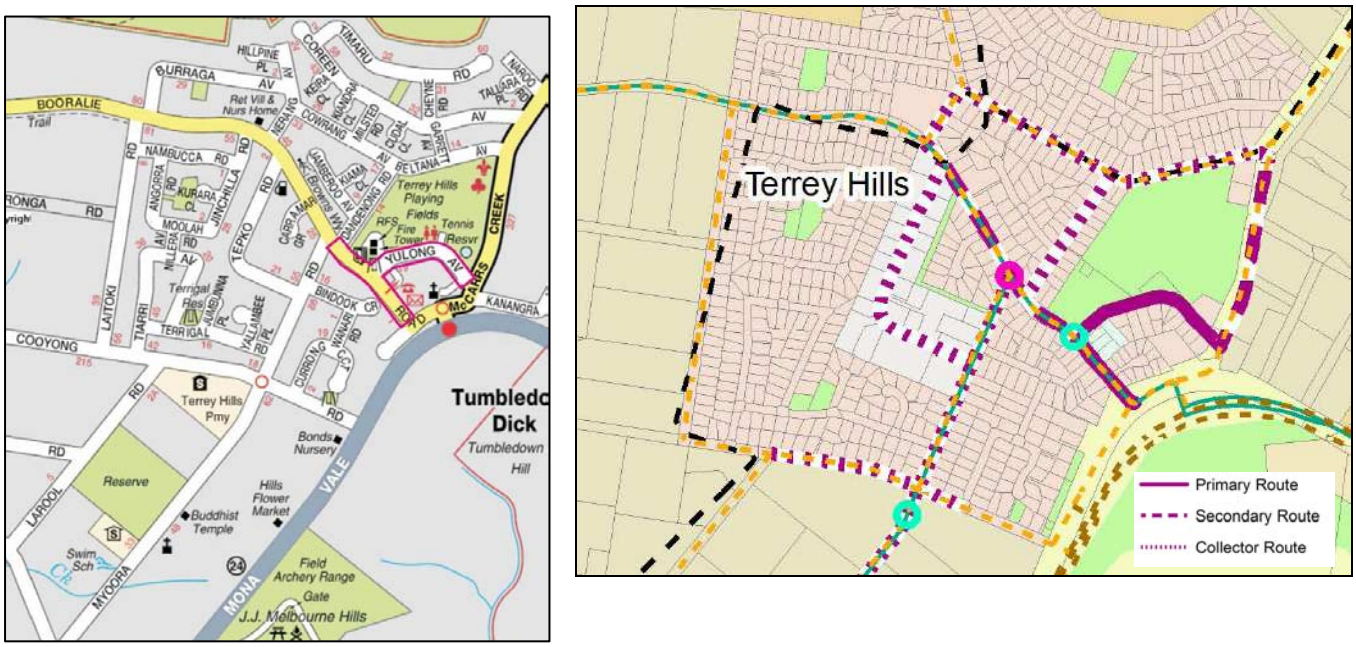
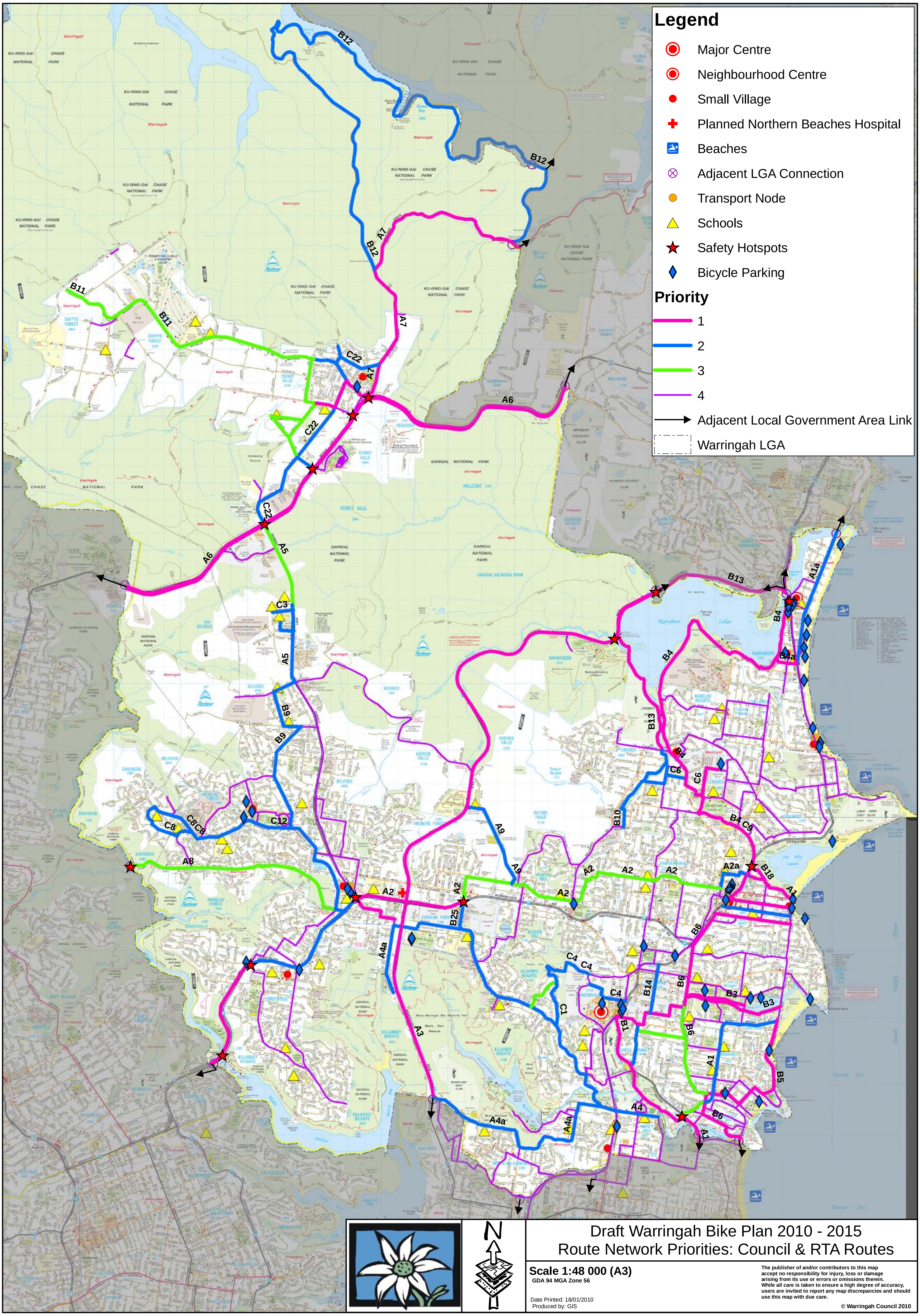


Figure E20: Terrey Hills focus area



Appendix F
Warringah Bike Plan and Regional Multiple Use Trail Strategy Maps



Draft Warringah Bike Plan 2010 - 2015
Route Network Priorities: Council & RTA Routes

Scale 1:48 000 (A3)
GDA 94 MGA Zone 56

Date Printed: 18/01/2010
Produced by: GIS

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Liberator General san Martin Drive
Centre Track
West Head Road
Perimeter Trail
Perimter Trail
KU-RING-GAI CHASE
Cullamine Track
Booralie Rd Link
Mccarres Creek Rd Link
Chiltern Track
Pittwater Link
Ku Ring Gai Chase National Park Link
Duckholes Track
Perimter Trail
DUFFYS FOREST
Weehalla Link
Killawarra Rd Link
Ku Ring Gai Chase National Park Link
Terry Hills Trail
Terry Hills Link
Killawarra Link
Cooyong Track
Cooyong Track
Neverfail Gully Trail
Aumina Rd Link
INGLESIDE
WARRIEWOOD
TERREY HILLS
Larool Track
Cooyong Track
Mona Vale Link
Larool Link
Belrose North Link
ELANORA HEIGHTS
NORTH NARRABEEN
Deep Creek Link
Slippery Dip Track
Slippery Dip Track
Narrabeen Lake Loop
Boundary Trig Trail
Mona Vale Rd Link
Kitchener St Link
Kitchener Track
Quarry Track
Belrose North Link
Slippery Dip Track
Wakehurst Parkway
NARRABEEN
Jamieson Track
Jamieson Track
Jamieson Track
Sport & Rec Link
Wakehurst Parkway Link
St Ives Link
Bare Creek Track
Heath Track
BELROSE
Sport & Rec Link
STIVES
Cascades Track
Heath Track
Belrose Link
Cromer Heights
CROMER
Cascades Track
Corymbia Crt Link
OXFORD FALLS
COLLAROY
Corymbia Crt Link
Cromer Link
Dee Why Link
Corymbia Crt Link
DAVIDSON
Wakehurst Parkway Link
Beacon Hill West Link
Davidson Track
Davidson Track
Davidson Link
Pipeline Tack
Beacon Hill Link
NARRAWEENA
FRENCHS FOREST
BEACON HILL
DEE WHY
Frenches Forest Link
Allambie Heights Link (U)
EAST KILLARA
Roseville Link
Bantry Bay Link
FORESTVILLE
Manly Circuit Trail
BROOKVALE
NORTH CURL CURL
Allambie Heights Link
CURL CURL
EAST LINDFIELD
ALLAMBIE HEIGHTS
NORTH MANLY
Engravings Track
HARBORD
KILLARNEY HEIGHTS
ROSEVILLE CHASE
Seaforth Link
Manly Circuit Trail
Burnt Bridge link
Burnt Bridge Link
Manly Link
MANLY VALE
QUEENSCLIFF
NORTH BALGOWLAH
Burnt Bridge Link
ROSEVILLE
CASTLE COVE
MIDDLE COVE
MIDDLE HARBOUR
SEAFORTH
BALGOWLAH
FAIRLIGHT

Existing
Potential Track
Existing - Requires upgrade
Suburb Boundary
Potential Urban Links

Regional Multiple Use Trail Strategy

MAP 2

Scale 1:22,500 @ A1
GDA 94 MGA Zone 56_1

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TracksTrails.mxd

Appendix G
PAMP Infrastructure Works Schedule

Appendix G-1 – New and Widened Footpath Options

Appendix G-2 – Footpath Maintenance Schedule

Appendix G-3 – New Pedestrian Crossing Facilities

Appendix G-1
New and Widened Footpath Options

unit cost $ 130.00 per m^2

Suburb	Road Name	Priority	Total Length (both sides of road) (m)	length of missing paths (m)	Option 1				Option 2								Total Score	Implementation Priority
					Cost of new footpath				Cost of new footpath where required				Cost of widening					
					Footpath widths (m)				Footpath widths (m)				Footpath widths (m)					
					1.5	1.8	2.0	2.4	1.5	1.8	2.0	2.4	1.5	1.8	2.0	2.4		
Allambie Grove	Allambie Road	P	2530	320		$ 592,000	$ 657,800	$ 789,400		$ 74,900	$ 83,200	$ 99,800		$ 172,400	$ 229,800	$ 344,800	64	MEDIUM
	Warringah Road	P	470			$ 110,000	$ 122,200	$ 146,600		$ -	$ -	$ -		$ 36,700	$ 48,900	$ 73,300	67	MEDIUM
		S	1780	890	$ 347,100	$ 416,500	$ 462,800		$ 173,600	$ 208,300	$ 231,400		$ 34,700	$ 69,400	$ 92,600		63	MEDIUM
	Frenchs Forest East	P	2130	20		$ 498,400	$ 553,800	$ 664,600		$ 4,700	$ 5,200	$ 6,200		$ 164,600	$ 219,400	$ 329,200	67	MEDIUM
	Aquatic Drive	P	1250	1250		$ 292,500	$ 325,000	$ 390,000		$ 292,500	$ 325,000	$ 390,000		$ -	$ -	$ -	68	MEDIUM
	Rodborough Road	P	370	370		$ 86,600	$ 96,200	$ 115,400		$ 86,600	$ 96,200	$ 115,400		$ -	$ -	$ -	62	MEDIUM
Allambie Heights	Allambie Road	P	1080			$ 252,700	$ 280,800	$ 337,000		$ -	$ -	$ -		$ 84,200	$ 112,300	$ 168,500	69	MEDIUM
		S	560		$ 109,200	$ 131,000	$ 145,600		$ -	$ -	$ -		$ 21,800	$ 43,700	$ 58,200		53	MEDIUM
		C	1380		$ 269,100				$ -				$ 53,800				48	LOW
	Roosevelt Avenue	C	430	255	$ 83,900				$ 49,700				$ 6,800				56	MEDIUM
	Grigor Place	C	200	100	$ 39,000				$ 19,500				$ 3,900				56	MEDIUM
Belrose	Ralston Avenue	P	520			$ 121,700	$ 135,200	$ 162,200		$ -	$ -	$ -		$ 40,600	$ 54,100	$ 81,100	69	MEDIUM
	Cotenton Road	S	210	105	$ 41,000	$ 49,100	$ 54,600		$ 20,500	$ 24,600	$ 27,300		$ 4,100	$ 8,200	$ 10,900		60	MEDIUM
		C	850	850	$ 165,800				$ 165,800				$ -				48	LOW
	Pringle Avenue	P	100			$ 23,400	$ 26,000	$ 31,200		$ -	$ -	$ -		$ 7,800	$ 10,400	$ 15,600	64	MEDIUM
		S	240	120	$ 46,800	$ 56,200	$ 62,400		$ 23,400	$ 28,100	$ 31,200		$ 4,700	$ 9,400	$ 12,500		50	MEDIUM
		C	1420	710	$ 276,900				$ 138,500				$ 27,700				48	LOW
Belrose Austlink	Niangala Close	P	480			$ 112,300	$ 124,800	$ 149,800		$ -	$ -	$ -		$ 37,400	$ 49,900	$ 74,900	65	MEDIUM
	Narabang Way	S	1710	120	$ 333,500	$ 400,100	$ 444,600		$ 23,400	$ 28,100	$ 31,200		$ 62,000	$ 124,000	$ 165,400		60	MEDIUM
	Minna Close	S	400		$ 78,000	$ 93,600	$ 104,000		$ -	$ -	$ -		$ 15,600	$ 31,200	$ 41,600		60	MEDIUM
	Garigal Road	S	400		$ 78,000	$ 93,600	$ 104,000		$ -	$ -	$ -		$ 15,600	$ 31,200	$ 41,600		61	MEDIUM
Brookvale	Alfred Road	P	670	200		$ 156,800	$ 174,200	$ 209,000		$ 46,800	$ 52,000	$ 62,400		$ 36,700	$ 48,900	$ 73,300	62	MEDIUM
		C	640	320	$ 124,800				$ 62,400				$ 12,500				51	MEDIUM
	Condamine Street	P	610			$ 142,700	$ 158,600	$ 190,300		$ -	$ -	$ -		$ 47,600	$ 63,400	$ 95,200	75	HIGH
		C	1710	850	$ 333,500				$ 165,800				$ 33,500				59	MEDIUM
	Cross Street	P	800			$ 187,200	$ 208,000	$ 249,600		$ -	$ -	$ -		$ 62,400	$ 83,200	$ 124,800	75	HIGH
		S	660		$ 128,700	$ 154,400	$ 171,600		$ -	$ -	$ -		$ 25,700	$ 51,500	$ 68,600		61	MEDIUM
	Federal Parade	P	1020	560		$ 238,700	$ 265,200	$ 318,200		$ 131,000	$ 145,600	$ 174,700		$ 35,900	$ 47,800	$ 71,800	65	MEDIUM
		S	500	300	$ 97,500	$ 117,000	$ 130,000		$ 58,500	$ 70,200	$ 78,000		$ 7,800	$ 15,600	$ 20,800		58	MEDIUM
	Green Street	P	230			$ 53,800	$ 59,800	$ 71,800		$ -	$ -	$ -		$ 17,900	$ 23,900	$ 35,900	70	HIGH
		S	630		$ 122,900	$ 147,400	$ 163,800		$ -	$ -	$ -		$ 24,600	$ 49,100	$ 65,500		58	MEDIUM
	Mitchell Road	S	1450		$ 282,800	$ 339,300	$ 377,000		$ -	$ -	$ -		$ 56,600	$ 113,100	$ 150,800		61	MEDIUM
	Old Pittwater Road	P	100			$ 23,400	$ 26,000	$ 31,200		$ -	$ -	$ -		$ 7,800	$ 10,400	$ 15,600	65	MEDIUM
		S	2930	200	$ 571,400	$ 685,600	$ 761,800		$ 39,000	$ 46,800	$ 52,000		$ 106,500	$ 212,900	$ 283,900		56	MEDIUM
	Pine Avenue	P	530	210		$ 124,000	$ 137,800	$ 165,400		$ 49,100	$ 54,600	$ 65,500		$ 25,000	$ 33,300	$ 49,900	57	MEDIUM
	Pittwater Road	C	1170	500	$ 228,200				$ 97,500				$ 26,100				83	HIGH
	Regina Avenue	P	190			$ 44,500	$ 49,400	$ 59,300		$ -	$ -	$ -		$ 14,800	$ 19,800	$ 29,600	57	MEDIUM
	Victor Road	P	330			$ 77,200	$ 85,800	$ 103,000		$ -	$ -	$ -		$ 25,700	$ 34,300	$ 51,500	57	MEDIUM
	Winbourne Road	S	1510		$ 294,500	$ 353,300	$ 392,600		$ -	$ -	$ -		$ 58,900	$ 117,800	$ 157,000		72	HIGH
	Chard Road	S	530		$ 103,400	$ 124,000	$ 137,800		$ -	$ -	$ -		$ 20,700	$ 41,300	$ 55,100		53	MEDIUM
		C	480		$ 93,600				$ -				$ 18,700				51	MEDIUM
	Corrie Road	S	380		$ 74,100	$ 88,900	$ 98,800		$ -	$ -	$ -		$ 14,800	$ 29,600	$ 39,500		50	MEDIUM
	Dale Street	S	670		$ 130,700	$ 156,800	$ 174,200		$ -	$ -	$ -		$ 26,100	$ 52,300	$ 69,700		56	MEDIUM
	Grosvenor Place	S	200		$ 39,000	$ 46,800	$ 52,000		$ -	$ -	$ -		$ 7,800	$ 15,600	$ 20,800		56	MEDIUM
	Gulliver Street	S	500		$ 97,500	$ 117,000	$ 130,000		$ -	$ -	$ -		$ 19,500	$ 39,000	$ 52,000		58	MEDIUM
	Harbord Road	S	2180		$ 425,100	$ 510,100	$ 566,800		$ -	$ -	$ -		$ 85,000	$ 170,000	$ 226,700		63	MEDIUM
		C	850		$ 165,800				$ -				$ 33,200				57	MEDIUM
	Orchard Road	S	660		$ 128,700	$ 154,400	$ 171,600		$ -	$ -	$ -		$ 25,700	$ 51,500	$ 68,600		53	MEDIUM
		C	560	230	$ 109,200				$ 44,900				$ 12,900				51	MEDIUM
	Roger Street	S	700		$ 136,500	$ 163,800	$ 182,000		$ -	$ -	$ -		$ 27,300	$ 54,600	$ 72,800		61	MEDIUM
	Short Street	S	370	35	$ 72,200	$ 86,600	$ 96,200		$ 6,800	$ 8,200	$ 9,100		$ 13,100	$ 26,100	$ 34,800		63	MEDIUM
	Sydenham Road	S	540		$ 105,300	$ 126,400	$ 140,400		$ -	$ -	$ -		$ 21,100	$ 42,100	$ 56,200		53	MEDIUM
		C	480	180	$ 93,600				$ 35,100				$ 11,700				51	MEDIUM
	Wattle Road	S	150		$ 29,300	$ 35,100	$ 39,000		$ -	$ -	$ -		$ 5,900	$ 11,700	$ 15,600		55	MEDIUM
		C	970	780	$ 189,200				$ 152,100				$ 7,400				58	MEDIUM
	William Street	S	860		$ 167,700	$ 201,200	$ 223,600		$ -	$ -	$ -		$ 33,500	$ 67,100	$ 89,400		55	MEDIUM
		C	1210	600	$ 236,000				$ 117,000				$ 23,800				48	LOW
	Wyadra Avenue	S	1510	700	$ 294,500	$ 353,300	$ 392,600		$ 136,500	$ 163,800	$ 182,000		$ 31,600	$ 63,200	$ 84,200		53	MEDIUM
	Abbott Road	C	540		$ 105,300				$ -				$ 21,100				51	MEDIUM
	Ada Avenue	C	600	500	$ 117,000				$ 97,500				$ 3,900				51	MEDIUM
	Allambie Road	C	1710		$ 333,500				$ -				$ 66,700				58	MEDIUM
	Amourin Street	C	1120	600	$ 218,400				$ 117,000				$ 20,300				48	LOW
	Beacon Hill Road	C	2160		$ 421,200				$ -				$ 84,200				62	MEDIUM
	Carter Road	C	740		$ 144,300				$ -				$ 28,900				51	MEDIUM
	Charlton Lane	C	240	120	$ 46,800				$ 23,400				$ 4,700				51	MEDIUM
	Clearview Place	C	630		$ 122,900				$ -				$ 24,600				51	MEDIUM

Suburb	Road Name	Priority	Total Length (both sides of road) (m)	length of missing paths (m)	Option 1				Option 2								Total Score	Implementation Priority
					Cost of new footpath				Cost of new footpath where required				Cost of widening					
					Footpath widths (m)				Footpath widths (m)				Footpath widths (m)					
					1.5	1.8	2.0	2.4	1.5	1.8	2.0	2.4	1.5	1.8	2.0	2.4		
	Ethel Avenue	C	600	450	$ 117,000				$ 87,800				$ 5,900				53	MEDIUM
	Fishbourne Road	C	80	80	$ 15,600				$ 15,600				$ -				48	LOW
	Kentwell Road	C	230		$ 44,900				$ -				$ 9,000				51	MEDIUM
	Miles Street	C	400	400	$ 78,000				$ 78,000				$ -				53	MEDIUM
	Orara Road	C	670	670	$ 130,700				$ 130,700				$ -				51	MEDIUM
	Powells Road	C	550		$ 107,300				$ -				$ 21,500				51	MEDIUM
	Quilpie Street	C	200		$ 39,000				$ -				$ 7,800				48	LOW
	Smith Avenue	C	1020	1020	$ 198,900				$ 198,900				$ -				48	LOW
	West Street	C	740		$ 144,300				$ -				$ 28,900				51	MEDIUM
Collaroy	Alexander Street	P	90			$ 21,100	$ 23,400	$ 28,100		$ -	$ -	$ -		$ 7,000	$ 9,400	$ 14,000	66	MEDIUM
		C	930		$ 181,400				$ -				$ 36,300				51	MEDIUM
	Pittwater Road	P	1120			$ 262,100	$ 291,200	$ 349,400		$ -	$ -	$ -		$ 87,400	$ 116,500	$ 174,700	87	HIGH
		C	1500	600	$ 292,500				$ 117,000				$ 35,100				71	HIGH
	Collaroy Street	S	630		$ 122,900	$ 147,400	$ 163,800		$ -	$ -	$ -		$ 24,600	$ 49,100	$ 65,500		52	MEDIUM
	Fielding Street	S	440		$ 85,800	$ 103,000	$ 114,400		$ -	$ -	$ -		$ 17,200	$ 34,300	$ 45,800		52	MEDIUM
	Jenkins Street	S	420		$ 81,900	$ 98,300	$ 109,200		$ -	$ -	$ -		$ 16,400	$ 32,800	$ 43,700		52	MEDIUM
	Anzac Avenue	C	580		$ 113,100				$ -				$ 22,600				56	MEDIUM
	Beach Road	C	490		$ 95,600				$ -				$ 19,100				50	MEDIUM
	Brissenden Avenue	C	370		$ 72,200				$ -				$ 14,400				50	MEDIUM
	Edgecliffe Boulevard	C	170		$ 33,200				$ -				$ 6,600				50	MEDIUM
	Ocean Grove	C	200		$ 39,000				$ -				$ 7,800				61	MEDIUM
	Seaview Parade	C	340		$ 66,300				$ -				$ 13,300				50	MEDIUM
	Telopea Street	C	170		$ 33,200				$ -				$ 6,600				50	MEDIUM
Collaroy Plateau	Grevillea Street	P	130			$ 30,400	$ 33,800	$ 40,600		$ -	$ -	$ -		$ 10,100	$ 13,500	$ 20,300	65	MEDIUM
		C	1500		$ 292,500				$ -				$ 58,500				51	MEDIUM
	Lantana Avenue	P	990			$ 231,700	$ 257,400	$ 308,900		$ -	$ -	$ -		$ 77,200	$ 103,000	$ 154,400	57	MEDIUM
	Telopea Street	P	230			$ 53,800	$ 59,800	$ 71,800		$ -	$ -	$ -		$ 17,900	$ 23,900	$ 35,900	65	MEDIUM
		C	1390		$ 271,100				$ -				$ 54,200				59	MEDIUM
	Veterans Parade	P	2010	470		$ 470,300	$ 522,600	$ 627,100		$ 110,000	$ 122,200	$ 146,600		$ 120,100	$ 160,200	$ 240,200	72	HIGH
		C	180		$ 35,100				$ -				$ 7,000				54	MEDIUM
	Edgecliffe Boulevard	S	2360		$ 460,200	$ 552,200	$ 613,600		$ -	$ -	$ -		$ 92,000	$ 184,100	$ 245,400		58	MEDIUM
	Hilma Street	S	410		$ 80,000	$ 95,900	$ 106,600		$ -	$ -	$ -		$ 16,000	$ 32,000	$ 42,600		58	MEDIUM
		C	1160		$ 226,200				$ -				$ 45,200				56	MEDIUM
	Ambleside Street	C	770		$ 150,200				$ -				$ 30,000				51	MEDIUM
	Anzac Avenue	C	20		$ 3,900				$ -				$ 800				51	MEDIUM
	Aubreen Street	C	1580		$ 308,100				$ -				$ 61,600				51	MEDIUM
	Heather Street	C	1080		$ 210,600				$ -				$ 42,100				51	MEDIUM
	Idaline Street	C	190		$ 37,100				$ -				$ 7,400				66	MEDIUM
	Parkes Road	C	30		$ 5,900				$ -				$ 1,200				51	MEDIUM
	Plateau Road	C	1530		$ 298,400				$ -				$ 59,700				51	MEDIUM
	Rose Avenue	C	2070		$ 403,700				$ -				$ 80,700				56	MEDIUM
	South Creek Road	C	1460		$ 284,700				$ -				$ 56,900				62	MEDIUM
Cromer	South Creek Road	P	1020	300		$ 238,700	$ 265,200	$ 318,200		$ 70,200	$ 78,000	$ 93,600		$ 56,200	$ 74,900	$ 112,300	71	HIGH
	South Creek Road	S	1520	100	$ 296,400	$ 355,700	$ 395,200		$ 19,500	$ 23,400	$ 26,000		$ 55,400	$ 110,800	$ 147,700		67	MEDIUM
	South Creek Road	C	1910	1050	$ 372,500				$ 204,800				$ 33,500				60	MEDIUM
	Campbell Avenue	S	400		$ 78,000	$ 93,600	$ 104,000		$ -	$ -	$ -		$ 15,600	$ 31,200	$ 41,600		61	MEDIUM
	Campbell Avenue	C	530	70	$ 103,400				$ 13,700				$ 17,900				54	MEDIUM
	Fisher Road North	S	2270		$ 442,700	$ 531,200	$ 590,200		$ -	$ -	$ -		$ 88,500	$ 177,100	$ 236,100		64	MEDIUM
	Lynwood Avenue	S	490		$ 95,600	$ 114,700	$ 127,400		$ -	$ -	$ -		$ 19,100	$ 38,200	$ 51,000		59	MEDIUM
	Alfred Street	C	1000		$ 195,000				$ -				$ 39,000				48	LOW
	Carawa Road	C	680		$ 132,600				$ -				$ 26,500				51	MEDIUM
	Inman Road	C	790	460	$ 154,100				$ 89,700				$ 12,900				48	LOW
	Middleton Road	C	1280	445	$ 249,600				$ 86,800				$ 32,600				48	LOW
	Parkes Road	C	580		$ 113,100				$ -				$ 22,600				48	LOW
Cromer Heights	Maybrook Avenue	S	430		$ 83,900	$ 100,600	$ 111,800		$ -	$ -	$ -		$ 16,800	$ 33,500	$ 44,700		53	MEDIUM
	Truman Avenue	S	540	270	$ 105,300	$ 126,400	$ 140,400		$ 52,700	$ 63,200	$ 70,200		$ 10,500	$ 21,100	$ 28,100		59	MEDIUM
	Civic Parade	P	580			$ 135,700	$ 150,800	$ 181,000		$ -	$ -	$ -		$ 45,200	$ 60,300	$ 90,500	65	MEDIUM
	Dee Why Parade	P	740			$ 173,200	$ 192,400	$ 230,900		$ -	$ -	$ -		$ 57,700	$ 77,000	$ 115,400	66	MEDIUM
		S	810	100	$ 158,000	$ 189,500	$ 210,600		$ 19,500	$ 23,400	$ 26,000		$ 27,700	$ 55,400	$ 73,800		56	MEDIUM
	Fisher Road	P	890			$ 208,300	$ 231,400	$ 277,700		$ -	$ -	$ -		$ 69,400	$ 92,600	$ 138,800	68	MEDIUM
		S	1190		$ 232,100	$ 278,500	$ 309,400		$ -	$ -	$ -		$ 46,400	$ 92,800	$ 123,800		63	MEDIUM
	Howard Avenue	P	1830			$ 428,200	$ 475,800	$ 571,000		$ -	$ -	$ -		$ 142,700	$ 190,300	$ 285,500	74	HIGH
	Kingsway	P	230			$ 53,800	$ 59,800	$ 71,800		$ -	$ -	$ -		$ 17,900	$ 23,900	$ 35,900	62	MEDIUM
		S	560	60	$ 109,200	$ 131,000	$ 145,600		$ 11,700	$ 14,000	$ 15,600		$ 19,500	$ 39,000	$ 52,000		53	MEDIUM
	Oaks Avenue	S	1160		$ 226,200	$ 271,400	$ 301,600		$ -	$ -	$ -		$ 45,200	$ 90,500	$ 120,600		72	HIGH
	Pacific Parade	P	640			$ 149,800	$ 166,400	$ 199,700		$ -	$ -	$ -		$ 49,900	$ 66,600	$ 99,800	77	HIGH
		S	2080	80	$ 405,600	$ 486,700	$ 540,800		$ 15,600	$ 18,700	$ 20,800		$ 78,000	$ 156,000	$ 208,000		58	MEDIUM

Suburb	Road Name	Priority	Total Length (both sides of road) (m)	length of missing paths (m)	Option 1				Option 2								Total Score	Implementation Priority
					Cost of new footpath				Cost of new footpath where required				Cost of widening					
					Footpath widths (m)				Footpath widths (m)				Footpath widths (m)					
					1.5	1.8	2.0	2.4	1.5	1.8	2.0	2.4	1.5	1.8	2.0	2.4		
Dee Why	Pittwater Road	S	680		$ 132,600	$ 159,100	$ 176,800		$ -	$ -	$ -		$ 26,500	$ 53,000	$ 70,700		88	HIGH
		C	2620	1310	$ 510,900				$ 255,500				$ 51,100				74	HIGH
	South Creek Road	P	200			$ 46,800	$ 52,000	$ 62,400		$ -	$ -	$ -		$ 15,600	$ 20,800	$ 31,200	65	MEDIUM
	St David Avenue	P	330			$ 77,200	$ 85,800	$ 103,000		$ -	$ -	$ -		$ 25,700	$ 34,300	$ 51,500	85	HIGH
	Sturdee Parade	S	880	80	$ 171,600	$ 205,900	$ 228,800		$ 15,600	$ 18,700	$ 20,800		$ 31,200	$ 62,400	$ 83,200		55	MEDIUM
	The Strand	P	590			$ 138,100	$ 153,400	$ 184,100		$ -	$ -	$ -		$ 46,000	$ 61,400	$ 92,000	83	HIGH
		S	180		$ 35,100	$ 42,100	$ 46,800		$ -	$ -	$ -		$ 7,000	$ 14,000	$ 18,700		56	MEDIUM
	Avon Road	S	970		$ 189,200	$ 227,000	$ 252,200		$ -	$ -	$ -		$ 37,800	$ 75,700	$ 100,900		58	MEDIUM
	Carew Street	S	160		$ 31,200	$ 37,400	$ 41,600		$ -	$ -	$ -		$ 6,200	$ 12,500	$ 16,600		50	MEDIUM
	Clarence Avenue	S	740		$ 144,300	$ 173,200	$ 192,400		$ -	$ -	$ -		$ 28,900	$ 57,700	$ 77,000		59	MEDIUM
	Clyde Road	S	720		$ 140,400	$ 168,500	$ 187,200		$ -	$ -	$ -		$ 28,100	$ 56,200	$ 74,900		58	MEDIUM
	Delmar Parade	S	1280		$ 249,600	$ 299,500	$ 332,800		$ -	$ -	$ -		$ 49,900	$ 99,800	$ 133,100		50	MEDIUM
	Griffin Road	S	130		$ 25,400	$ 30,400	$ 33,800		$ -	$ -	$ -		$ 5,100	$ 10,100	$ 13,500		56	MEDIUM
		C	1480		$ 288,600				$ -				$ 57,700				54	MEDIUM
	Hawkesbury Avenue	S	740		$ 144,300	$ 173,200	$ 192,400		$ -	$ -	$ -		$ 28,900	$ 57,700	$ 77,000		63	MEDIUM
	Monash Parade	S	220		$ 42,900	$ 51,500	$ 57,200		$ -	$ -	$ -		$ 8,600	$ 17,200	$ 22,900		50	MEDIUM
	Patey Street	S	290		$ 56,600	$ 67,900	$ 75,400		$ -	$ -	$ -		$ 11,300	$ 22,600	$ 30,200		50	MEDIUM
	Richmond Avenue	S	810		$ 158,000	$ 189,500	$ 210,600		$ -	$ -	$ -		$ 31,600	$ 63,200	$ 84,200		53	MEDIUM
	The Crescent	S	270		$ 52,700	$ 63,200	$ 70,200		$ -	$ -	$ -		$ 10,500	$ 21,100	$ 28,100		50	MEDIUM
	Westminster Avenue	S	320		$ 62,400	$ 74,900	$ 83,200		$ -	$ -	$ -		$ 12,500	$ 25,000	$ 33,300		53	MEDIUM
	Hadleigh Avenue	C	20		$ 3,900				$ -				$ 800				48	LOW
	Mcintosh Road	C	1120		$ 218,400				$ -				$ 43,700				54	MEDIUM
Forestville	Darley Street	P	560	100		$ 131,000	$ 145,600	$ 174,700		$ 23,400	$ 26,000	$ 31,200		$ 35,900	$ 47,800	$ 71,800	70	HIGH
	Starkey Street	P	320			$ 74,900	$ 83,200	$ 99,800		$ -	$ -	$ -		$ 25,000	$ 33,300	$ 49,900	67	MEDIUM
		S	190		$ 37,100	$ 44,500	$ 49,400		$ -	$ -	$ -		$ 7,400	$ 14,800	$ 19,800		56	MEDIUM
		C	1260		$ 245,700				$ -				$ 49,100				48	LOW
	Warringah Road	P	450			$ 105,300	$ 117,000	$ 140,400		$ -	$ -	$ -		$ 35,100	$ 46,800	$ 70,200	88	HIGH
		C	5890		$ 1,148,600				$ -				$ 229,700				71	HIGH
	Bushland Avenue	S	490	245	$ 95,600	$ 114,700	$ 127,400		$ 47,800	$ 57,300	$ 63,700		$ 9,600	$ 19,100	$ 25,500		53	MEDIUM
	Melwood Avenue	S	1170	200	$ 228,200	$ 273,800	$ 304,200		$ 39,000	$ 46,800	$ 52,000		$ 37,800	$ 75,700	$ 100,900		61	MEDIUM
		C	910	910	$ 177,500				$ 177,500				$ -				51	MEDIUM
	Violet Avenue	S	440	220	$ 85,800	$ 103,000	$ 114,400		$ 42,900	$ 51,500	$ 57,200		$ 8,600	$ 17,200	$ 22,900		53	MEDIUM
	Cannons Parade	C	1400	1350	$ 273,000				$ 263,300				$ 2,000				48	LOW
	Cook Street	C	1200		$ 234,000				$ -				$ 46,800				57	MEDIUM
	Nicholas Avenue	C	520	260	$ 101,400				$ 50,700				$ 10,100				51	MEDIUM
	Tyrone Avenue	C	510	255	$ 99,500				$ 49,700				$ 9,900				48	LOW
Forestway	Forest Way	P	830			$ 194,200	$ 215,800	$ 259,000		$ -	$ -	$ -		$ 64,700	$ 86,300	$ 129,500	85	HIGH
		C	670		$ 130,700				$ -				$ 26,100				55	MEDIUM
	Grace Avenue	P	360			$ 84,200	$ 93,600	$ 112,300		$ -	$ -	$ -		$ 28,100	$ 37,400	$ 56,200	65	MEDIUM
		S	240		$ 46,800	$ 56,200	$ 62,400		$ -	$ -	$ -		$ 9,400	$ 18,700	$ 25,000		58	MEDIUM
		C	1020		$ 198,900				$ -				$ 39,800				48	LOW
	Russell Avenue	P	310			$ 72,500	$ 80,600	$ 96,700		$ -	$ -	$ -		$ 24,200	$ 32,200	$ 48,400	68	MEDIUM
	Frenchs Forest Road West	S	1580		$ 308,100	$ 369,700	$ 410,800		$ -	$ -	$ -		$ 61,600	$ 123,200	$ 164,300		70	HIGH
	Naree Road	S	480	400	$ 93,600	$ 112,300	$ 124,800		$ 78,000	$ 93,600	$ 104,000		$ 3,100	$ 6,200	$ 8,300		60	MEDIUM
	Rabbett Street	S	480	480	$ 93,600	$ 112,300	$ 124,800		$ 93,600	$ 112,300	$ 124,800		$ -	$ -	$ -		58	MEDIUM
	Adams Street	C	570		$ 111,200				$ -				$ 22,200				51	MEDIUM
	Ann Street	C	370	330	$ 72,200				$ 64,400				$ 1,600				58	MEDIUM
	Blackbutts Road	C	280		$ 54,600				$ -				$ 10,900				51	MEDIUM
	Fitzpatrick Avenue West	C	150	150	$ 29,300				$ 29,300				$ -				58	MEDIUM
	Greendale Avenue	C	640		$ 124,800				$ -				$ 25,000				48	LOW
	Prince Charles Road	C	400		$ 78,000				$ -				$ 15,600				51	MEDIUM
	Warringah Road	C	3030		$ 590,900				$ -				$ 118,200				59	MEDIUM
Frenchs Forest	Blackbutts Road	P	1310			$ 306,500	$ 340,600	$ 408,700		$ -	$ -	$ -		$ 102,200	$ 136,200	$ 204,400	62	MEDIUM
		C	1770		$ 345,200				$ -				$ 69,000				51	MEDIUM
	Glen Street	P	1550	775		$ 362,700	$ 403,000	$ 483,600		$ 181,400	$ 201,500	$ 241,800		$ 60,500	$ 80,600	$ 120,900	62	MEDIUM
		C	760	380	$ 148,200				$ 74,100				$ 14,800				51	MEDIUM
	Lockwood Avenue	C	540	270	$ 105,300				$ 52,700				$ 10,500				54	MEDIUM
	Pringle Avenue	P	450	450		$ 105,300	$ 117,000	$ 140,400		$ 105,300	$ 117,000	$ 140,400		$ -	$ -	$ -	59	MEDIUM
		C	1230	615	$ 239,900				$ 119,900				$ 24,000				51	MEDIUM
	Albert Street	C	410		$ 80,000				$ -				$ 16,000				54	MEDIUM
	Harbord Road	P	110			$ 25,700	$ 28,600	$ 34,300		$ -	$ -	$ -		$ 8,600	$ 11,400	$ 17,200	73	HIGH
		C	1280		$ 249,600				$ -				$ 49,900				59	MEDIUM
	Lawrence Street	C	950		$ 185,300				$ -				$ 37,100				54	MEDIUM
	Kooloora Avenue	S	850		$ 165,800	$ 198,900	$ 221,000		$ -	$ -	$ -		$ 33,200	$ 66,300	$ 88,400		59	MEDIUM
	Moore Road	S	790		$ 154,100	$ 184,900	$ 205,400		$ -	$ -	$ -		$ 30,800	$ 61,600	$ 82,200		64	MEDIUM
	Oliver Street	S	1650		$ 321,800	$ 386,100	$ 429,000		$ -	$ -	$ -		$ 64,400	$ 128,700	$ 171,600		69	MEDIUM
	Wyadra Avenue	S	1620	600	$ 315,900	$ 379,100	$ 421,200		$ 117,000	$ 140,400	$ 156,000		$ 39,800	$ 79,600	$ 106,100		58	MEDIUM
		C	440		$ 85,800				$ -				$ 17,200				48	LOW

Suburb	Road Name	Priority	Total Length (both sides of road) (m)	length of missing paths (m)	Option 1				Option 2								Total Score	Implementation Priority
					Cost of new footpath				Cost of new footpath where required				Cost of widening					
					Footpath widths (m)				Footpath widths (m)				Footpath widths (m)					
					1.5	1.8	2.0	2.4	1.5	1.8	2.0	2.4	1.5	1.8	2.0	2.4		
Freshwater	Abbott Road	C	2450	900	$ 477,800				$ 175,500				$ 60,500				56	MEDIUM
	Batho Street	C	210	210	$ 41,000				$ 41,000				$ -				48	LOW
	Carlton Street	C	240		$ 46,800				$ -				$ 9,400				48	LOW
	Carrington Parade	C	2530	600	$ 493,400				$ 117,000				$ 75,300				51	MEDIUM
	Evans Street	C	1110		$ 216,500				$ -				$ 43,300				51	MEDIUM
	Foam Street	C	440	220	$ 85,800				$ 42,900				$ 8,600				48	LOW
	Girard Road	C	260	130	$ 50,700				$ 25,400				$ 5,100				54	MEDIUM
	Griffin Road	C	1450		$ 282,800				$ -				$ 56,600				59	MEDIUM
	Lumsdaine Drive	C	910	455	$ 177,500				$ 88,700				$ 17,700				54	MEDIUM
	Cavill Street	C	310	20	$ 60,500				$ 3,900				$ 11,300				59	MEDIUM
	Dalley Street	C	150		$ 29,300				$ -				$ 5,900				54	MEDIUM
	Queenscliffe Road	C	260		$ 50,700				$ -				$ 10,100				51	MEDIUM
	Greycliffe Road	C	310		$ 60,500				$ -				$ 12,100				59	MEDIUM
	Bridge Road	C	150		$ 29,300				$ -				$ 5,900				54	MEDIUM
	Park Street	C	370		$ 72,200				$ -				$ 14,400				48	LOW
	Pitt Road	C	1040		$ 202,800				$ -				$ 40,600				59	MEDIUM
	Pittwater Road	C	2540		$ 495,300				$ -				$ 99,100				67	MEDIUM
	Rowe Street	C	480	350	$ 93,600				$ 68,300				$ 5,100				53	MEDIUM
	Waine Street	C	520	255	$ 101,400				$ 49,700				$ 10,300				50	MEDIUM
	Wyndora Avenue	C	200	100	$ 39,000				$ 19,500				$ 3,900				48	LOW
Killarney Heights	Starkey Street	P	130			$ 30,400	$ 33,800	$ 40,600		$ -	$ -	$ -		$ 10,100	$ 13,500	$ 20,300	69	MEDIUM
		S	1240		$ 241,800	$ 290,200	$ 322,400		$ -	$ -	$ -		$ 48,400	$ 96,700	$ 129,000		56	MEDIUM
		C	380		$ 74,100				$ -				$ 14,800				48	LOW
	Tramore Place	P	970			$ 227,000	$ 252,200	$ 302,600		$ -	$ -	$ -		$ 75,700	$ 100,900	$ 151,300	74	HIGH
	Melwood Avenue	S	1140	1140	$ 222,300	$ 266,800	$ 296,400		$ 222,300	$ 266,800	$ 296,400		$ -	$ -	$ -		65	MEDIUM
		C	720	300	$ 140,400				$ 58,500				$ 16,400				51	MEDIUM
	Tralee Avenue	S	890	445	$ 173,600	$ 208,300	$ 231,400		$ 86,800	$ 104,100	$ 115,700		$ 17,400	$ 34,700	$ 46,300		59	MEDIUM
Manly Vale	Condamine Street	P	900			$ 210,600	$ 234,000	$ 280,800		$ -	$ -	$ -		$ 70,200	$ 93,600	$ 140,400	82	HIGH
		C	630		$ 122,900				$ -				$ 24,600				56	MEDIUM
	Campbell Parade	S	2390	700	$ 466,100	$ 559,300	$ 621,400		$ 136,500	$ 163,800	$ 182,000		$ 65,900	$ 131,800	$ 175,800		68	MEDIUM
	Gordon Street	S	620	310	$ 120,900	$ 145,100	$ 161,200		$ 60,500	$ 72,500	$ 80,600		$ 12,100	$ 24,200	$ 32,200		63	MEDIUM
		C	560	280	$ 109,200				$ 54,600				$ 10,900				54	MEDIUM
	Innes Road	S	610	305	$ 119,000	$ 142,700	$ 158,600		$ 59,500	$ 71,400	$ 79,300		$ 11,900	$ 23,800	$ 31,700		52	MEDIUM
	Kenneth Road	S	2260	1000	$ 440,700	$ 528,800	$ 587,600		$ 195,000	$ 234,000	$ 260,000		$ 49,100	$ 98,300	$ 131,000		67	MEDIUM
	Koorala Street	S	610		$ 119,000	$ 142,700	$ 158,600		$ -	$ -	$ -		$ 23,800	$ 47,600	$ 63,400		67	MEDIUM
	Lovett Street	S	600	300	$ 117,000	$ 140,400	$ 156,000		$ 58,500	$ 70,200	$ 78,000		$ 11,700	$ 23,400	$ 31,200		61	MEDIUM
		C	240	240	$ 46,800				$ 46,800				$ -				48	LOW
	Quirk Road	S	1290	400	$ 251,600	$ 301,900	$ 335,400		$ 78,000	$ 93,600	$ 104,000		$ 34,700	$ 69,400	$ 92,600		63	MEDIUM
	Roseberry Street	S	690		$ 134,600	$ 161,500	$ 179,400		$ -	$ -	$ -		$ 26,900	$ 53,800	$ 71,800		64	MEDIUM
Narrabeen	Pittwater Road	S	2090		$ 407,600	$ 489,100	$ 543,400		$ -	$ -	$ -		$ 81,500	$ 163,000	$ 217,400		88	HIGH
		C	350		$ 68,300				$ -				$ 13,700				79	HIGH
	Waterloo Street	P	250			$ 58,500	$ 65,000	$ 78,000		$ -	$ -	$ -		$ 19,500	$ 26,000	$ 39,000	67	MEDIUM
		S	340		$ 66,300	$ 79,600	$ 88,400		$ -	$ -	$ -		$ 13,300	$ 26,500	$ 35,400		58	MEDIUM
		C	150	150	$ 29,300				$ 29,300				$ -				48	LOW
	Narrabeen Lake	S	3600	3600	$ 702,000	$ 842,400	$ 936,000		$ 702,000	$ 842,400	$ 936,000		$ -	$ -	$ -		48	LOW
	Albert Street	S	540		$ 105,300	$ 126,400	$ 140,400		$ -	$ -	$ -		$ 21,100	$ 42,100	$ 56,200		61	MEDIUM
	Lagoon Street	S	550		$ 107,300	$ 128,700	$ 143,000		$ -	$ -	$ -		$ 21,500	$ 42,900	$ 57,200		61	MEDIUM
	Ocean Street	S	1610		$ 314,000	$ 376,700	$ 418,600		$ -	$ -	$ -		$ 62,800	$ 125,600	$ 167,400		65	MEDIUM
		C	2450	900	$ 477,800				$ 175,500				$ 60,500				53	MEDIUM
	The Esplanade	S	600		$ 117,000	$ 140,400	$ 156,000		$ -	$ -	$ -		$ 23,400	$ 46,800	$ 62,400		53	MEDIUM
	Wellington Street	S	490		$ 95,600	$ 114,700	$ 127,400		$ -	$ -	$ -		$ 19,100	$ 38,200	$ 51,000		53	MEDIUM
		C	120	120	$ 23,400				$ 23,400				$ -				48	LOW
	King Street	C	330	165	$ 64,400				$ 32,200				$ 6,400				54	MEDIUM
	Mactier Street	C	270		$ 52,700				$ -				$ 10,500				48	LOW
	Nioka Road	C	340	170	$ 66,300				$ 33,200				$ 6,600				51	MEDIUM
	Goodwin Street	C	570		$ 111,200				$ -				$ 22,200				56	MEDIUM
	Veterans Parade	C	50	25	$ 9,800				$ 4,900				$ 1,000				48	LOW
Narraweena	Alfred Street	P	220			$ 51,500	$ 57,200	$ 68,600		$ -	$ -	$ -		$ 17,200	$ 22,900	$ 34,300	79	HIGH
		S	470		$ 91,700	$ 110,000	$ 122,200		$ -	$ -	$ -		$ 18,300	$ 36,700	$ 48,900		65	MEDIUM
		C	1970		$ 384,200				$ -				$ 76,800				50	MEDIUM
	Mcintosh Road	S	690		$ 134,600	$ 161,500	$ 179,400		$ -	$ -	$ -		$ 26,900	$ 53,800	$ 71,800		71	HIGH
		C	640		$ 124,800				$ -				$ 25,000				53	MEDIUM
	Ronald Avenue	S	440		$ 85,800	$ 103,000	$ 114,400		$ -	$ -	$ -		$ 17,200	$ 34,300	$ 45,800		60	MEDIUM
	Waratah Parade	S	690		$ 134,600	$ 161,500	$ 179,400		$ -	$ -	$ -		$ 26,900	$ 53,800	$ 71,800		67	MEDIUM
	Parr Parade	C	50		$ 9,800				$ -				$ 2,000				50	MEDIUM
North Balgowlah	Illalong Avenue	S	240	120	$ 46,800	$ 56,200	$ 62,400		$ 23,400	$ 28,100	$ 31,200		$ 4,700	$ 9,400	$ 12,500		59	MEDIUM
	Woodbine Street	S	240		$ 46,800	$ 56,200	$ 62,400		$ -	$ -	$ -		$ 9,400	$ 18,700	$ 25,000		59	MEDIUM

Suburb	Road Name	Priority	Total Length (both sides of road) (m)	length of missing paths (m)	Option 1				Option 2								Total Score	Implementation Priority
					Cost of new footpath				Cost of new footpath where required				Cost of widening					
					Footpath widths (m)				Footpath widths (m)				Footpath widths (m)					
					1.5	1.8	2.0	2.4	1.5	1.8	2.0	2.4	1.5	1.8	2.0	2.4		
Terrey Hills	Booralie Road	P	340	50		$ 79,600	$ 88,400	$ 106,100		$ 11,700	$ 13,000	$ 15,600		$ 22,600	$ 30,200	$ 45,200	65	MEDIUM
		S	940		$ 183,300	$ 220,000	$ 244,400		$ -	$ -	$ -		$ 36,700	$ 73,300	$ 97,800		56	MEDIUM
	Yulong Avenue	P	680	200		$ 159,100	$ 176,800	$ 212,200		$ 46,800	$ 52,000	$ 62,400		$ 37,400	$ 49,900	$ 74,900	65	MEDIUM
	McCarrs Creek Road	S	750	750	$ 146,300	$ 175,500	$ 195,000		$ 146,300	$ 175,500	$ 195,000		$ -	$ -	$ -		61	MEDIUM
	Beltana Avenue	C	630	630	$ 122,900				$ 122,900				$ -				48	LOW
	Cooyong Road	C	760	380	$ 148,200				$ 74,100				$ 14,800				61	MEDIUM
	Cowrang Avenue	C	650	650	$ 126,800				$ 126,800				$ -				48	LOW
	Dandenlong Road	C	570	570	$ 111,200				$ 111,200				$ -				48	LOW
	Myoora Road	C	2720	1360	$ 530,400				$ 265,200				$ 53,000				61	MEDIUM
	Nerang Avenue	C	250	125	$ 48,800				$ 24,400				$ 4,900				48	LOW
	Tepko Road	C	1030		$ 200,900				$ -				$ 40,200				51	MEDIUM

		Option 1				Option 2			
		Footpath widths (m)				Footpath widths (m)			
		1.5	1.8	2.0	2.4	1.5	1.8	2.0	2.4
Primary	P	**Primary**	$ -	$ 8,136,100	$ 9,040,200	$ 10,848,500	$ -	$ 3,534,900	$ 4,438,900	$ 6,246,900
Secondary	S	**Secondary**	$ 16,173,500	$ 19,406,000	$ 21,561,800	$ -	$ 5,477,500	$ 8,711,000	$ 10,867,600	$ -
Collector	C	**Collector**	$ 22,010,900	$ -	$ -	$ -	$ 8,611,100	$ -	$ -	$ -

Low cost estimate: 2.0m width for Primary route footpaths
1.5m width for Secondary & Collector route footpaths

High cost estimate: 2.4m width for Primary route footpaths
2.0m width for Secondary route footpaths
1.5m width for Collector route footpaths

Option 1 cost estimate:
$ 47,224,600 low — $ 54,421,200 high

Option 2 cost estimate:
$ 18,527,500 low — $ 25,725,600 high

Option 1 - New footpaths for all priority routes where the path has to be widened
Option 2 - Widening of the footpaths for all priority routes and new foopaths where required

Notes:
Costing is rounded to the nearest hundred dollars.
Cost of works can vary depending on, but not limited to, the following:
- environmental factors (trees, rocks, soil type)
- the relocation of services (power poles, pipes, cables)
- cost of labour, equipment and materials
- the condition of the footpath at the time of construction
- on the width of the footpath at the time of construction
- the length of section that to be built at the time of construction.
- land acquisition if required

Appendix G-2
Footpath Maintenance Schedule

Allambie Heights Footpath Maintenance Schedule					
ID	**Location**	**Decription**	**Priority**	**Cost**	
AH01	Allambie Rd/Flers St	Kerb access ramp (repair)	HIGH	$ 1,200	
AH02	Allambie Rd/Flers St	Kerb access ramp (repair)	HIGH	$ 1,200	
AH03	Allambie Rd/Flers St	Kerb access ramp (repair)	HIGH	$ 1,200	
AH04	Allambie Rd/Flers St	Kerb access ramp (repair)	HIGH	$ 1,200	
AH07	Roosevelt Ave	Footpath grinding	HIGH	$ 70	
AH08	Roosevelt Ave	Remove obstruction	HIGH	$ 230	
AH09	Roosevelt Ave	Repair footpath	HIGH	$ 230	
AH10	Allambie Rd	Footpath grinding	HIGH	$ 70	**Estimated Costs**
AH11	Allambie Rd/Flers St	Footpath grinding	HIGH	$ 70	LOW $ -
AH12	Allambie Rd	Footpath grinding	HIGH	$ 70	MEDIUM $ -
AH13	Allambie Rd	Footpath grinding	HIGH	$ 70	HIGH $ 5,611

Allambie Grove Footpath Maintenance Schedule					
ID	**Location**	**Decription**	**Priority**	**Cost**	
AG01	Rodborough Rd	Kerb access ramp (new)	HIGH	$ 1,000	
AG02	Allambie Rd/Rodborough Rd	Kerb access ramp (repair)	HIGH	$ 1,200	
AG03	Allambie Rd/Rodborough Rd	Kerb access ramp (repair)	HIGH	$ 1,200	
AG04	Rodborough Rd	Kerb access ramp (repair)	HIGH	$ 1,200	
AG05	Rodborough Rd	Kerb access ramp (repair)	HIGH	$ 1,200	
AG06	Allambie Rd	Kerb access ramp (repair)	HIGH	$ 1,200	
AG07	Warringah Rd/Rodborough Rd	Kerb access ramp (repair)	HIGH	$ 1,200	
AG08	Warringah Rd/Rodborough Rd	Kerb access ramp (repair)	HIGH	$ 1,200	
AG09	Warringah Rd/Allambie Rd	Kerb access ramp (new)	HIGH	$ 1,000	
AG10	Frenchs Forest Rd East	Kerb access ramp (new)	HIGH	$ 1,000	
AG11	Frenchs Forest Rd East	Kerb access ramp (repair)	HIGH	$ 1,200	
AG12	Frenchs Forest Rd East	Kerb access ramp (new)	HIGH	$ 1,000	
AG13	Warringah Rd/Allambie Rd	Kerb access ramp (new)	HIGH	$ 1,000	
AG14	Warringah Rd/Allambie Rd	Kerb access ramp (new)	HIGH	$ 1,000	
AG20	Rodborough Rd	Footpath grinding	HIGH	$ 70	
AG21	Rodborough Rd	Footpath clearing (vegetation)	HIGH	$ 20	
AG22	Rodborough Rd	Footpath clearing (vegetation)	HIGH	$ 20	
AG23	Rodborough Rd	Remove obstruction	HIGH	$ 230	
AG24	Rodborough Rd	Remove obstruction	HIGH	$ 230	
AG25	Rodborough Rd	Footpath grinding	HIGH	$ 70	
AG26	Rodborough Rd	Footpath grinding	HIGH	$ 70	
AG27	Rodborough Rd	Footpath grinding	HIGH	$ 70	
AG28	Warringah Rd/Rodborough Rd	Footpath grinding	HIGH	$ 70	
AG29	Warringah Rd/Rodborough Rd	Footpath grinding	HIGH	$ 70	
AG30	Allambie Rd	Footpath grinding	HIGH	$ 70	
AG31	Warringah Rd	Footpath clearing (vegetation)	HIGH	$ 20	
AG32	Warringah Rd	Footpath grinding	HIGH	$ 70	
AG33	Frenchs Forest Rd East	Repair footpath	HIGH	$ 230	
AG34	Frenchs Forest Rd East	Repair footpath	HIGH	$ 230	
AG35	Frenchs Forest Rd East	Footpath grinding	HIGH	$ 70	
AG36	Frenchs Forest Rd East	Repair footpath	HIGH	$ 230	
AG37	Frenchs Forest Rd East	Repair footpath	HIGH	$ 230	
AG38	Frenchs Forest Rd East	Repair footpath	HIGH	$ 230	
AG39	Frenchs Forest Rd East	Footpath grinding	HIGH	$ 70	
AG40	Frenchs Forest Rd East	Footpath grinding	HIGH	$ 70	
AG41	Frenchs Forest Rd East	Footpath grinding	HIGH	$ 70	
AG42	Frenchs Forest Rd East	Footpath grinding	HIGH	$ 70	
AG43	Frenchs Forest Rd East	Repair footpath	HIGH	$ 230	
AG44	Frenchs Forest Rd East	Footpath clearing (vegetation)	HIGH	$ 20	
AG45	Frenchs Forest Rd East	Repair footpath	HIGH	$ 230	
AG46	Frenchs Forest Rd East	Footpath grinding	HIGH	$ 70	
AG47	Frenchs Forest Rd East	Footpath clearing (vegetation)	HIGH	$ 20	
AG48	Frenchs Forest Rd East	Repair footpath	HIGH	$ 230	
AG49	Frenchs Forest Rd East	Repair footpath	HIGH	$ 230	
AG50	Frenchs Forest Rd East	Repair footpath	HIGH	$ 230	
AG51	Frenchs Forest Rd East	Footpath grinding	HIGH	$ 70	
AG52	Frenchs Forest Rd East	Footpath clearing (vegetation)	HIGH	$ 20	
AG53	Warringah Rd	Footpath grinding	HIGH	$ 70	
AG54	Warringah Rd	Footpath grinding	HIGH	$ 70	
AG55	Warringah Rd	Footpath grinding	HIGH	$ 70	
AG56	Warringah Rd	Repair footpath	HIGH	$ 230	
AG57	Warringah Rd	Repair footpath	HIGH	$ 230	**Estimated Costs**
AG58	Warringah Rd/Rodborough Rd	Footpath clearing (vegetation)	HIGH	$ 20	LOW $ -
AG59	Warringah Rd/Rodborough Rd	Footpath clearing (vegetation)	HIGH	$ 20	MEDIUM $ -
AG60	Warringah Rd/Rodborough Rd	Footpath clearing (vegetation)	HIGH	$ 20	HIGH $ 20,266

Belrose Footpath Maintenance Schedule				
ID	**Location**	**Decription**	**Priority**	**Cost**

BE01	Pringle Ave	Kerb access ramp (new)	MEDIUM	$ 1,000
BE02	Cotentin Rd/Ralston Ave	Kerb access ramp (repair)	MEDIUM	$ 1,200
BE03	Cotentin Rd/Ralston Ave	Kerb access ramp (new)	MEDIUM	$ 1,000
BE04	Cotentin Rd/Ralston Ave	Kerb access ramp (repair)	MEDIUM	$ 1,200
BE05	Cotentin Rd/Ralston Ave	Kerb access ramp (new)	MEDIUM	$ 1,000
BE06	Pringle Ave/Coachline Pl	Kerb access ramp (repair)	MEDIUM	$ 1,200
BE07	Pringle Ave/Coachline Pl	Kerb access ramp (repair)	MEDIUM	$ 1,200
BE09	Ralston Ave	Footpath clearing (vegetation)	MEDIUM	$ 20
BE10	Ralston Ave	Footpath clearing (vegetation)	MEDIUM	$ 20
BE11	Ralston Ave	Repair footpath	MEDIUM	$ 230
BE12	Ralston Ave	Footpath clearing (vegetation)	MEDIUM	$ 20
BE13	Ralston Ave/Pringle Ave	Footpath clearing (vegetation)	MEDIUM	$ 20
BE14	Ralston Ave	Remove obstruction	MEDIUM	$ 230
BE15	Ralston Ave	Remove obstruction	MEDIUM	$ 230
BE16	Ralston Ave	Repair footpath	MEDIUM	$ 230
BE17	Ralston Ave	Repair footpath	MEDIUM	$ 230
BE18	Cotentin Rd/Ralston Ave	Footpath grinding	MEDIUM	$ 70
BE19	Ralston Ave	Repair footpath	MEDIUM	$ 230
BE20	Ralston Ave	Repair footpath	MEDIUM	$ 230
BE21	Ralston Ave	Repair footpath	MEDIUM	$ 230
BE22	Ralston Ave	Repair footpath	MEDIUM	$ 230
BE23	Ralston Ave	Repair footpath	MEDIUM	$ 230
BE24	Ralston Ave	Repair footpath	MEDIUM	$ 230
BE25	Ralston Ave	Install wheel stops	MEDIUM	$ 200
BE26	Ralston Ave	Repair footpath	MEDIUM	$ 230
BE27	Ralston Ave	Repair footpath	MEDIUM	$ 230
BE28	Ralston Ave	Install fencing	MEDIUM	$ 540
BE29	Ralston Ave	Install wheel stops	MEDIUM	$ 200
BE30	Ralston Ave	Footpath grinding	MEDIUM	$ 230
BE31	Pringle Ave	Repair footpath	MEDIUM	$ 230
BE32	Pringle Ave	Repair footpath	MEDIUM	$ 230
BE33	Pringle Ave	Repair footpath	MEDIUM	$ 20
BE34	Pringle Ave	Repair footpath	MEDIUM	$ 230
BE35	Pringle Ave	Repair footpath	MEDIUM	$ 230
BE36	Pringle Ave	Repair footpath	MEDIUM	$ 230

Estimated Costs	
LOW	$ -
MEDIUM	$ 13,288
HIGH	$ -

Belrose Austlink Footpath Maintenance Schedule

ID	Location	Decription	Priority	Cost
BA01	Narabang Cl	Kerb access ramp (repair)	LOW	$ 1,200
BA04	Narabang Wy	Repair footpath	LOW	$ 230
BA05	Narabang Wy	Repair footpath	LOW	$ 230
BA06	Narabang Wy	Repair footpath	LOW	$ 230
BA07	Narabang Wy	Footpath grinding	LOW	$ 70
BA08	Narabang Wy	Footpath grinding	LOW	$ 70
BA09	Narabang Wy	Repair footpath	LOW	$ 230
BA10	Narabang Wy	Footpath clearing (vegetation)	LOW	$ 20
BA11	Narabang Wy	Repair footpath	LOW	$ 230
BA12	Narabang Wy	Repair footpath	LOW	$ 230
BA13	Narabang Wy	Footpath clearing (vegetation)	LOW	$ 20
BA14	Narabang Wy/Niangala Cl/Gari	Repair footpath	LOW	$ 230
BA15	Narabang Wy/Niangala Cl/Gari	Footpath clearing (vegetation)	LOW	$ 20
BA16	Narabang Wy	Footpath clearing (vegetation)	LOW	$ 20
BA17	Narabang Wy	Footpath clearing (vegetation)	LOW	$ 20
BA18	Narabang Wy	Footpath grinding	LOW	$ 70
BA19	Narabang Wy	Repair footpath	LOW	$ 230
BA20	Narabang Wy	Repair footpath	LOW	$ 230
BA21	Narabang Wy	Repair footpath	LOW	$ 230
BA22	Narabang Wy	Repair footpath	LOW	$ 230
BA23	Narabang Wy	Repair footpath	LOW	$ 230
BA24	Narabang Wy	Repair footpath	LOW	$ 230
BA25	Narabang Wy	Repair footpath	LOW	$ 230
BA26	Narabang Wy	Repair footpath	LOW	$ 230
BA27	Narabang Wy	Repair footpath	LOW	$ 230
BA28	Narabang Wy	Repair footpath	LOW	$ 230
BA29	Narabang Wy	Repair footpath	LOW	$ 230
BA30	Narabang Wy	Repair footpath	LOW	$ 230
BA31	Narabang Wy	Repair footpath	LOW	$ 230
BA32	Narabang Wy	Footpath clearing (vegetation)	LOW	$ 20
BA33	Narabang Wy	Repair footpath	LOW	$ 230
BA34	Narabang Wy	Footpath grinding	LOW	$ 70
BA35	Narabang Wy	Repair footpath	LOW	$ 230
BA36	Narabang Wy	Repair footpath	LOW	$ 230
BA37	Narabang Wy	Footpath grinding	LOW	$ 70
BA38	Narabang Wy	Repair footpath	LOW	$ 230

BA39	Narabang Wy/Niangala Cl/Gari	Repair footpath	LOW	$ 230
BA40	Narabang Wy/Niangala Cl/Gari	Repair footpath	LOW	$ 230
BA41	Garigal Wy	Footpath clearing (vegetation)	LOW	$ 20
BA42	Garigal Wy	Repair footpath	LOW	$ 230
BA43	Garigal Wy	Repair footpath	LOW	$ 230
BA44	Garigal Wy	Footpath clearing (vegetation)	LOW	$ 20
BA45	Garigal Wy	Repair footpath	LOW	$ 230
BA46	Garigal Wy	Repair footpath	LOW	$ 230
BA47	Garigal Wy	Repair footpath	LOW	$ 230
BA48	Garigal Wy	Footpath grinding	LOW	$ 70
BA49	Narabang Cl	Repair footpath	LOW	$ 230
BA50	Narabang Cl	Footpath clearing (vegetation)	LOW	$ 20
BA51	Narabang Cl	Repair footpath	LOW	$ 230
BA52	Narabang Cl	Repair footpath	LOW	$ 230
BA53	Narabang Cl	Repair footpath	LOW	$ 230
BA54	Narabang Cl	Footpath grinding	LOW	$ 70
BA55	Narabang Wy	Repair footpath	LOW	$ 230
BA56	Narabang Wy	Repair footpath	LOW	$ 230
BA57	Narabang Wy	Footpath clearing (vegetation)	LOW	$ 20
BA58	Narabang Wy	Footpath clearing (vegetation)	LOW	$ 20
BA59	Narabang Wy	Footpath clearing (vegetation)	LOW	$ 20
BA60	Narabang Wy	Repair footpath	LOW	$ 230
BA61	Narabang Wy	Repair footpath	LOW	$ 230
BA62	Narabang Wy	Repair footpath	LOW	$ 230
BA63	Narabang Wy	Repair footpath	LOW	$ 230
BA64	Minna Cl	Footpath grinding	LOW	$ 70
BA65	Minna Cl	Repair footpath	LOW	$ 230
BA66	Minna Cl	Repair footpath	LOW	$ 230
BA67	Minna Cl	Repair footpath	LOW	$ 230
BA68	Minna Cl	Repair footpath	LOW	$ 230
BA69	Narabang Wy/Minna Cl	Footpath clearing (vegetation)	LOW	$ 20
BA70	Narabang Wy/Mona Vale Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
BA71	Narabang Wy/Mona Vale Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
BA72	Narabang Wy/Mona Vale Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
BA73	Narabang Wy/Mona Vale Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
BA74	Narabang Wy/Mona Vale Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
BA75	Narabang Wy	Footpath clearing (vegetation)	LOW	$ 20
BA76	Narabang Wy	Footpath grinding	LOW	$ 70

Estimated Costs	
LOW	$ 12,478
MEDIUM	$ 100
HIGH	$ -

Brookvale Footpath Maintenance Schedule

ID	Location	Decription	Priority	Cost
BV001	Harbord Rd/Headland Rd	Kerb access ramp (repair)	HIGH	$ 1,200
BV002	Harbord Rd/Headland Rd	Kerb access ramp (repair)	HIGH	$ 1,200
BV003	Harbord Rd/Abbott Rd	Kerb access ramp (new)	HIGH	$ 1,000
BV004	Harbord Rd/Abbott Rd	Kerb access ramp (new)	HIGH	$ 1,000
BV005	Harbord Rd/Abbott Rd	Kerb access ramp (new)	HIGH	$ 1,000
BV006	Harbord Rd/Abbott Rd	Kerb access ramp (new)	HIGH	$ 1,000
BV007	Harbord Rd/Abbott Rd	Kerb access ramp (new)	HIGH	$ 1,000
BV008	Harbord Rd/Amourin St	Kerb access ramp (repair)	HIGH	$ 1,200
BV009	Ethel Ave/Wattle Rd	Kerb access ramp (new)	MEDIUM	$ 1,000
BV010	Ethel Ave/Wattle Rd	Kerb access ramp (new)	MEDIUM	$ 1,000
BV011	Ada Ave/Wattle Rd	Kerb access ramp (repair)	MEDIUM	$ 1,000
BV012	Ada Ave/Wattle Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200
BV013	Powells Rd/Mitchell Rd	Kerb access ramp (new)	MEDIUM	$ 1,000
BV014	Orchard Rd/Mitchell Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200
BV015	Winbourne Rd/Carter Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200
BV016	Winbourne Rd/Carter Rd	Kerb access ramp (new)	MEDIUM	$ 1,000
BV017	Mitchell Rd/Winbourne Rd	Kerb access ramp (repair)	MEDIUM	$ 1,000
BV018	Winbourne Rd	Kerb access ramp (repair)	MEDIUM	$ 1,000
BV019	Mitchell Rd/Winbourne Rd	Kerb access ramp (repair)	MEDIUM	$ 1,000
BV020	Mitchell Rd/Winbourne Rd	Kerb access ramp (repair)	MEDIUM	$ 1,000
BV021	Mitchell Rd/Chard Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200
BV022	Mitchell Rd/Chard Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200
BV023	Sydenham Rd/Mitchell Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200
BV024	Sydenham Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200
BV025	Pittwater Rd/Chard Rd	Kerb access ramp (repair)	HIGH	$ 1,200
BV026	Old Pittwater Rd	Kerb access ramp (repair)	HIGH	$ 1,200
BV027	Old Pittwater Rd	Kerb access ramp (repair)	HIGH	$ 1,000
BV028	Pittwater Rd/Mitchell Rd	Kerb access ramp (repair)	HIGH	$ 1,000
BV029	Pittwater Rd/Mitchell Rd	Kerb access ramp (repair)	HIGH	$ 1,200
BV030	West St/Carter Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200
BV031	West St/Carter Rd	Kerb access ramp (repair)	MEDIUM	$ 1,000
BV032	West St/Carter Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200
BV033	Harbord Rd/West St	Kerb access ramp (repair)	HIGH	$ 1,000

BV034	Warringah Rd/Victor Rd	Kerb access ramp (new)	HIGH	$ 1,000
BV035	Warringah Rd/Victor Rd	Kerb access ramp (repair)	HIGH	$ 1,200
BV036	Pine Ave/Federal Pde	Kerb access ramp (new)	HIGH	$ 1,000
BV037	Pine Ave/Federal Pde	Kerb access ramp (new)	HIGH	$ 1,000
BV038	Victor Rd/Federal Pde	Kerb access ramp (repair)	HIGH	$ 1,200
BV039	Victor Rd/Federal Pde	Kerb access ramp (new)	HIGH	$ 1,000
BV040	Alfred Rd/Federal Pde	Kerb access ramp (repair)	HIGH	$ 1,200
BV041	Alfred Rd/Federal Pde	Kerb access ramp (new)	HIGH	$ 1,000
BV042	Gulliver St	Kerb access ramp (new)	HIGH	$ 1,000
BV043	Gulliver St	Kerb access ramp (new)	HIGH	$ 1,000
BV044	Beacon Hill Rd/Consul Rd	Kerb access ramp (repair)	HIGH	$ 1,200
BV045	Beacon Hill Rd/Consul Rd	Kerb access ramp (repair)	HIGH	$ 1,200
BV046	Beacon Hill Rd	Kerb access ramp (repair)	HIGH	$ 1,200
BV047	Beacon Hill Rd/Elizabeth Pl	Kerb access ramp (repair)	HIGH	$ 1,200
BV048	Beacon Hill Rd/Roger St	Kerb access ramp (repair)	HIGH	$ 1,200
BV049	Beacon Hill Rd/Roger St	Kerb access ramp (new)	HIGH	$ 1,000
BV050	Beacon Hill Rd/Roger St	Kerb access ramp (new)	HIGH	$ 1,000
BV051	Beacon Hill Rd/Roger St	Kerb access ramp (new)	HIGH	$ 1,000
BV052	Beacon Hill Rd/Roger St	Kerb access ramp (new)	HIGH	$ 1,000
BV053	Beacon Hill Rd/Roger St	Kerb access ramp (new)	HIGH	$ 1,000
BV054	Beacon Hill Rd/Roger St	Kerb access ramp (new)	HIGH	$ 1,000
BV055	Beacon Hill Rd/Roger St	Kerb access ramp (repair)	HIGH	$ 1,000
BV056	Beacon Hill Rd/Roger St	Kerb access ramp (new)	HIGH	$ 1,000
BV057	Beacon Hill Rd/Roger St	Kerb access ramp (repair)	HIGH	$ 1,200
BV058	Old Pittwater Rd/Dale St	Kerb access ramp (repair)	HIGH	$ 1,200
BV059	Old Pittwater Rd/Green St	Kerb access ramp (repair)	HIGH	$ 1,200
BV060	Old Pittwater Rd	Kerb access ramp (repair)	HIGH	$ 1,200
BV061	Old Pittwater Rd	Kerb access ramp (new)	HIGH	$ 1,000
BV062	Green St	Kerb access ramp (repair)	HIGH	$ 1,200
BV063	Green St	Kerb access ramp (repair)	HIGH	$ 1,200
BV064	Old Pittwater Rd	Kerb access ramp (repair)	HIGH	$ 1,200
BV065	Old Pittwater Rd	Kerb access ramp (repair)	HIGH	$ 1,200
BV066	Old Pittwater Rd/Cross St	Kerb access ramp (new)	HIGH	$ 1,000
BV067	Cross St	Kerb access ramp (repair)	HIGH	$ 1,200
BV068	Cross St/Green St	Kerb access ramp (repair)	HIGH	$ 1,200
BV069	Cross St/Dale St	Kerb access ramp (repair)	HIGH	$ 1,200
BV070	Old Pittwater Rd/Smith Ave	Kerb access ramp (new)	HIGH	$ 1,000
BV071	Old Pittwater Rd/Smith Ave	Kerb access ramp (new)	HIGH	$ 1,000
BV072	Old Pittwater Rd/Smith Ave	Kerb access ramp (repair)	HIGH	$ 1,200
BV073	Old Pittwater Rd/Smith Ave	Kerb access ramp (repair)	HIGH	$ 1,200
BV074	William St/Grosvenor Pl	Kerb access ramp (repair)	MEDIUM	$ 1,200
BV075	William St/Cirella Cl	Kerb access ramp (repair)	MEDIUM	$ 1,200
BV076	William St/Cirella Cl	Kerb access ramp (repair)	MEDIUM	$ 1,200
BV077	William St/Corrie Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200
BV078	William St/Corrie Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200
BV079	Short St/Amourin St	Kerb access ramp (new)	MEDIUM	$ 1,000
BV127	Harbord Rd	Repair footpath	MEDIUM	$ 230
BV128	Harbord Rd	Remove obstruction	MEDIUM	$ 230
BV129	Harbord Rd	Remove obstruction	MEDIUM	$ 230
BV130	Harbord Rd	Footpath grinding	MEDIUM	$ 70
BV131	Harbord Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
BV132	Harbord Rd	Remove obstruction	MEDIUM	$ 230
BV133	Harbord Rd	Footpath grinding	MEDIUM	$ 70
BV134	Harbord Rd	Repair footpath	MEDIUM	$ 230
BV135	Harbord Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
BV136	Harbord Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
BV137	Wattle Rd	Footpath grinding	MEDIUM	$ 70
BV138	Wattle Rd	Repair footpath	LOW	$ 230
BV139	Wattle Rd	Repair footpath	LOW	$ 230
BV140	Wattle Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
BV141	Wattle Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
BV142	Wattle Rd	Repair footpath	LOW	$ 230
BV143	Wattle Rd	Repair footpath	LOW	$ 230
BV144	Wattle Rd	Repair footpath	LOW	$ 230
BV145	Wattle Rd	Footpath grinding	MEDIUM	$ 70
BV146	Wattle Rd	Repair footpath	LOW	$ 230
BV147	Wattle Rd	Repair footpath	LOW	$ 230
BV148	Wattle Rd	Repair footpath	LOW	$ 230
BV149	Wattle Rd	Repair footpath	LOW	$ 230
BV150	Powells Rd	Repair footpath	MEDIUM	$ 230
BV151	Powells Rd	Repair footpath	MEDIUM	$ 230
BV152	Powells Rd	Repair footpath	MEDIUM	$ 230
BV153	Powells Rd	Footpath grinding	MEDIUM	$ 70
BV154	Powells Rd	Footpath grinding	MEDIUM	$ 70

BV155	Powells Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
BV156	Powells Rd	Repair footpath	MEDIUM	$ 230
BV157	Powells Rd	Repair footpath	MEDIUM	$ 230
BV158	Powells Rd	Remove obstruction	MEDIUM	$ 230
BV159	Powells Rd	Repair footpath	MEDIUM	$ 230
BV160	Orchard Rd	Repair footpath	MEDIUM	$ 230
BV161	Orchard Rd	Remove obstruction	MEDIUM	$ 230
BV162	Orchard Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
BV163	Orchard Rd	Remove obstruction	MEDIUM	$ 230
BV164	Orchard Rd	Repair footpath	MEDIUM	$ 230
BV165	Orchard Rd	Repair footpath	MEDIUM	$ 230
BV166	Orchard Rd	Repair footpath	MEDIUM	$ 230
BV167	Orchard Rd	Repair footpath	MEDIUM	$ 230
BV168	Orchard Rd	Repair footpath	MEDIUM	$ 230
BV169	Orchard Rd	Footpath grinding	MEDIUM	$ 70
BV170	Orchard Rd	Repair footpath	MEDIUM	$ 230
BV171	Orchard Rd/Mitchell Rd	Repair footpath	MEDIUM	$ 230
BV172	Mitchell Rd	Repair footpath	MEDIUM	$ 230
BV173	Mitchell Rd	Repair footpath	MEDIUM	$ 230
BV174	Mitchell Rd	Repair footpath	MEDIUM	$ 230
BV175	Orchard Rd	Repair footpath	MEDIUM	$ 230
BV176	Orchard Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
BV177	Harbord Rd	Repair footpath	MEDIUM	$ 230
BV178	Winbourne Rd	Repair footpath	MEDIUM	$ 230
BV179	Winbourne Rd	Repair footpath	MEDIUM	$ 230
BV180	Winbourne Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
BV181	Winbourne Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
BV182	Winbourne Rd	Footpath grinding	MEDIUM	$ 70
BV183	Winbourne Rd	Footpath grinding	MEDIUM	$ 70
BV184	Winbourne Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
BV185	Winbourne Rd	Remove obstruction	MEDIUM	$ 230
BV186	Winbourne Rd	Repair footpath	MEDIUM	$ 230
BV187	Winbourne Rd	Repair footpath	MEDIUM	$ 230
BV188	Winbourne Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
BV189	Winbourne Rd	Footpath grinding	MEDIUM	$ 70
BV190	Chard Rd	Repair footpath	MEDIUM	$ 230
BV191	Chard Rd	Parking inspector required	LOW	-
BV192	Chard Rd	Repair footpath	MEDIUM	$ 230
BV193	Chard Rd	Repair footpath	MEDIUM	$ 230
BV194	Chard Rd	Repair footpath	MEDIUM	$ 230
BV195	Mitchell Rd	Repair footpath	MEDIUM	$ 230
BV196	Mitchell Rd	Repair footpath	MEDIUM	$ 230
BV197	Sydenham Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
BV198	Sydenham Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
BV199	Sydenham Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
BV200	Sydenham Rd	Repair footpath	MEDIUM	$ 230
BV201	Sydenham Rd	Repair footpath	MEDIUM	$ 230
BV202	Sydenham Rd	Repair footpath	MEDIUM	$ 230
BV203	Sydenham Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
BV204	Sydenham Rd	Repair footpath	MEDIUM	$ 230
BV205	Sydenham Rd	Repair footpath	MEDIUM	$ 230
BV206	Sydenham Rd	Repair footpath	MEDIUM	$ 230
BV207	Pittwater Rd	Footpath grinding	HIGH	$ 70
BV208	Chard Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
BV209	Chard Rd	Footpath grinding	MEDIUM	$ 70
BV210	Chard Rd	Footpath grinding	MEDIUM	$ 70
BV211	Chard Rd	Repair footpath	MEDIUM	$ 230
BV212	Mitchell Rd	Repair footpath	MEDIUM	$ 230
BV213	Mitchell Rd	Footpath grinding	MEDIUM	$ 70
BV214	Mitchell Rd	Repair footpath	MEDIUM	$ 230
BV215	Winbourne Rd	Footpath grinding	MEDIUM	$ 70
BV216	Winbourne Rd	Repair footpath	MEDIUM	$ 230
BV217	Winbourne Rd	Repair footpath	MEDIUM	$ 230
BV218	Winbourne Rd	Footpath grinding	MEDIUM	$ 70
BV219	Winbourne Rd	Footpath grinding	MEDIUM	$ 70
BV220	Winbourne Rd	Footpath grinding	MEDIUM	$ 70
BV221	Winbourne Rd	Repair footpath	MEDIUM	$ 230
BV222	Winbourne Rd	Footpath grinding	MEDIUM	$ 70
BV223	Winbourne Rd	Repair footpath	MEDIUM	$ 230
BV224	Winbourne Rd	Repair footpath	MEDIUM	$ 230
BV225	Mitchell Rd	Repair footpath	MEDIUM	$ 230
BV226	Mitchell Rd	Repair footpath	MEDIUM	$ 230
BV227	Winbourne Rd	Footpath grinding	MEDIUM	$ 70
BV228	Winbourne Rd	Footpath grinding	MEDIUM	$ 70

BV229	Winbourne Rd	Footpath grinding	MEDIUM	$	70
BV230	Winbourne Rd	Footpath grinding	MEDIUM	$	70
BV231	Winbourne Rd	Repair footpath	MEDIUM	$	230
BV232	Winbourne Rd	Repair footpath	MEDIUM	$	230
BV233	Winbourne Rd	Footpath grinding	MEDIUM	$	70
BV234	Carter Rd	Footpath grinding	MEDIUM	$	70
BV235	West St	Repair footpath	MEDIUM	$	230
BV236	West St	Footpath grinding	MEDIUM	$	70
BV237	West St	Repair footpath	MEDIUM	$	230
BV238	West St	Footpath clearing (vegetation)	MEDIUM	$	20
BV239	West St	Repair footpath	MEDIUM	$	230
BV240	West St	Footpath clearing (vegetation)	MEDIUM	$	20
BV241	West St	Repair footpath	MEDIUM	$	230
BV242	West St	Footpath clearing (vegetation)	MEDIUM	$	20
BV243	West St	Repair footpath	MEDIUM	$	230
BV244	Carter Rd	Repair footpath	MEDIUM	$	230
BV245	Carter Rd	Footpath clearing (vegetation)	MEDIUM	$	20
BV246	Carter Rd	Repair footpath	MEDIUM	$	230
BV247	Carter Rd	Repair footpath	MEDIUM	$	230
BV248	Carter Rd	Footpath grinding	MEDIUM	$	70
BV249	Carter Rd	Footpath clearing (vegetation)	MEDIUM	$	20
BV250	Carter Rd	Footpath clearing (vegetation)	MEDIUM	$	20
BV251	Winbourne Rd	Repair footpath	MEDIUM	$	230
BV252	Harbord Rd	Repair footpath	MEDIUM	$	230
BV253	West St	Parking inspector required	LOW	-	
BV254	Harbord Rd	Footpath clearing (vegetation)	MEDIUM	$	20
BV255	Harbord Rd	Repair footpath	MEDIUM	$	230
BV256	Harbord Rd	Repair footpath	MEDIUM	$	230
BV257	Harbord Rd	Repair footpath	MEDIUM	$	230
BV258	Harbord Rd	Footpath grinding	MEDIUM	$	70
BV259	Harbord Rd/Headland Rd	Repair footpath	MEDIUM	$	230
BV260	Harbord Rd/Headland Rd	Repair footpath	MEDIUM	$	230
BV261	Harbord Rd/Headland Rd	Footpath grinding	MEDIUM	$	70
BV262	Harbord Rd	Footpath grinding	MEDIUM	$	70
BV263	Harbord Rd	Repair footpath	MEDIUM	$	230
BV264	Harbord Rd	Repair stairs	MEDIUM	$	1,104
BV265	Harbord Rd	Parking inspector required	LOW	-	
BV266	Harbord Rd	Repair footpath	MEDIUM	$	230
BV267	Harbord Rd	Remove obstruction	MEDIUM	$	230
BV268	Warringah Rd	Repair footpath	HIGH	$	230
BV269	Warringah Rd	Footpath clearing (vegetation)	HIGH	$	20
BV270	Warringah Rd	Footpath clearing (vegetation)	HIGH	$	20
BV271	Warringah Rd	Footpath clearing (vegetation)	HIGH	$	20
BV272	Warringah Rd	Footpath clearing (vegetation)	HIGH	$	20
BV273	Warringah Rd	Remove obstruction	HIGH	$	230
BV274	Victor Rd/Shackel Ave	Footpath grinding	MEDIUM	$	70
BV275	Pittwater Rd	Repair footpath	HIGH	$	230
BV276	Pittwater Rd	Footpath grinding	HIGH	$	70
BV277	Pittwater Rd	Repair footpath	HIGH	$	230
BV278	Pittwater Rd	Footpath grinding	HIGH	$	70
BV279	Victor Rd	Repair footpath	HIGH	$	230
BV280	Victor Rd	Footpath clearing (vegetation)	HIGH	$	20
BV281	Victor Rd/Federal Pde	Repair footpath	HIGH	$	230
BV282	Federal Pde	Repair footpath	HIGH	$	230
BV283	Pine Ave	Footpath grinding	HIGH	$	70
BV284	Pine Ave	Footpath grinding	HIGH	$	70
BV285	Pine Ave	Remove obstruction	HIGH	$	230
BV286	Pine Ave	Footpath clearing (vegetation)	HIGH	$	20
BV287	Pine Ave	Remove obstruction	HIGH	$	230
BV288	Pittwater Rd	Footpath clearing (vegetation)	HIGH	$	20
BV289	Pine Ave	Footpath grinding	HIGH	$	70
BV290	Alfred Rd	Repair footpath	HIGH	$	230
BV291	Alfred Rd	Repair footpath	HIGH	$	230
BV292	Alfred Rd/Federal Pde	Parking inspector required	LOW	-	
BV293	Alfred Rd	Parking inspector required	LOW	-	
BV294	Alfred Rd	Repair footpath	HIGH	$	230
BV295	Alfred Rd/Gulliver St	Remove obstruction	MEDIUM	$	230
BV296	Alfred Rd	Footpath grinding	HIGH	$	70
BV297	Alfred Rd/Gulliver St	Parking inspector required	LOW	-	
BV298	Alfred Rd	Repair footpath	HIGH	$	230
BV299	Alfred Rd	Repair footpath	HIGH	$	230
BV300	Alfred Rd	Footpath grinding	HIGH	$	70
BV301	Alfred Rd	Footpath grinding	HIGH	$	70
BV302	Alfred Rd	Repair footpath	HIGH	$	230

BV303	Federal Pde	Footpath clearing (vegetation)	HIGH	$ 20
BV304	Consul Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
BV305	Consul Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
BV306	Consul Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
BV307	Beacon Hill Rd	Repair footpath	HIGH	$ 230
BV308	Old Pittwater Rd	Footpath grinding	HIGH	$ 70
BV309	Old Pittwater Rd	Footpath grinding	HIGH	$ 70
BV310	Old Pittwater Rd	Repair footpath	HIGH	$ 230
BV311	Old Pittwater Rd	Footpath clearing (vegetation)	HIGH	$ 20
BV312	Old Pittwater Rd	Footpath clearing (vegetation)	HIGH	$ 20
BV313	Old Pittwater Rd	Footpath grinding	HIGH	$ 70
BV314	Old Pittwater Rd	Repair footpath	HIGH	$ 230
BV315	Old Pittwater Rd/Green St	Repair footpath	HIGH	$ 230
BV316	Green St	Repair footpath	HIGH	$ 230
BV317	Old Pittwater Rd	Footpath grinding	HIGH	$ 70
BV318	Old Pittwater Rd	Footpath clearing (vegetation)	HIGH	$ 20
BV319	Old Pittwater Rd	Repair footpath	HIGH	$ 230
BV320	Old Pittwater Rd	Footpath clearing (vegetation)	HIGH	$ 20
BV321	Old Pittwater Rd	Footpath clearing (vegetation)	HIGH	$ 20
BV322	Old Pittwater Rd	Footpath clearing (vegetation)	HIGH	$ 20
BV323	Old Pittwater Rd	Footpath clearing (vegetation)	HIGH	$ 20
BV324	Clearview Pl	Repair footpath	MEDIUM	$ 230
BV325	Clearview Pl	Repair footpath	MEDIUM	$ 230
BV326	Clearview Pl	Repair footpath	MEDIUM	$ 230
BV327	Clearview Pl	Repair footpath	MEDIUM	$ 230
BV328	Clearview Pl	Repair footpath	MEDIUM	$ 230
BV329	Clearview Pl	Repair footpath	MEDIUM	$ 230
BV330	Clearview Pl	Repair footpath	MEDIUM	$ 230
BV331	Clearview Pl	Repair footpath	MEDIUM	$ 230
BV332	Clearview Pl	Repair footpath	MEDIUM	$ 230
BV333	Clearview Pl	Footpath clearing (vegetation)	MEDIUM	$ 20
BV334	Clearview Pl	Footpath grinding	MEDIUM	$ 70
BV335	Clearview Pl	Repair footpath	MEDIUM	$ 230
BV336	Clearview Pl	Repair footpath	MEDIUM	$ 230
BV337	Clearview Pl	Footpath clearing (vegetation)	MEDIUM	$ 20
BV338	Clearview Pl	Repair footpath	MEDIUM	$ 230
BV339	Clearview Pl	Footpath grinding	MEDIUM	$ 70
BV340	Clearview Pl	Footpath grinding	MEDIUM	$ 70
BV341	Cross St	Footpath clearing (vegetation)	HIGH	$ 20
BV342	Cross St	Repair footpath	HIGH	$ 230
BV343	Cross St	Repair footpath	HIGH	$ 230
BV344	Green St	Footpath grinding	HIGH	$ 70
BV345	Dale St	Footpath clearing (vegetation)	MEDIUM	$ 20
BV346	Dale St	Repair footpath	MEDIUM	$ 230
BV347	Dale St	Footpath grinding	MEDIUM	$ 70
BV348	Dale St	Footpath grinding	MEDIUM	$ 70
BV349	Dale St	Footpath clearing (vegetation)	MEDIUM	$ 20
BV350	Dale St	Footpath clearing (vegetation)	MEDIUM	$ 20
BV351	Dale St	Repair footpath	MEDIUM	$ 230
BV352	Cross St	Repair footpath	HIGH	$ 230
BV353	Roger St	Repair footpath	HIGH	$ 230
BV354	Roger St	Footpath grinding	HIGH	$ 70
BV355	Roger St	Footpath grinding	HIGH	$ 70
BV356	Roger St	Repair footpath	HIGH	$ 230
BV357	Roger St	Repair footpath	HIGH	$ 230
BV358	Roger St	Footpath clearing (vegetation)	HIGH	$ 20
BV359	Roger St	Footpath clearing (vegetation)	HIGH	$ 20
BV360	Roger St	Repair footpath	HIGH	$ 230
BV361	Roger St	Footpath clearing (vegetation)	HIGH	$ 20
BV362	Pittwater Rd	Repair footpath	HIGH	$ 230
BV363	Pittwater Rd	Footpath grinding	HIGH	$ 70
BV364	Pittwater Rd	Footpath grinding	HIGH	$ 70
BV365	Pittwater Rd	Footpath grinding	HIGH	$ 70
BV366	Pittwater Rd/Sydenham Rd	Footpath grinding	HIGH	$ 70
BV367	Pittwater Rd	Footpath grinding	HIGH	$ 70
BV368	Pittwater Rd	Footpath grinding	HIGH	$ 70
BV369	Pittwater Rd	Repair footpath	HIGH	$ 230
BV370	Pittwater Rd	Repair footpath	HIGH	$ 230
BV371	Pittwater Rd	Footpath grinding	HIGH	$ 70
BV372	Roger St/Pittwater Rd	Footpath grinding	HIGH	$ 70
BV373	Pittwater Rd	Footpath grinding	HIGH	$ 70
BV374	Pittwater Rd	Footpath grinding	HIGH	$ 70
BV375	Pittwater Rd/Condamine St	Repair footpath	HIGH	$ 230
BV376	Pittwater Rd/Condamine St	Repair footpath	HIGH	$ 230

BV377	Condamine St	Repair footpath	HIGH	$ 230
BV378	Old Pittwater Rd	Footpath clearing (vegetation)	HIGH	$ 20
BV379	Old Pittwater Rd	Remove obstruction	HIGH	$ 230
BV380	Old Pittwater Rd	Remove obstruction	HIGH	$ 230
BV381	Old Pittwater Rd	Footpath clearing (vegetation)	HIGH	$ 20
BV382	Old Pittwater Rd	Remove obstruction	HIGH	$ 230
BV383	Old Pittwater Rd	Footpath clearing (vegetation)	HIGH	$ 20
BV384	Old Pittwater Rd	Footpath grinding	HIGH	$ 70
BV385	Old Pittwater Rd	Footpath grinding	HIGH	$ 70
BV386	Old Pittwater Rd	Repair footpath	HIGH	$ 230
BV387	Old Pittwater Rd	Repair footpath	HIGH	$ 230
BV388	Old Pittwater Rd	Footpath grinding	HIGH	$ 70
BV389	Old Pittwater Rd	Repair footpath	HIGH	$ 230
BV390	Old Pittwater Rd	Repair footpath	HIGH	$ 230
BV391	Old Pittwater Rd	Repair footpath	HIGH	$ 230
BV392	Old Pittwater Rd	Repair footpath	HIGH	$ 230
BV393	Old Pittwater Rd	Footpath grinding	HIGH	$ 70
BV394	Old Pittwater Rd	Repair footpath	HIGH	$ 230
BV395	Old Pittwater Rd	Footpath grinding	HIGH	$ 70
BV396	Old Pittwater Rd	Footpath grinding	HIGH	$ 70
BV397	Old Pittwater Rd	Repair footpath	HIGH	$ 230
BV398	Old Pittwater Rd	Repair footpath	HIGH	$ 230
BV399	Old Pittwater Rd	Repair footpath	HIGH	$ 230
BV400	Old Pittwater Rd	Repair footpath	HIGH	$ 230
BV401	Old Pittwater Rd	Repair footpath	HIGH	$ 230
BV402	Cross St	Repair footpath	HIGH	$ 230
BV403	Cross St	Repair footpath	HIGH	$ 230
BV404	Pittwater Rd	Repair footpath	HIGH	$ 230
BV405	Pittwater Rd	Footpath grinding	HIGH	$ 70
BV406	Pittwater Rd	Footpath grinding	HIGH	$ 70
BV407	William St	Footpath grinding	MEDIUM	$ 70
BV408	William St	Footpath grinding	MEDIUM	$ 70
BV409	William St	Repair footpath	MEDIUM	$ 230
BV410	William St	Footpath grinding	MEDIUM	$ 70
BV411	William St	Footpath grinding	MEDIUM	$ 70
BV412	William St	Repair footpath	MEDIUM	$ 230
BV413	William St	Repair footpath	MEDIUM	$ 230
BV414	William St/Corrie Rd	Footpath grinding	MEDIUM	$ 70
BV415	William St	Repair footpath	MEDIUM	$ 230
BV416	Short St	Repair footpath	MEDIUM	$ 230
BV417	Short St	Footpath clearing (vegetation)	MEDIUM	$ 20
BV418	Short St	Footpath clearing (vegetation)	MEDIUM	$ 20
BV419	Short St	Footpath grinding	MEDIUM	$ 70
BV420	Short St	Footpath grinding	MEDIUM	$ 70
BV421	Short St	Footpath grinding	MEDIUM	$ 70
BV422	Wattle Rd/Short St	Footpath clearing (vegetation)	MEDIUM	$ 20
BV423	Wattle Rd	Repair footpath	MEDIUM	$ 230
BV424	Wattle Rd	Repair footpath	MEDIUM	$ 230
BV425	Wattle Rd	Footpath grinding	LOW	$ 70
BV426	Wattle Rd/Short St	Remove obstruction	MEDIUM	$ 230
BV427	Short St	Footpath clearing (vegetation)	MEDIUM	$ 20
BV428	Short St	Repair footpath	MEDIUM	$ 230
BV429	Short St	Repair footpath	MEDIUM	$ 230
BV430	Short St	Repair footpath	MEDIUM	$ 230
BV431	Grosvenor Pl	Repair footpath	MEDIUM	$ 230
BV432	Grosvenor Pl	Repair footpath	MEDIUM	$ 230
BV433	Grosvenor Pl	Footpath grinding	MEDIUM	$ 70
BV434	William St/Grosvenor Pl	Footpath clearing (vegetation)	MEDIUM	$ 20
BV435	William St	Repair footpath	MEDIUM	$ 230
BV436	William St	Footpath grinding	MEDIUM	$ 70
BV437	William St	Repair footpath	MEDIUM	$ 230
BV438	William St	Footpath grinding	MEDIUM	$ 70
BV439	William St	Footpath grinding	MEDIUM	$ 70
BV440	William St	Footpath clearing (vegetation)	MEDIUM	$ 20
BV441	William St	Footpath clearing (vegetation)	MEDIUM	$ 20
BV442	William St	Repair footpath	MEDIUM	$ 230
BV443	William St	Footpath clearing (vegetation)	MEDIUM	$ 20

Estimated Costs	
LOW	$ 2,144
MEDIUM	$ 57,186
HIGH	$ 74,201

Collaroy Footpath Maintenance Schedule

ID	Location	Decription	Priority	Cost
CO01	Collaroy St	Kerb access ramp (repair)	HIGH	$ 1,200
CO02	Collaroy St/Pittwater Rd	Kerb access ramp (repair)	HIGH	$ 1,200
CO03	Pittwater Rd	Kerb access ramp (repair)	HIGH	$ 1,200
CO04	Collaroy St/Pittwater Rd	Kerb access ramp (new)	HIGH	$ 1,000

CO05	Collaroy St/Pittwater Rd	Kerb access ramp (repair)	HIGH	$	1,200
CO06	Pittwater Rd	Kerb access ramp (repair)	HIGH	$	1,200
CO07	Pittwater Rd	Kerb access ramp (new)	HIGH	$	1,000
CO08	Pittwater Rd/Ocean Gr	Kerb access ramp (repair)	HIGH	$	1,200
CO09	Pittwater Rd/Ocean Gr	Kerb access ramp (repair)	HIGH	$	1,200
CO10	Pittwater Rd/Ocean Gr	Kerb access ramp (repair)	HIGH	$	1,200
CO11	Pittwater Rd/Ocean Gr	Kerb access ramp (repair)	HIGH	$	1,200
CO12	Ocean Gr	Kerb access ramp (repair)	HIGH	$	1,200
CO13	Pittwater Rd/Eastbank St	Kerb access ramp (repair)	HIGH	$	1,200
CO14	Pittwater Rd/Alexander St	Kerb access ramp (repair)	HIGH	$	1,200
CO15	Pittwater Rd/Alexander St	Kerb access ramp (repair)	HIGH	$	1,200
CO16	Collaroy St	Repair footpath	HIGH	$	230
CO17	Collaroy St	Repair stairs	HIGH	$	331
CO18	Collaroy St	Remove obstruction (pole)	HIGH	$	230
CO19	Pittwater Rd	Repair footpath	HIGH	$	230
CO20	Pittwater Rd	Repair footpath	HIGH	$	230
CO21	Pittwater Rd	Footpath Grinding	HIGH	$	70
CO22	Pittwater Rd	Footpath Grinding	HIGH	$	70
CO23	Pittwater Rd	Repair footpath	HIGH	$	230
CO24	Pittwater Rd	Repair footpath	HIGH	$	230
CO25	Pittwater Rd/Alexander St	Footpath Grinding	HIGH	$	70
CO26	Pittwater Rd/Alexander St	Repair footpath	HIGH	$	230
CO27	Pittwater Rd	Repair footpath	HIGH	$	230
CO28	Pittwater Rd	Footpath Grinding	HIGH	$	70
CO29	Pittwater Rd	Repair footpath	HIGH	$	230
CO30	Pittwater Rd	Repair footpath	HIGH	$	230
CO31	Pittwater Rd	Footpath Grinding	HIGH	$	70
CO32	Pittwater Rd	Footpath Grinding	HIGH	$	70
CO33	Pittwater Rd	Repair footpath	HIGH	$	230
CO34	Pittwater Rd	Repair footpath	HIGH	$	230
CO35	Pittwater Rd	Repair footpath	HIGH	$	230
CO36	Pittwater Rd	Footpath Grinding	HIGH	$	70
CO37	Pittwater Rd	Footpath Grinding	HIGH	$	70
CO38	Collaroy St	Repair footpath	HIGH	$	230

Estimated Costs	
LOW	$ -
MEDIUM	$ -
HIGH	$ 21,717

Collaroy Plateau Footpath Maintenance Schedule

ID	Location	Decription	Priority	Cost	
CP01	Veterans Pde/Grevillea St	Kerb access ramp (repair)	MEDIUM	$	1,200
CP02	Veterans Pde/Grevillea St	Kerb access ramp (repair)	MEDIUM	$	1,200
CP03	Veterans Pde	Kerb access ramp (repair)	MEDIUM	$	1,200
CP04	Veterans Pde	Kerb access ramp (repair)	MEDIUM	$	1,200
CP05	Veterans Pde	Kerb access ramp (repair)	MEDIUM	$	1,200
CP06	Veterans Pde	Kerb access ramp (new)	MEDIUM	$	1,000
CP07	Veterans Pde/Edgecliffe Blvd	Kerb access ramp (repair)	MEDIUM	$	1,200
CP08	Veterans Pde/Edgecliffe Blvd	Kerb access ramp (repair)	MEDIUM	$	1,200
CP09	Rose Ave	Kerb access ramp (repair)	MEDIUM	$	1,200
CP11	Veterans Pde	Remove obstruction	MEDIUM	$	230
CP12	Veterans Pde	Remove obstruction	MEDIUM	$	230
CP13	Veterans Pde	installation of wheel stops	MEDIUM	$	3,000
CP14	Veterans Pde	Footpath grinding	MEDIUM	$	70
CP15	Veterans Pde	Repair footpath	MEDIUM	$	230
CP16	Veterans Pde	Repair footpath	MEDIUM	$	230
CP17	Veterans Pde	Repair footpath	MEDIUM	$	230
CP18	Veterans Pde	Repair footpath	MEDIUM	$	230
CP19	Veterans Pde/Lantana Ave	Repair footpath	MEDIUM	$	230
CP20	Veterans Pde	Footpath grinding	MEDIUM	$	70
CP21	Veterans Pde	Footpath clearing (vegetation)	MEDIUM	$	20
CP22	Veterans Pde	Repair footpath	MEDIUM	$	230
CP23	Veterans Pde	Repair footpath	MEDIUM	$	230
CP24	Veterans Pde	Repair footpath	MEDIUM	$	230
CP25	Lantana Ave	Footpath grinding	MEDIUM	$	70
CP26	Veterans Pde	Remove obstruction	MEDIUM	$	230
CP27	Veterans Pde	Remove obstruction	MEDIUM	$	230
CP28	Veterans Pde	Remove obstruction	MEDIUM	$	230
CP29	Veterans Pde	Repair footpath	MEDIUM	$	230
CP30	Veterans Pde	Remove obstruction	MEDIUM	$	230

Estimated Costs	
LOW	$ -
MEDIUM	$ 17,286
HIGH	$ -

Cromer Work Schedule

ID	Location	Decription	Priority	Cost	
CR01	Pittwater Rd	Kerb access ramp (repair)	HIGH	$	1,200
CR02	Pittwater Rd	Kerb access ramp (repair)	HIGH	$	1,200
CR03	Pittwater Rd	Kerb access ramp (repair)	HIGH	$	1,200
CR04	Pittwater Rd	Kerb access ramp (repair)	HIGH	$	1,200
CR05	Campbell Ave	Kerb access ramp (repair) repair refuge island	MEDIUM	$	19,200

CR06	Campbell Ave	Kerb access ramp (repair)	MEDIUM	$ 1,200
CR07	South Creek Rd/Campbell Ave	Kerb access ramp (repair) repair refuge island	MEDIUM	$ 19,200
CR08	Campbell Ave	Kerb access ramp (repair)	MEDIUM	$ 1,200
CR09	Campbell Ave/Turner St	Kerb access ramp (repair)	MEDIUM	$ 1,200
CR10	Campbell Ave/Turner St	Kerb access ramp (repair)	MEDIUM	$ 1,200
CR11	South Creek Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200
CR12	South Creek Rd/Campbell Ave	Kerb access ramp (repair)	MEDIUM	$ 1,200
CR13	South Creek Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200
CR14	South Creek Rd/Parkes Rd	Kerb access ramp (new) install refuge island	MEDIUM	$ 19,200
CR15	Penrith Ave	Kerb access ramp (repair)	MEDIUM	$ 1,200
CR16	South Creek Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200
CR17	South Creek Rd	Kerb access ramp (new)	HIGH	$ 1,000
CR18	South Creek Rd	Kerb access ramp (new)	HIGH	$ 1,000
CR19	South Creek Rd	Kerb access ramp (new)	HIGH	$ 1,000
CR20	South Creek Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200
CR43	South Creek Rd East	Footpath grinding	HIGH	$ 70
CR44	South Creek Rd East	Repair footpath	HIGH	$ 230
CR45	South Creek Rd East	Footpath grinding	HIGH	$ 70
CR46	South Creek Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
CR47	Campbell Ave	Repair footpath	MEDIUM	$ 230
CR48	Campbell Ave	Repair footpath	MEDIUM	$ 230
CR49	Campbell Ave	Footpath grinding	MEDIUM	$ 70
CR50	Campbell Ave	Repair footpath	MEDIUM	$ 230
CR51	Campbell Ave	Footpath grinding	HIGH	$ 70
CR52	Campbell Ave	Footpath grinding	HIGH	$ 70
CR53	South Creek Rd	Remove obstruction	HIGH	$ 230
CR54	South Creek Rd	Footpath grinding	MEDIUM	$ 70
CR55	South Creek Rd	Footpath clearing (vegetation)	HIGH	$ 20
CR56	Inman Rd/Orlando Rd	Footpath clearing (vegetation)	LOW	$ 20
CR57	Inman Rd	Repair footpath	LOW	$ 230
CR58	Boola Pl	Footpath grinding	LOW	$ 70
CR59	Boola Pl	Control parking (parking inspector required)	LOW	-
CR60	Boola Pl	Repair footpath	LOW	$ 230
CR61	Boola Pl	Footpath grinding	LOW	$ 70
CR62	Boola Pl	Repair footpath	LOW	$ 230
CR63	Middleton Rd	Footpath clearing (vegetation)	LOW	$ 20
CR64	Middleton Rd	Footpath clearing (vegetation)	LOW	$ 20
CR65	South Creek Rd	Repair footpath	MEDIUM	$ 230
CR66	South Creek Rd	Repair footpath	MEDIUM	$ 230
CR67	South Creek Rd	Repair footpath	MEDIUM	$ 230
CR68	South Creek Rd	Repair footpath	MEDIUM	$ 230
CR69	South Creek Rd	Footpath grinding	MEDIUM	$ 70
CR70	South Creek Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
CR71	South Creek Rd	Footpath grinding	MEDIUM	$ 70
CR72	South Creek Rd/Dumic Pl	Footpath grinding	MEDIUM	$ 70

Estimated Costs	
LOW	$ 891
MEDIUM	$ 71,603
HIGH	$ 8,561

Cromer Heights Footpath Maintenance Schedule

ID	Location	Decription	Priority	Cost
CH01	Truman Ave/Belmore Ln	Kerb access ramp (repair)	MEDIUM	$ 1,200
CH02	Truman Ave/Belmore Ln	Kerb access ramp (repair)	MEDIUM	$ 1,200
CH03	Truman Ave/Howse Cres/1	Kerb access ramp (repair)	MEDIUM	$ 1,200
CH04	Truman Ave/Howse Cres/1	Kerb access ramp (repair)	MEDIUM	$ 1,200
CH05	Maybrook Ave/Belmore Ln	Kerb access ramp (repair)	MEDIUM	$ 1,200
CH06	Maybrook Ave/Jersey Pl	Kerb access ramp (repair)	MEDIUM	$ 1,200
CH07	Maybrook Ave/Jersey Pl	Kerb access ramp (repair)	MEDIUM	$ 1,200
CH09	Maybrook Ave/Truman Ave	Repair footpath	MEDIUM	$ 230
CH10	Maybrook Ave	Footpath grinding	MEDIUM	$ 70
CH11	Maybrook Ave	Footpath grinding	MEDIUM	$ 70

Estimated Costs	
LOW	$ -
MEDIUM	$ 8,770
HIGH	$ -

Dee Why Footpath Maintenance Schedule

ID	Location	Decription	Priority	Cost
DW001	Pittwater Rd/Redman Rd	Kerb access ramp (new)	HIGH	$ 1,000
DW002	Lewis St/Fisher Rd	Kerb access ramp (repair)	HIGH	$ 1,200
DW003	Lewis St/Fisher Rd	Kerb access ramp (repair)	HIGH	$ 1,200
DW004	Lewis St/Fisher Rd	Kerb access ramp (repair)	HIGH	$ 1,200
DW005	Lewis St/Fisher Rd	Kerb access ramp (new)	HIGH	$ 1,000
DW006	Lewis St/Fisher Rd	Kerb access ramp (new)	HIGH	$ 1,000
DW007	Lewis St/Fisher Rd	Kerb access ramp (new)	HIGH	$ 1,000
DW008	Lewis St/Fisher Rd	Kerb access ramp (repair)	HIGH	$ 1,200
DW009	Lewis St	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW010	Francis St	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW011	Lewis St/Francis St	Kerb access ramp (new)	MEDIUM	$ 1,000
DW012	Redman Rd/Mooramba Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW013	Redman Rd/Mooramba Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200

DW014	Mooramba Rd/Burne Ave	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW015	Mooramba Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW016	Pittwater Rd/May Rd	Kerb access ramp (repair)	HIGH	$ 1,200
DW017	Pittwater Rd/Sturdee Pde	Kerb access ramp (new)	HIGH	$ 1,000
DW018	Pittwater Rd/Sturdee Pde	Kerb access ramp (new)	HIGH	$ 1,000
DW019	Pittwater Rd	Kerb access ramp (new)	HIGH	$ 1,000
DW020	Pittwater Rd	Kerb access ramp (new)	HIGH	$ 1,000
DW021	Pittwater Rd/Howard Ave	Kerb access ramp (repair)	HIGH	$ 1,200
DW022	Pittwater Rd/Howard Ave	Kerb access ramp (repair)	HIGH	$ 1,200
DW023	Pittwater Rd	Kerb access ramp (repair)	HIGH	$ 1,200
DW024	Fisher Rd/Kingsway	Kerb access ramp (repair)	HIGH	$ 1,200
DW025	Kingsway	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW026	Kingsway	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW027	Kingsway	Kerb access ramp (new)	MEDIUM	$ 1,000
DW028	Kingsway	Kerb access ramp (new)	MEDIUM	$ 1,000
DW029	Kingsway	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW030	Kingsway	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW031	Kingsway	Kerb access ramp (new)	MEDIUM	$ 1,000
DW032	Kingsway	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW033	Kingsway	Kerb access ramp (new)	MEDIUM	$ 1,000
DW034	Kingsway	Kerb access ramp (new)	MEDIUM	$ 1,000
DW035	Kingsway	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW036	Kingsway	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW037	St David Ave	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW038	Pittwater Rd	Kerb access ramp (repair)	HIGH	$ 1,200
DW039	Kingsway/Westminster Ave	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW040	Regent St/Westminster Ave	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW041	Pittwater Rd/Hawkesbury Ave	Kerb access ramp (repair)	HIGH	$ 1,200
DW042	Pittwater Rd/Hawkesbury Ave	Kerb access ramp (repair)	HIGH	$ 1,200
DW043	Pittwater Rd/Hawkesbury Ave	Kerb access ramp (repair)	HIGH	$ 1,200
DW044	Pittwater Rd/Deewhy Pde	Kerb access ramp (repair)	HIGH	$ 1,200
DW045	Pittwater Rd/Deewhy Pde	Kerb access ramp (repair)	HIGH	$ 1,200
DW046	Pittwater Rd/Deewhy Pde	Kerb access ramp (repair)	HIGH	$ 1,200
DW047	Pittwater Rd/Hawkesbury Ave	Kerb access ramp (repair)	HIGH	$ 1,200
DW048	Deewhy Pde	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW049	Deewhy Pde	Kerb access ramp (new)	MEDIUM	$ 1,000
DW050	Deewhy Pde	Kerb access ramp (new)	MEDIUM	$ 1,000
DW051	Clyde Rd/Deewhy Pde	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW052	Clyde Rd/Deewhy Pde	Kerb access ramp (new)	MEDIUM	$ 1,000
DW053	Clyde Rd/Deewhy Pde	Kerb access ramp (new)	MEDIUM	$ 1,000
DW054	Deewhy Pde	Kerb access ramp (new)	MEDIUM	$ 1,000
DW055	Avon Rd/Richmond Ave	Kerb access ramp (new)	MEDIUM	$ 1,000
DW056	Avon Rd	Kerb access ramp (repair)	HIGH	$ 1,200
DW057	Avon Rd	Kerb access ramp (repair)	HIGH	$ 1,200
DW058	Deewhy Pde	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW059	Avon Rd	Kerb access ramp (repair)	HIGH	$ 1,200
DW060	Avon Rd	Kerb access ramp (repair)	HIGH	$ 1,200
DW061	Deewhy Pde/Avon Rd	Kerb access ramp (repair)	HIGH	$ 1,200
DW062	The Strand	Kerb access ramp (repair)	HIGH	$ 1,200
DW063	Howard Ave/The Strand	Kerb access ramp (repair)	HIGH	$ 1,200
DW064	Howard Ave/The Strand	Kerb access ramp (repair)	HIGH	$ 1,200
DW065	Howard Ave	Kerb access ramp (repair)	HIGH	$ 1,200
DW066	Howard Ave	Kerb access ramp (repair)	HIGH	$ 1,200
DW067	Howard Ave/Avon Rd	Kerb access ramp (repair)	HIGH	$ 1,200
DW068	Avon Rd	Kerb access ramp (repair)	HIGH	$ 1,200
DW069	Howard Ave	Kerb access ramp (repair)	HIGH	$ 1,200
DW070	Howard Ave	Kerb access ramp (repair)	HIGH	$ 1,200
DW071	Howard Ave/Avon Rd	Kerb access ramp (repair)	HIGH	$ 1,200
DW072	Howard Ave/Avon Rd	Kerb access ramp (repair)	HIGH	$ 1,200
DW073	Pittwater Rd	Kerb access ramp (repair)	HIGH	$ 1,200
DW074	Pittwater Rd/Howard Ave	Kerb access ramp (repair)	HIGH	$ 1,200
DW075	Oaks Ave	Kerb access ramp (repair)	HIGH	$ 1,200
DW076	Oaks Ave	Kerb access ramp (repair)	HIGH	$ 1,200
DW077	Oaks Ave	Kerb access ramp (repair)	HIGH	$ 1,200
DW078	Oaks Ave/Avon Rd	Kerb access ramp (repair)	HIGH	$ 1,200
DW079	Avon Rd	Kerb access ramp (repair)	HIGH	$ 1,200
DW080	Oaks Ave/Avon Rd	Kerb access ramp (repair)	HIGH	$ 1,200
DW081	Oaks Ave/Avon Rd	Kerb access ramp (repair)	HIGH	$ 1,200
DW082	Avon Rd	Kerb access ramp (repair)	HIGH	$ 1,200
DW083	Oaks Ave/Clyde Rd	Kerb access ramp (repair)	HIGH	$ 1,200
DW084	Monash Pde/Pacific Pde	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW085	Monash Pde/Pacific Pde	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW086	Monash Pde/Pacific Pde	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW087	Monash Pde/Pacific Pde	Kerb access ramp (repair)	MEDIUM	$ 1,200

DW088	Griffin Rd/Pacific Pde	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW089	Griffin Rd/Pacific Pde	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW090	Pacific Pde	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW091	Pacific Pde	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW092	Griffin Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW093	Griffin Rd/Pacific Pde	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW094	Griffin Rd/Pacific Pde	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW095	Pacific Pde/Cassia St	Kerb access ramp (new)	MEDIUM	$ 1,000
DW096	Pacific Pde/Cassia St	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW097	Pacific Pde/Wheeler Pde	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW098	Pacific Pde/Wheeler Pde	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW099	Pacific Pde/Avon Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW100	Pacific Pde/Avon Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW101	Pacific Pde/The Crescent	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW102	Pacific Pde/The Crescent	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW103	Pacific Pde	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW104	Delmar Pde/Patey St	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW105	Delmar Pde/Patey St	Kerb access ramp (repair)	MEDIUM	$ 1,200
DW106	Pittwater Rd/Harbord Rd	Kerb access ramp (repair)	HIGH	$ 1,200
DW123	Fisher Rd	Footpath grinding	HIGH	$ 70
DW124	Fisher Rd	Footpath grinding	HIGH	$ 70
DW125	Fisher Rd	Footpath grinding	HIGH	$ 70
DW126	Fisher Rd	Repair footpath	HIGH	$ 230
DW127	Fisher Rd	Footpath grinding	HIGH	$ 70
DW128	Fisher Rd	Footpath grinding	HIGH	$ 70
DW129	Lewis St	Repair footpath	MEDIUM	$ 230
DW130	Francis St	Footpath grinding	MEDIUM	$ 70
DW131	Francis St	Repair footpath	MEDIUM	$ 230
DW132	Francis St	Footpath grinding	MEDIUM	$ 70
DW133	Francis St	Footpath clearing (vegetation)	MEDIUM	$ 20
DW134	Mooramba Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
DW135	Mooramba Rd	Repair footpath	MEDIUM	$ 230
DW136	Mooramba Rd	Footpath grinding	MEDIUM	$ 70
DW137	Mooramba Rd	Repair footpath	MEDIUM	$ 230
DW138	Mooramba Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
DW139	Mooramba Rd	Footpath grinding	MEDIUM	$ 70
DW140	Mooramba Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
DW141	Mooramba Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
DW142	Mooramba Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
DW143	Fisher Rd	Repair footpath	HIGH	$ 230
DW144	Fisher Rd	Repair footpath	HIGH	$ 230
DW145	St David Ave	Footpath grinding	MEDIUM	$ 70
DW146	St David Ave	Footpath grinding	MEDIUM	$ 70
DW147	Pittwater Rd	Footpath grinding	HIGH	$ 70
DW148	Pittwater Rd	Repair footpath	HIGH	$ 230
DW149	Fisher Rd	Footpath grinding	HIGH	$ 70
DW150	Fisher Rd	Footpath clearing (vegetation)	HIGH	$ 20
DW151	Kingsway	Repair footpath	MEDIUM	$ 230
DW152	Kingsway	Repair footpath	MEDIUM	$ 230
DW153	Kingsway	Repair footpath	MEDIUM	$ 230
DW154	Kingsway	Repair footpath	MEDIUM	$ 230
DW155	Kingsway	Footpath clearing (vegetation)	MEDIUM	$ 20
DW156	Kingsway	Repair footpath	MEDIUM	$ 230
DW157	Kingsway	Repair footpath	MEDIUM	$ 230
DW158	St David Ave	Footpath grinding	MEDIUM	$ 70
DW159	St David Ave	Repair footpath	MEDIUM	$ 230
DW160	St David Ave	Repair footpath	MEDIUM	$ 230
DW161	St David Ave	Repair footpath	MEDIUM	$ 230
DW162	St David Ave	Footpath grinding	MEDIUM	$ 70
DW163	St David Ave	Footpath grinding	MEDIUM	$ 70
DW164	St David Ave	Repair footpath	MEDIUM	$ 230
DW165	St David Ave	Repair footpath	MEDIUM	$ 230
DW166	St David Ave	Footpath clearing (vegetation)	MEDIUM	$ 20
DW167	Pittwater Rd/Howard Ave	Footpath grinding	HIGH	$ 70
DW168	Pittwater Rd	Footpath grinding	HIGH	$ 70
DW169	Pittwater Rd	Footpath grinding	HIGH	$ 70
DW170	Pittwater Rd	Footpath grinding	HIGH	$ 70
DW171	Pittwater Rd	Footpath grinding	HIGH	$ 70
DW172	Kingsway	Footpath grinding	MEDIUM	$ 70
DW173	Kingsway	Footpath grinding	MEDIUM	$ 70
DW174	Kingsway	Footpath grinding	MEDIUM	$ 70
DW175	Kingsway	Repair footpath	MEDIUM	$ 230
DW176	Kingsway	Repair footpath	MEDIUM	$ 230
DW177	Kingsway/Westminster Ave	Repair footpath	MEDIUM	$ 230

DW178	Kingsway	Repair footpath	MEDIUM	$ 230
DW179	Kingsway	Footpath clearing (vegetation)	MEDIUM	$ 20
DW180	Kingsway	Footpath grinding	MEDIUM	$ 70
DW181	Kingsway	Repair footpath	MEDIUM	$ 230
DW182	Kingsway	Footpath grinding	MEDIUM	$ 70
DW183	Westminster Ave	Repair footpath	MEDIUM	$ 230
DW184	Westminster Ave	Footpath clearing (vegetation)	MEDIUM	$ 20
DW185	Westminster Ave	Footpath grinding	MEDIUM	$ 70
DW186	Westminster Ave	Footpath clearing (vegetation)	MEDIUM	$ 20
DW187	Westminster Ave	Footpath grinding	MEDIUM	$ 70
DW188	Hawkesbury Ave	Footpath grinding	MEDIUM	$ 70
DW189	Pittwater Rd	Footpath grinding	HIGH	$ 70
DW190	Pittwater Rd	Footpath grinding	HIGH	$ 70
DW191	Pittwater Rd	Footpath grinding	HIGH	$ 70
DW192	Pittwater Rd	Repair footpath	HIGH	$ 230
DW193	Pittwater Rd	Footpath grinding	HIGH	$ 70
DW194	Pittwater Rd	Footpath grinding	HIGH	$ 70
DW195	Pittwater Rd	Footpath grinding	HIGH	$ 70
DW196	Pittwater Rd	Footpath grinding	HIGH	$ 70
DW197	Hawkesbury Ave	Repair footpath	MEDIUM	$ 230
DW198	Hawkesbury Ave	Repair footpath	MEDIUM	$ 230
DW199	Hawkesbury Ave	Repair footpath	MEDIUM	$ 230
DW200	Clarence Ave	Repair footpath	MEDIUM	$ 230
DW201	Clarence Ave	Footpath grinding	MEDIUM	$ 70
DW202	Clarence Ave	Repair footpath	MEDIUM	$ 230
DW203	Clarence Ave	Footpath grinding	MEDIUM	$ 70
DW204	Clarence Ave	Footpath clearing (vegetation)	MEDIUM	$ 20
DW205	Clarence Ave	Repair footpath	MEDIUM	$ 230
DW206	Deewhy Pde	Repair footpath	MEDIUM	$ 230
DW207	Deewhy Pde	Repair footpath	MEDIUM	$ 230
DW208	Deewhy Pde	Footpath clearing (vegetation)	MEDIUM	$ 20
DW209	Deewhy Pde	Repair footpath	MEDIUM	$ 230
DW210	Deewhy Pde	Repair footpath	MEDIUM	$ 230
DW211	Deewhy Pde	Footpath grinding	MEDIUM	$ 70
DW212	Deewhy Pde	Footpath grinding	MEDIUM	$ 70
DW213	Richmond Ave	Footpath grinding	MEDIUM	$ 70
DW214	Richmond Ave	Repair footpath	MEDIUM	$ 230
DW215	Richmond Ave	Repair footpath	MEDIUM	$ 230
DW216	Richmond Ave	Footpath grinding	MEDIUM	$ 70
DW217	Richmond Ave	Footpath clearing (vegetation)	MEDIUM	$ 20
DW218	Richmond Ave	Repair footpath	MEDIUM	$ 230
DW219	Richmond Ave	Footpath grinding	MEDIUM	$ 70
DW220	Richmond Ave	Repair footpath	MEDIUM	$ 230
DW221	Richmond Ave	Footpath clearing (vegetation)	MEDIUM	$ 20
DW222	Richmond Ave	Repair footpath	MEDIUM	$ 230
DW223	Richmond Ave	Footpath grinding	MEDIUM	$ 70
DW224	Richmond Ave	Repair footpath	MEDIUM	$ 230
DW225	Richmond Ave	Repair footpath	MEDIUM	$ 230
DW226	Richmond Ave	Repair footpath	MEDIUM	$ 230
DW227	Richmond Ave/Clyde Rd	Repair footpath	MEDIUM	$ 230
DW228	Clyde Rd	Repair footpath	MEDIUM	$ 230
DW229	Clyde Rd	Repair footpath	MEDIUM	$ 230
DW230	Clyde Rd	Footpath grinding	MEDIUM	$ 70
DW231	Richmond Ave	Footpath grinding	MEDIUM	$ 70
DW232	Richmond Ave	Repair footpath	MEDIUM	$ 230
DW233	Richmond Ave	Repair footpath	MEDIUM	$ 230
DW234	Richmond Ave	Repair footpath	MEDIUM	$ 230
DW235	Richmond Ave	Repair footpath	MEDIUM	$ 230
DW236	Richmond Ave	Repair footpath	MEDIUM	$ 230
DW237	Avon Rd	Repair footpath	MEDIUM	$ 230
DW238	Avon Rd	Repair footpath	MEDIUM	$ 230
DW239	Avon Rd	Repair footpath	MEDIUM	$ 230
DW240	Avon Rd	Repair footpath	MEDIUM	$ 230
DW241	Avon Rd	Repair footpath	MEDIUM	$ 230
DW242	Avon Rd	Repair footpath	MEDIUM	$ 230
DW243	Avon Rd	Repair footpath	MEDIUM	$ 230
DW244	Richmond Ave	Repair footpath	MEDIUM	$ 230
DW245	Richmond Ave	Repair footpath	MEDIUM	$ 230
DW246	Richmond Ave	Repair footpath	MEDIUM	$ 230
DW247	Richmond Ave	Repair footpath	MEDIUM	$ 230
DW248	Richmond Ave	Repair footpath	MEDIUM	$ 230
DW249	Deewhy Pde	Footpath grinding	MEDIUM	$ 70
DW250	Deewhy Pde	Repair footpath	MEDIUM	$ 230
DW251	Deewhy Pde	Repair footpath	MEDIUM	$ 230

DW252	Deewhy Pde	Footpath grinding	MEDIUM	$ 70
DW253	Deewhy Pde	Repair footpath	MEDIUM	$ 230
DW254	Deewhy Pde	Footpath grinding	MEDIUM	$ 70
DW255	Deewhy Pde	Repair footpath	MEDIUM	$ 230
DW256	Deewhy Pde	Repair footpath	MEDIUM	$ 230
DW257	Deewhy Pde	Footpath clearing (vegetation)	MEDIUM	$ 20
DW258	Deewhy Pde	Repair footpath	MEDIUM	$ 230
DW259	Deewhy Pde	Repair footpath	MEDIUM	$ 230
DW260	Deewhy Pde	Repair footpath	MEDIUM	$ 230
DW261	Deewhy Pde	Repair footpath	MEDIUM	$ 230
DW262	Deewhy Pde	Footpath grinding	MEDIUM	$ 70
DW263	Deewhy Pde	Parking inspector required	LOW	-
DW264	Deewhy Pde	Footpath grinding	MEDIUM	$ 70
DW265	Deewhy Pde	Footpath grinding	MEDIUM	$ 70
DW266	Deewhy Pde	Repair footpath	MEDIUM	$ 230
DW267	Deewhy Pde	Footpath grinding	MEDIUM	$ 70
DW268	Deewhy Pde	Footpath grinding	MEDIUM	$ 70
DW269	Deewhy Pde	Repair footpath	MEDIUM	$ 230
DW270	Deewhy Pde	Footpath grinding	MEDIUM	$ 70
DW271	Deewhy Pde	Footpath grinding	MEDIUM	$ 70
DW272	Deewhy Pde	Repair footpath	MEDIUM	$ 230
DW273	Deewhy Pde	Repair footpath	MEDIUM	$ 230
DW274	Howard Ave	Footpath grinding	HIGH	$ 70
DW275	Howard Ave	Repair footpath	HIGH	$ 230
DW276	Howard Ave	Repair footpath	HIGH	$ 230
DW277	Howard Ave	Repair footpath	HIGH	$ 230
DW278	Howard Ave	Repair footpath	HIGH	$ 230
DW279	Clyde Rd	Repair footpath	MEDIUM	$ 230
DW280	Clyde Rd	Footpath grinding	MEDIUM	$ 70
DW281	Clyde Rd	Parking inspector required	LOW	-
DW282	Clyde Rd	Repair footpath	MEDIUM	$ 230
DW283	Clyde Rd	Parking inspector required	LOW	-
DW284	Clyde Rd	Repair footpath	MEDIUM	$ 230
DW285	Clyde Rd	Footpath grinding	MEDIUM	$ 70
DW286	Howard Ave	Repair footpath	HIGH	$ 230
DW287	Howard Ave	Footpath clearing (vegetation)	HIGH	$ 20
DW288	Howard Ave	Footpath clearing (vegetation)	HIGH	$ 20
DW289	Howard Ave	Repair footpath	HIGH	$ 230
DW290	Howard Ave	Repair footpath	HIGH	$ 230
DW291	Howard Ave	Footpath clearing (vegetation)	HIGH	$ 20
DW292	Howard Ave	Repair footpath	HIGH	$ 230
DW293	Howard Ave	Repair footpath	HIGH	$ 230
DW294	Howard Ave	Repair footpath	HIGH	$ 230
DW295	Avon Rd	Repair footpath	MEDIUM	$ 230
DW296	Howard Ave	Repair footpath	HIGH	$ 230
DW297	Howard Ave	Repair footpath	HIGH	$ 230
DW298	Howard Ave	Footpath grinding	HIGH	$ 70
DW299	Howard Ave	Repair footpath	HIGH	$ 230
DW300	Howard Ave	Footpath grinding	HIGH	$ 70
DW301	Howard Ave	Footpath grinding	HIGH	$ 70
DW302	Howard Ave	Repair footpath	HIGH	$ 230
DW303	Howard Ave	Repair footpath	HIGH	$ 230
DW304	Howard Ave	Repair footpath	HIGH	$ 230
DW305	Howard Ave	Footpath grinding	HIGH	$ 70
DW306	Howard Ave	Repair footpath	HIGH	$ 230
DW307	Howard Ave	Repair footpath	HIGH	$ 230
DW308	Howard Ave	Footpath grinding	HIGH	$ 70
DW309	Howard Ave	Repair footpath	HIGH	$ 230
DW310	Howard Ave	Footpath grinding	HIGH	$ 70
DW311	Howard Ave	Footpath grinding	HIGH	$ 70
DW312	Howard Ave	Footpath grinding	HIGH	$ 70
DW313	Howard Ave	Footpath grinding	HIGH	$ 70
DW314	Howard Ave	Footpath grinding	HIGH	$ 70
DW315	Pittwater Rd	Repair footpath	HIGH	$ 230
DW316	Pittwater Rd/Howard Ave	Footpath grinding	HIGH	$ 70
DW317	Oaks Ave	Footpath grinding	HIGH	$ 70
DW318	Oaks Ave	Install wheel stops	HIGH	$ 200
DW319	Oaks Ave	Repair footpath	HIGH	$ 230
DW320	Oaks Ave	Install wheel stops	HIGH	$ 200
DW321	Oaks Ave	Repair footpath	HIGH	$ 230
DW322	Oaks Ave	Footpath grinding	HIGH	$ 70
DW323	Oaks Ave	Repair footpath	HIGH	$ 230
DW324	Oaks Ave	Repair footpath	HIGH	$ 230
DW325	Oaks Ave	Repair footpath	HIGH	$ 230

DW326	Oaks Ave	Repair footpath	HIGH	$ 230
DW327	Oaks Ave	Repair footpath	HIGH	$ 230
DW328	Oaks Ave	Repair footpath	HIGH	$ 230
DW329	Oaks Ave	Footpath grinding	HIGH	$ 70
DW330	Oaks Ave	Repair footpath	HIGH	$ 230
DW331	Oaks Ave	Footpath grinding	HIGH	$ 70
DW332	Oaks Ave	Footpath grinding	HIGH	$ 70
DW333	Oaks Ave	Footpath grinding	HIGH	$ 70
DW334	Oaks Ave	Footpath clearing (vegetation)	HIGH	$ 20
DW335	Oaks Ave	Repair footpath	HIGH	$ 230
DW336	Oaks Ave	Footpath grinding	HIGH	$ 70
DW337	Oaks Ave	Footpath grinding	HIGH	$ 70
DW338	Oaks Ave	Footpath grinding	HIGH	$ 70
DW339	Oaks Ave/Avon Rd	Footpath grinding	HIGH	$ 70
DW340	Avon Rd	Repair footpath	MEDIUM	$ 230
DW341	Avon Rd	Repair footpath	MEDIUM	$ 230
DW342	Oaks Ave	Repair footpath	HIGH	$ 230
DW343	Oaks Ave	Footpath grinding	HIGH	$ 70
DW344	Oaks Ave	Repair footpath	HIGH	$ 230
DW345	Oaks Ave	Repair footpath	HIGH	$ 230
DW346	Clyde Rd	Repair footpath	MEDIUM	$ 230
DW347	Oaks Ave/Clyde Rd	Footpath grinding	HIGH	$ 70
DW348	Clyde Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
DW349	Oaks Ave	Repair footpath	HIGH	$ 230
DW350	Oaks Ave	Repair footpath	HIGH	$ 230
DW351	Oaks Ave	Footpath grinding	HIGH	$ 70
DW352	Oaks Ave	Footpath grinding	HIGH	$ 70
DW353	Oaks Ave	Footpath clearing (vegetation)	HIGH	$ 20
DW354	Oaks Ave	Repair footpath	HIGH	$ 230
DW355	Oaks Ave	Repair footpath	HIGH	$ 230
DW356	Oaks Ave	Repair footpath	HIGH	$ 230
DW357	Oaks Ave	Remove obstruction	HIGH	$ 230
DW358	Monash Pde	Footpath grinding	MEDIUM	$ 70
DW359	Monash Pde	Footpath grinding	MEDIUM	$ 70
DW360	Pacific Pde	Parking inspector required	LOW	-
DW361	Pacific Pde	Footpath grinding	MEDIUM	$ 70
DW362	Pacific Pde	Footpath clearing (vegetation)	MEDIUM	$ 20
DW363	Pacific Pde	Repair footpath	MEDIUM	$ 230
DW364	Pacific Pde	Repair footpath	MEDIUM	$ 230
DW365	Pacific Pde	Repair footpath	MEDIUM	$ 230
DW366	Pacific Pde	Repair footpath	MEDIUM	$ 230
DW367	Pacific Pde/The Strand	Repair footpath	HIGH	$ 230
DW368	Pacific Pde	Repair footpath	MEDIUM	$ 230
DW369	Pacific Pde	Footpath clearing (vegetation)	MEDIUM	$ 20
DW370	Pacific Pde	Repair footpath	MEDIUM	$ 230
DW371	Pacific Pde	Footpath clearing (vegetation)	MEDIUM	$ 20
DW372	Pacific Pde	Footpath clearing (vegetation)	MEDIUM	$ 20
DW373	Pacific Pde	Repair footpath	MEDIUM	$ 230
DW374	Pacific Pde	Repair footpath	MEDIUM	$ 230
DW375	Pacific Pde	Repair footpath	MEDIUM	$ 230
DW376	Pacific Pde	Footpath grinding	MEDIUM	$ 70
DW377	Pacific Pde	Repair footpath	MEDIUM	$ 230
DW378	Pacific Pde	Repair footpath	MEDIUM	$ 230
DW379	Pacific Pde	Repair footpath	MEDIUM	$ 230
DW380	Pacific Pde	Repair footpath	MEDIUM	$ 230
DW381	Pacific Pde	Repair footpath	MEDIUM	$ 230
DW382	Pacific Pde/Sturdee Pde	Footpath clearing (vegetation)	MEDIUM	$ 20
DW383	Pacific Pde/Sturdee Pde	Footpath grinding	MEDIUM	$ 70
DW384	Pacific Pde	Repair footpath	MEDIUM	$ 230
DW385	Pacific Pde	Repair footpath	MEDIUM	$ 230
DW386	Pacific Pde	Repair footpath	MEDIUM	$ 230
DW387	Pacific Pde	Repair footpath	MEDIUM	$ 230
DW388	Pacific Pde	Footpath clearing (vegetation)	MEDIUM	$ 20
DW389	Pacific Pde	Repair footpath	MEDIUM	$ 230
DW390	Pacific Pde	Repair footpath	MEDIUM	$ 230
DW391	Pacific Pde	Repair footpath	MEDIUM	$ 230
DW392	Pittwater Rd	Repair footpath	HIGH	$ 230
DW393	Pittwater Rd	Repair footpath	HIGH	$ 230
DW394	Pacific Pde	Repair footpath	MEDIUM	$ 230
DW395	Sturdee Pde	Repair footpath	MEDIUM	$ 230
DW396	Sturdee Pde	Repair footpath	MEDIUM	$ 230
DW397	Pacific Pde/Sturdee Pde	Repair footpath	MEDIUM	$ 230
DW398	Pacific Pde	Repair footpath	MEDIUM	$ 230
DW399	The Crescent	Repair footpath	MEDIUM	$ 230

DW400	Carew St	Repair footpath	MEDIUM	$	230
DW401	Carew St	Repair footpath	MEDIUM	$	230
DW402	Delmar Pde	Remove obstruction	MEDIUM	$	230
DW403	Delmar Pde	Footpath clearing (vegetation)	MEDIUM	$	20
DW404	Delmar Pde	Repair footpath	MEDIUM	$	230
DW405	Delmar Pde	Repair footpath	MEDIUM	$	230
DW406	Delmar Pde	Repair footpath	MEDIUM	$	230
DW407	Delmar Pde	Footpath grinding	MEDIUM	$	70
DW408	Delmar Pde	Repair footpath	MEDIUM	$	230
DW409	Delmar Pde	Footpath clearing (vegetation)	MEDIUM	$	20
DW410	Delmar Pde	Repair footpath	MEDIUM	$	230
DW411	Delmar Pde	Footpath clearing (vegetation)	MEDIUM	$	20
DW412	Delmar Pde	Footpath grinding	MEDIUM	$	70
DW413	Delmar Pde	Repair footpath	MEDIUM	$	230
DW414	Pittwater Rd	Repair footpath	HIGH	$	230
DW415	Pittwater Rd	Footpath clearing (vegetation)	HIGH	$	20

Estimated Costs	
LOW	$ -
MEDIUM	$ 91,236
HIGH	$ 76,749

Forestville Footpath Footpath Maintenance Schedule

ID	Location	Decription	Priority	Cost
FV01	Starkey St	Kerb access ramp (repair)	MEDIUM	$ 1,200
FV02	Starkey St	Kerb access ramp (repair)	MEDIUM	$ 1,200
FV03	Warringah Rd	Kerb access ramp (repair)	HIGH	$ 1,200
FV04	Warringah Rd	Kerb access ramp (repair)	HIGH	$ 1,200
FV05	Darley St	Kerb access ramp (repair)	MEDIUM	$ 1,200
FV06	Darley St	Kerb access ramp (repair)	MEDIUM	$ 1,200
FV07	Darley St/Violet Ave	Kerb access ramp (repair)	MEDIUM	$ 1,200
FV08	Darley St/Violet Ave	Kerb access ramp (new)	MEDIUM	$ 1,000
FV09	Darley St	Kerb access ramp (new)	MEDIUM	$ 1,000
FV10	Darley St/Violet Ave	Kerb access ramp (new)	MEDIUM	$ 1,000
FV11	Darley St	Kerb access ramp (repair)	MEDIUM	$ 1,200
FV12	Darley St	Kerb access ramp (repair)	MEDIUM	$ 1,200
FV13	Darley St/The Centre Ma	Kerb access ramp (repair)	MEDIUM	$ 1,200
FV14	Warringah Rd/Darley St	Footpath clearing (vegetation)	MEDIUM	$ 20
FV15	Starkey St	Footpath grinding	MEDIUM	$ 70
FV16	Starkey St	Footpath clearing (vegetation)	MEDIUM	$ 20
FV17	Violet Lne	Install wheel stops	MEDIUM	$ 200
FV18	Warringah Rd	Repair footpath	HIGH	$ 230
FV19	Warringah Rd	Footpath grinding	HIGH	$ 70
FV20	Warringah Rd	Footpath grinding	HIGH	$ 70
FV21	Warringah Rd	Repair footpath	HIGH	$ 230
FV22	Warringah Rd	Repair footpath	HIGH	$ 230
FV23	Warringah Rd	Repair footpath	HIGH	$ 230
FV24	Warringah Rd/Darley St	Repair footpath	HIGH	$ 230
FV25	Warringah Rd/Darley St	Footpath grinding	HIGH	$ 70
FV26	Warringah Rd/Darley St	Footpath grinding	HIGH	$ 70
FV27	Darley St	Repair footpath	MEDIUM	$ 230
FV28	Darley St	Install wheel stops	MEDIUM	$ 200
FV29	Darley St	Footpath clearing (vegetation)	MEDIUM	$ 20
FV30	Darley St	Install wheel stops	MEDIUM	$ 200
FV31	Darley St	Footpath grinding	MEDIUM	$ 70
FV32	Darley St	Repair footpath	MEDIUM	$ 230
FV33	Darley St	Footpath grinding	MEDIUM	$ 70
FV34	Warringah Rd	Repair footpath	HIGH	$ 230
FV35	Warringah Rd	Repair footpath	HIGH	$ 230
FV36	Warringah Rd	Repair footpath	HIGH	$ 230

Estimated Costs	
LOW	$ -
MEDIUM	$ 13,931
HIGH	$ 4,523

Forestway Footpath Maintenance Schedule

ID	Location	Decription	Priority	Cost
FW01	Russell Ave	Kerb access ramp (new)	MEDIUM	$ 1,000
FW02	Forest Wy	Kerb access ramp (repair)	MEDIUM	$ 1,200
FW03	Russell Ave	Kerb access ramp (repair)	MEDIUM	$ 1,200
FW04	Russell Ave	Kerb access ramp (new)	MEDIUM	$ 1,000
FW05	Russell Ave/Grace Ave	Kerb access ramp (new)	MEDIUM	$ 1,000
FW06	Grace Ave/Sorlie Pl	Kerb access ramp (new)	MEDIUM	$ 1,000
FW07	Grace Ave/Sorlie Pl	Kerb access ramp (new)	MEDIUM	$ 1,000
FW08	Grace Ave/Sorlie Pl	Kerb access ramp (new)	MEDIUM	$ 1,000
FW09	Grace Ave/Ann St	Kerb access ramp (repair)	MEDIUM	$ 1,200
FW10	Warringah Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200
FW11	Grace Ave/Ann St	Kerb access ramp (repair)	MEDIUM	$ 1,200
FW12	Russell Ave/Grace Ave	Kerb access ramp (new)	MEDIUM	$ 1,000
FW17	Russell Ave	Footpath clearing (vegetation)	MEDIUM	$ 230
FW18	Forest Wy/Russell Ave	Repair footpath	MEDIUM	$ 230
FW19	Russell Ave	Repair footpath	MEDIUM	$ 230
FW20	Russell Ave	Footpath grinding	MEDIUM	$ 70

FW21	Russell Ave	Repair footpath	MEDIUM	$ 230	
FW22	Grace Ave	Repair footpath	MEDIUM	$ 230	
FW23	Grace Ave	Footpath grinding	MEDIUM	$ 70	
FW24	Grace Ave	Repair footpath	MEDIUM	$ 230	
FW25	Warringah Rd	Footpath grinding	MEDIUM	$ 70	
FW26	Grace Ave/Ann St	Remove obstruction	MEDIUM	$ 230	
FW27	Grace Ave/Sorlie Pl	Remove obstruction	MEDIUM	$ 230	
FW28	Grace Ave/Sorlie Pl	Footpath clearing (vegetation)	MEDIUM	$ 20	**Estimated Costs**
FW29	Grace Ave	Footpath clearing (vegetation)	MEDIUM	$ 20	LOW $ -
FW30	Grace Ave	Repair footpath	MEDIUM	$ 230	MEDIUM $ 15,394
FW31	Russell Ave/Grace Ave	Footpath grinding	MEDIUM	$ 70	HIGH $ -

Frenchs Forest Footpath Maintenance Schedule

ID	Location	Decription	Priority	Cost
FF01	Pringle Ave/Drew Pl	Kerb access ramp (repair)	MEDIUM	$ 1,200
FF02	Pringle Ave/Drew Pl	Kerb access ramp (repair)	MEDIUM	$ 1,200
FF03	Pringle Ave	Kerb access ramp (repair)	MEDIUM	$ 1,200
FF04	Blackbutts Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200
FF05	Blackbutts Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200
FF06	Blackbutts Rd/Malbara Cres	Kerb access ramp (repair)	MEDIUM	$ 1,200
FF07	Blackbutts Rd	Kerb access ramp (new)	MEDIUM	$ 1,000
FF08	Blackbutts Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200
FF09	Blackbutts Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200
FF10	Glen St	Kerb access ramp (new)	MEDIUM	$ 1,000
FF11	Ashworth Ave	Kerb access ramp (new)	MEDIUM	$ 1,000
FF12	Pringle Ave/Glen St	Kerb access ramp (repair)	MEDIUM	$ 1,200
FF13	Yarrabin St/Glen St	Kerb access ramp (repair)	MEDIUM	$ 1,200
FF14	Yarrabin St/Glen St	Kerb access ramp (repair)	MEDIUM	$ 1,200
FF15	Lockwood Ave/Glen St	Kerb access ramp (repair)	MEDIUM	$ 1,200
FF16	Lockwood Ave/Glen St	Kerb access ramp (new)	MEDIUM	$ 1,000
FF17	Blackbutts Rd/Athol St	Kerb access ramp (repair)	MEDIUM	$ 1,200
FF18	Blackbutts Rd/Athol St	Kerb access ramp (repair)	MEDIUM	$ 1,200
FF19	Blackbutts Rd/Pringle Ave	Kerb access ramp (repair)	MEDIUM	$ 1,200
FF20	Pringle Ave	Kerb access ramp (repair)	MEDIUM	$ 1,200
FF21	Lockwood Ave/Blackbutts Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
FF22	Pringle Ave	Repair footpath	MEDIUM	$ 230
FF23	Pringle Ave	Repair footpath	MEDIUM	$ 230
FF24	Pringle Ave	Repair footpath	MEDIUM	$ 230
FF25	Pringle Ave	Repair footpath	MEDIUM	$ 230
FF26	Pringle Ave	Repair footpath	MEDIUM	$ 230
FF27	Pringle Ave	Repair footpath	MEDIUM	$ 230
FF28	Blackbutts Rd	Repair footpath	MEDIUM	$ 230
FF29	Blackbutts Rd	Repair footpath	MEDIUM	$ 230
FF30	Blackbutts Rd	Repair footpath	MEDIUM	$ 230
FF31	Blackbutts Rd	Repair footpath	MEDIUM	$ 230
FF32	Lockwood Ave/Blackbutts Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
FF33	Lockwood Ave	Footpath clearing (vegetation)	MEDIUM	$ 20
FF34	Lockwood Ave	Remove obstruction	MEDIUM	$ 230
FF35	Lockwood Ave	Repair footpath	MEDIUM	$ 230
FF36	Glen St	Footpath clearing (vegetation)	MEDIUM	$ 20
FF37	Glen St	Repair footpath	MEDIUM	$ 230
FF38	Glen St	Footpath clearing (vegetation)	MEDIUM	$ 20
FF39	Glen St	Repair footpath	MEDIUM	$ 230
FF40	Glen St	Footpath clearing (vegetation)	MEDIUM	$ 20
FF41	Glen St	Footpath clearing (vegetation)	MEDIUM	$ 20
FF42	Glen St	Repair footpath	MEDIUM	$ 230
FF43	Glen St	Repair footpath	MEDIUM	$ 230
FF44	Glen St	Repair footpath	MEDIUM	$ 230
FF45	Glen St	Footpath clearing (vegetation)	MEDIUM	$ 20
FF46	Blackbutts Rd	Repair footpath	MEDIUM	$ 230
FF47	Blackbutts Rd	Footpath grinding	MEDIUM	$ 70
FF48	Blackbutts Rd	Footpath grinding	MEDIUM	$ 70
FF49	Blackbutts Rd	Footpath grinding	MEDIUM	$ 70
FF50	Blackbutts Rd	Repair footpath	MEDIUM	$ 230
FF51	Blackbutts Rd	Repair footpath	MEDIUM	$ 230
FF52	Blackbutts Rd	Footpath clearing (vegetation)	MEDIUM	$ 20
FF53	Blackbutts Rd	Repair footpath	MEDIUM	$ 230
FF54	Blackbutts Rd	Repair footpath	MEDIUM	$ 230
FF55	Blackbutts Rd	Footpath grinding	MEDIUM	$ 70
FF56	Blackbutts Rd	Repair footpath	MEDIUM	$ 230

Estimated Costs	
LOW	$ -
MEDIUM	$ 28,959
HIGH	$ -

Freshwater Footpath Maintenance Schedule

ID	Location	Decription	Priority	Cost
HA01	Rowe St/Waine St	Kerb access ramp (repair)	MEDIUM	$ 1,200

HA02	Pittwater Rd/Girard St	Kerb access ramp (repair)	MEDIUM	$	1,200		
HA03	Pittwater Rd	Kerb access ramp (repair)	MEDIUM	$	1,200		
HA04	Pittwater Rd/Lakeside Cres	Kerb access ramp (repair)	MEDIUM	$	1,200		
HA05	Oliver St/Lawrence St	Kerb access ramp (new)	HIGH	$	1,000		
HA06	Oliver St/Lawrence St	Kerb access ramp (repair)	HIGH	$	1,200		
HA07	Oliver St/Wilson St	Kerb access ramp (repair)	HIGH	$	1,200		
HA08	Harbord Rd/Wyadra Ave	Kerb access ramp (repair)	HIGH	$	1,200		
HA09	Harbord Rd/Wyadra Ave	Kerb access ramp (repair)	HIGH	$	1,200		
HA10	Harbord Rd	Kerb access ramp (new)	HIGH	$	1,000		
HA11	Harbord Rd/Wyadra Ave	Kerb access ramp (new)	HIGH	$	1,000		
HA12	Harbord Rd/Wyadra Ave	Kerb access ramp (new)	HIGH	$	1,000		
HA13	Harbord Rd/Wyadra Ave	Kerb access ramp (repair)	HIGH	$	1,200		
HA14	Harbord Rd/Wyadra Ave	Kerb access ramp (repair)	HIGH	$	1,200		
HA15	Harbord Rd/Wyadra Ave	Kerb access ramp (new)	HIGH	$	1,000		
HA16	Harbord Rd/Wyadra Ave	Kerb access ramp (repair)	HIGH	$	1,200		
HA21	Waine St	Repair footpath	MEDIUM	$	230		
HA22	Girard Rd	Footpath clearing (vegetation)	MEDIUM	$	20		
HA23	Girard Rd	Repair footpath	MEDIUM	$	230		
HA24	Pittwater Rd	Repair footpath	MEDIUM	$	230		
HA25	Oliver St	Footpath grinding	HIGH	$	70		
HA26	Oliver St	Footpath grinding	HIGH	$	70		
HA27	Oliver St	Footpath clearing (vegetation)	HIGH	$	20		
HA28	Oliver St	Footpath clearing (vegetation)	HIGH	$	20		
HA29	Oliver St	Footpath grinding	HIGH	$	70		
HA30	Oliver St	Repair footpath	HIGH	$	230		
HA31	Albert St	installation of wheel stops	HIGH				
HA32	Wyadra Ave	Footpath grinding	HIGH	$	70		
HA33	Wyadra Ave	Repair footpath	HIGH	$	230		
HA34	Harbord Rd	installation of wheel stops	HIGH				
HA35	Harbord Rd	Relocation of services	HIGH				
HA36	Harbord Rd	Footpath grinding	HIGH	$	70	**Estimated Costs**	
HA37	Harbord Rd	Footpath grinding	HIGH	$	70	LOW	$ -
HA38	Harbord Rd	Repair footpath	HIGH	$	230	MEDIUM	$ 5,511
HA39	Harbord Rd/Wyuna Ave	Repair footpath	HIGH	$	230	HIGH	$ 14,782

Killarney Heights Footpath Maintenance Schedule

ID	Location	Decription	Priority	Cost			
KH01	Tralee Ave/Starkey St	Kerb access ramp (repair)	MEDIUM	$	1,200		
KH02	Tralee Ave/Starkey St	Kerb access ramp (new)	MEDIUM	$	1,000		
KH03	Tramore Pl	Kerb access ramp (repair)	HIGH	$	1,200		
KH04	Tramore Pl	Kerb access ramp (new)	HIGH	$	1,000		
KH05	Starkey St/Coleraine Ave	Kerb access ramp (new)	MEDIUM	$	1,000		
KH06	Coleraine Ave	Kerb access ramp (repair)	MEDIUM	$	1,200		
KH07	Melwood Ave	Kerb access ramp (new)	MEDIUM	$	1,000		
KH08	Melwood Ave	Kerb access ramp (new)	MEDIUM	$	1,000		
KH09	Melwood Ave	Kerb access ramp (repair)	MEDIUM	$	1,200		
KH10	Melwood Ave	Kerb access ramp (new)	MEDIUM	$	1,000		
KH11	Tralee Ave	Kerb access ramp (repair)	MEDIUM	$	1,200		
KH12	Tralee Ave	Kerb access ramp (new)	MEDIUM	$	1,000		
KH17	Tralee Ave	Repair footpath	MEDIUM	$	230		
KH18	Tralee Ave	Repair footpath	HIGH	$	230		
KH19	Tralee Ave	Repair footpath	HIGH	$	230		
KH20	Tralee Ave	Repair footpath	HIGH	$	230		
KH21	Tralee Ave	Install wheel stops	HIGH	$	200		
KH22	Tralee Ave/Wilde Ave	Repair footpath	HIGH	$	230		
KH23	Tralee Ave	Repair footpath	HIGH	$	230		
KH24	Tramore Pl	Repair footpath	HIGH	$	230		
KH25	Tramore Pl	Repair footpath	HIGH	$	230		
KH26	Starkey St	Repair footpath	HIGH	$	230		
KH27	Melwood Ave	Repair footpath	MEDIUM	$	230		
KH28	Melwood Ave	Repair footpath	MEDIUM	$	230		
KH29	Melwood Ave	Repair footpath	MEDIUM	$	230		
KH30	Melwood Ave	Repair footpath	MEDIUM	$	230		
KH31	Melwood Ave	Repair footpath	MEDIUM	$	230		
KH32	Melwood Ave	Repair footpath	MEDIUM	$	230		
KH33	Melwood Ave	Footpath clearing (vegetation)	MEDIUM	$	20		
KH34	Starkey St/Melwood Ave	Footpath grinding	HIGH	$	230		
KH35	Starkey St	Repair footpath	HIGH	$	230	**Estimated Costs**	
KH36	Starkey St	Footpath grinding	HIGH	$	230	LOW	$ -
KH37	Starkey St/Coleraine Ave	Footpath clearing (vegetation)	HIGH	$	20	MEDIUM	$ 12,433
KH38	Tralee Ave	Install wheel stops	HIGH	$	200	HIGH	$ 5,154

Manly Vale Footpath Maintenance Schedule

ID	Location	Decription	Priority	Cost

MV01	Roseberry St/Koorala St	Kerb access ramp (new)	HIGH	$	1,000		
MV02	Condamine St/Koorala St	Kerb access ramp (repair)	HIGH	$	1,200		
MV03	Condamine St/Koorala St	Kerb access ramp (repair)	HIGH	$	1,200		
MV04	Condamine St/Kenneth Rd	Kerb access ramp (repair)	HIGH	$	1,200		
MV05	Kenneth Rd	Kerb access ramp (repair)	HIGH	$	1,200		
MV06	Roseberry St	Kerb access ramp (repair)	HIGH	$	1,200		
MV07	Roseberry St	Kerb access ramp (repair)	HIGH	$	1,200		
MV08	Kenneth Rd	Kerb access ramp (repair)	HIGH	$	1,200		
MV09	Condamine St/Hayes St	Kerb access ramp (repair)	HIGH	$	1,200		
MV10	Condamine St/Hayes St	Kerb access ramp (repair)	HIGH	$	1,200		
MV11	Condamine St	Kerb access ramp (new)	HIGH	$	1,000		
MV13	Koorala St	Footpath grinding	HIGH	$	70		
MV14	Condamine St	Footpath grinding	HIGH	$	70		
MV15	Kenneth Rd	Footpath grinding	HIGH	$	70		
MV16	Roseberry St	Footpath grinding	HIGH	$	70		
MV17	Condamine St	Footpath grinding	HIGH	$	70	**Estimated Costs**	
MV18	Condamine St	Repair footpath	HIGH	$	230	LOW	$ -
MV19	Condamine St	Footpath grinding	HIGH	$	70	MEDIUM	$ -
MV20	Condamine St	Footpath grinding	HIGH	$	70	HIGH	$ 13,520

Narrabeen Physical Work Schedule

ID	Location	Decription	Priority	Cost			
NA01	Ocean St/Albert St	Kerb access ramp (repair)	HIGH	$	1,200		
NA02	Ocean St/Albert St	Kerb access ramp (new)	HIGH	$	1,000		
NA03	Ocean St/Albert St	Kerb access ramp (new)	HIGH	$	1,000		
NA04	Ocean St/Albert St	Kerb access ramp (new)	HIGH	$	1,000		
NA05	Ocean St/Waterloo St	Kerb access ramp (repair) and repair refuge island	HIGH	$	19,200		
NA06	Ocean St	Kerb access ramp (repair)	HIGH	$	1,200		
NA07	Ocean St	Kerb access ramp (repair) and repair refuge island	HIGH	$	19,200		
NA08	Lagoon St/Wellington St	Kerb access ramp (repair)	HIGH	$	1,200		
NA09	Lagoon St/Wellington St	Kerb access ramp (repair) and repair refuge island	HIGH	$	19,200		
NA10	Lagoon St/Wellington St	Kerb access ramp (repair)	HIGH	$	1,200		
NA11	Lagoon St/Wellington St	Kerb access ramp (repair) and repair refuge island	HIGH	$	19,200		
NA12	Lagoon St/Wellington St	Kerb access ramp (repair)	HIGH	$	1,200		
NA13	Lagoon St	Kerb access ramp (repair)	HIGH	$	1,200		
NA14	Lagoon St	Kerb access ramp (repair) and repair refuge island	HIGH	$	19,200		
NA15	Lagoon St	Kerb access ramp (repair)	HIGH	$	1,200		
NA16	Waterloo St	Kerb access ramp (repair) and repair refuge island	HIGH	$	19,200		
NA17	Waterloo St	Kerb access ramp (new)	HIGH	$	1,000		
NA27	Albert St	Repair footpath	HIGH	$	230		
NA28	Albert St	Footpath grinding	HIGH	$	70		
NA29	Albert St	Repair footpath	HIGH	$	230		
NA30	Ocean St	Repair footpath	HIGH	$	230		
NA31	Ocean St	footpath clearing (vegetation)	HIGH	$	20		
NA32	Wellington St	Removal of obstruction	HIGH	$	230		
NA33	Wellington St	footpath clearing (vegetation)	HIGH	$	20		
NA34	Wellington St	Repair footpath	HIGH	$	230		
NA35	Wellington St	Repair footpath	HIGH	$	230		
NA36	Lagoon St/Wellington St	Removal of obstruction	HIGH	$	230		
NA37	Lagoon St	Repair footpath	HIGH	$	230		
NA38	Lagoon St	footpath clearing (vegetation)	HIGH	$	20		
NA39	Lagoon St	Footpath grinding	HIGH	$	70	**Estimated Costs**	
NA40	Lagoon St	Repair footpath	HIGH	$	230	LOW	$ -
NA41	Lagoon St	Removal of obstruction	HIGH	$	230	MEDIUM	$ -
NA42	Waterloo St	footpath clearing (vegetation)	HIGH	$	20	HIGH	$ 130,124

Narraweena Footpath Footpath Maintenance Schedule

ID	Location	Decription	Priority	Cost	
NW01	Ronald Ave/Waratah Pde	Kerb access ramp (new)	HIGH	$	1,000
NW02	Waratah Pde	Kerb access ramp (repair)	HIGH	$	1,200
NW03	Mcintosh Rd/Waratah Pde	Kerb access ramp (repair)	HIGH	$	1,200
NW04	Mcintosh Rd/Waratah Pde	Kerb access ramp (repair)	HIGH	$	1,200
NW05	Mcintosh Rd/Waratah Pde	Kerb access ramp (repair)	HIGH	$	1,200
NW06	Mcintosh Rd/Waratah Pde	Kerb access ramp (repair)	HIGH	$	1,200
NW07	Mcintosh Rd/Waratah Pde	Kerb access ramp (repair)	HIGH	$	1,200
NW08	Mcintosh Rd/Waratah Pde	Kerb access ramp (repair)	HIGH	$	1,200
NW09	Waratah Pde	Kerb access ramp (repair)	HIGH	$	1,200
NW10	Waratah Pde	Kerb access ramp (repair)	HIGH	$	1,200
NW11	Waratah Pde/Amaral St	Kerb access ramp (repair)	HIGH	$	1,200
NW12	Alfred St/Oceana St	Kerb access ramp (repair)	HIGH	$	1,200
NW13	Alfred St/Oceana St	Kerb access ramp (repair)	HIGH	$	1,200
NW14	Alfred St/Oceana St	Kerb access ramp (repair) install repair refuge island	HIGH	$	19,200
NW15	Mcintosh Rd/Alfred St	Kerb access ramp (new)	HIGH	$	1,000
NW16	Alfred St	Footpath clearing (vegetation)	HIGH	$	20

NW17	Ronald Ave	Repair footpath	HIGH	$ 230			
NW18	Ronald Ave	Repair footpath	HIGH	$ 230			
NW19	Ronald Ave	Repair footpath	HIGH	$ 230			
NW20	Ronald Ave	Repair footpath	HIGH	$ 230			
NW21	Ronald Ave	Repair footpath	HIGH	$ 230			
NW22	Ronald Ave/Waratah Pde	Repair footpath	HIGH	$ 230			
NW23	Mcintosh Rd/Waratah Pde	Footpath grinding	HIGH	$ 70			
NW24	Waratah Pde	Footpath clearing (vegetation)	HIGH	$ 20			
NW25	Waratah Pde	Repair footpath	HIGH	$ 230			
NW26	Alfred St	Install wheel stops	HIGH	$ 2,000			
NW27	Alfred St	Repair footpath	HIGH	$ 230			
NW28	Alfred St	Footpath clearing (vegetation)	HIGH	$ 20			
NW29	Alfred St	Footpath grinding	HIGH	$ 70			
NW30	Alfred St	Footpath grinding	HIGH	$ 70			
NW31	Alfred St	Repair footpath	HIGH	$ 230	**Estimated Costs**		
NW32	Alfred St	Repair footpath	HIGH	$ 230	LOW	$	-
NW33	Alfred St	Repair footpath	HIGH	$ 230	MEDIUM	$	-
NW34	Alfred St	Install wheel stops	HIGH	$ 2,000	HIGH	$	42,404

North Balgowlah Physical Work Schedule

ID	Location	Decription	Priority	Cost			
NB01	Woodbine St/Bangaroo St	Widening of Refuge Island	LOW	$ 18,000			
NB02	Woodbine St/Bangaroo St	Widening of Refuge Island	LOW	$ 18,000			
NB03	Illalong Ave	Relocation of power pole	LOW	$ 100,000			
NB04	Illalong Ave	Footpath grinding	LOW	$ 70			
NB05	Woodbine St	Footpath grinding	LOW	$ 70			
NB06	Woodbine St	Footpath clearing (vegetation)	LOW	$ 20	**Estimated Costs**		
NB07	Illalong Ave	Footpath grinding	LOW	$ 70	LOW	$	137,382
NB08	Illalong Ave	Replace footpath (1.2m long)	LOW	$ 230	MEDIUM	$	-
NB09	Woodbine St/Illalong Ave	Replace footpath (4.8m long)	LOW	$ 922	HIGH	$	-

Terrey Hills Footpath Maintenance Schedule

ID	Location	Decription	Priority	Cost			
TH01	Booralie Rd/Bindook Cres	Kerb access ramp (repair)	MEDIUM	$ 1,200			
TH02	Booralie Rd/Myoora Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200			
TH03	Booralie Rd/Myoora Rd	Kerb access ramp (new)	MEDIUM	$ 1,000			
TH04	Booralie Rd/Dandenong Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200			
TH05	Booralie Rd/Dandenong Rd	Kerb access ramp (repair)	MEDIUM	$ 1,200			
TH07	Yulong Ave	Footpath grinding	LOW	$ 70			
TH08	Yulong Ave	Footpath clearing (vegetation)	LOW	$ 20			
TH09	Yulong Ave	Footpath clearing (vegetation)	LOW	$ 20			
TH10	Yulong Ave	Footpath clearing (vegetation)	LOW	$ 20			
TH11	Yulong Ave	Repair footpath	LOW	$ 230			
TH12	Yulong Ave	Repair footpath	LOW	$ 230			
TH13	Yulong Ave	Footpath clearing (vegetation)	LOW	$ 20			
TH14	Yulong Ave	Footpath clearing (vegetation)	LOW	$ 20			
TH15	Yulong Ave	Install wheel stops	LOW	$ 200			
TH16	Booralie Rd	Install wheel stops	MEDIUM	$ 200			
TH17	Booralie Rd	Repair footpath	MEDIUM	$ 230			
TH18	Booralie Rd/Bindook Cres	Footpath grinding	MEDIUM	$ 70			
TH19	Booralie Rd/Bindook Cres	Footpath grinding	MEDIUM	$ 70			
TH20	Booralie Rd/Bindook Cres	Repair footpath	MEDIUM	$ 230			
TH21	Booralie Rd/Bindook Cres	Footpath grinding	MEDIUM	$ 70			
TH22	Booralie Rd	Footpath grinding	MEDIUM	$ 70			
TH23	Booralie Rd	Footpath grinding	MEDIUM	$ 70			
TH24	Booralie Rd	Footpath grinding	MEDIUM	$ 70			
TH25	Booralie Rd	Footpath clearing (vegetation)	MEDIUM	$ 20			
TH26	Booralie Rd/Dandenong Rd	Repair footpath	MEDIUM	$ 230			
TH27	Booralie Rd/Dandenong Rd	Footpath grinding	MEDIUM	$ 70			
TH28	Booralie Rd/Dandenong Rd	Repair footpath	MEDIUM	$ 230			
TH29	Booralie Rd/Dandenong Rd	Footpath clearing (vegetation)	MEDIUM	$ 20			
TH30	Booralie Rd	Footpath clearing (vegetation)	MEDIUM	$ 20			
TH31	Booralie Rd	Footpath clearing (vegetation)	MEDIUM	$ 20			
TH32	Booralie Rd	Repair footpath	MEDIUM	$ 230			
TH33	Booralie Rd	Repair footpath	MEDIUM	$ 230			
TH34	Booralie Rd/Yulong Ave	Repair footpath	MEDIUM	$ 230			
TH35	Booralie Rd/Yulong Ave	Footpath grinding	MEDIUM	$ 70			
TH36	Yulong Ave	Repair footpath	LOW	$ 230			
TH37	Yulong Ave	Footpath clearing (vegetation)	LOW	$ 20			
TH38	Yulong Ave	Footpath grinding	LOW	$ 70			
TH39	Yulong Ave	Footpath grinding	LOW	$ 70			
TH40	Yulong Ave	Footpath grinding	LOW	$ 70			
TH41	Yulong Ave	Footpath clearing (vegetation)	LOW	$ 20	**Estimated Costs**		
TH42	Yulong Ave	Footpath clearing (vegetation)	LOW	$ 20	LOW	$	1,582

TH43	Yulong Ave	Footpath clearing (vegetation)	LOW	$	20	MEDIUM	$ 8,253
TH44	Yulong Ave	Repair footpath	LOW	$	230	HIGH	$ -

Appendix G-3
New Pedestrian Crossing Facilities

Suburb	Road Name	Route Priority	Recommended Actions	Implementation Priority	Cost
Allambie Grove	Frenchs Forest East	P	Install a refuge island at Skyline shops	MEDIUM	$ 18,000
	Frenchs Forest East	P	Install a refuge island at Capital Business Park near the bus stops	MEDIUM	$ 18,000
	Allambie Road	P	Install traffic lights with all pedestrian movements at Allambie Road/Rodborough Road	HIGH	$ 100,000
	Pittwater Road	P	Install pedestrian phase for all legs at Warringah Road/Allambie Road intersection	HIGH	$ 50,000
Allambie Heights	Orara Road	C	Install refuge island near Kentwell Road intersection	MEDIUM	$ 18,000
	Allambie Road	P	Install two refuge islands between Flers Street and Mortain Avenue	MEDIUM	$ 36,000
Belrose Austlink	Narabang Way	S	Install pedestrian refuge islands on all sides of roundabout at Garigal Road	MEDIUM	$ 72,000
	Narabang Way	S	Install a crossing facility between Minna Cl and Narabang Cl	MEDIUM	$ 4,000
Brookvale	Pittwater Road	P	Install traffic lights with all pedestrian movements at Pittwater Road/Orchard Road	HIGH	$ 100,000
	Pine Avenue	P	Install a refuge island near the intersection of Pine Avenue and Federal Parade	MEDIUM	$ 18,000
Collaroy	Pittwater Road	P	Install a signalised crossing facility at intersection with Anzac Avenue	HIGH	$ 100,000
	Pittwater Road	P	Install a signalised crossing facility between Jenkins Street and Eastbank Avenue	HIGH	$ 100,000
Cromer	South Creek Road	P	Install refuge island between Middleton Road and Grover Avenue	MEDIUM	$ 18,000
Dee Why	Francis Street	C	Install pedestrian refuge island near Redman Road	MEDIUM	$ 18,000
	Fisher Road	P	Install a refuge island between Mcintosh Road and Kingsway	HIGH	$ 18,000
	Pittwater Road	C	Install traffic lights with all pedestrian movements at Pittwater Road/Lismore Avenue	LOW	$ 100,000
	Howard Avenue	P	Investigate pedestrian safety at the roundabouts and consider whether the design can be improved to increase safety, or whether a signalised intersection is more appropriate.	HIGH	$ -
	Oaks Avenue	P	Investigate pedestrian safety at the roundabouts and consider whether the design can be improved to increase safety, or whether a signalised intersection is more appropriate.	MEDIUM	$ -
Forestville	Melwood Avenue	S	Install refuge island near intersection with Bushland Avenue	MEDIUM	$ 18,000
	Melwood Avenue	S	Install refuge island near intersection with Bernie Avenue	MEDIUM	$ 18,000
Forestway	Grace Avenue	P	Install pedestrian crossings at the intersections with Sorlie Road	MEDIUM	$ 2,000
Frenchs Forest	Lockwood Avenue	S	Upgrade existing pedestrian crossing to Wombat Crossing	MEDIUM	$ 38,200
	Blackbutts Road	S	Widen existing refuge island	MEDIUM	$ 18,000
Freshwater	Oliver Street	S	Install a crossing facility on near Robert Street	MEDIUM	$ 2,000
Killarney Heights	Tramore Place	P	Install kerb blister at existing childrens' crossing at Tramore Place.	MEDIUM	$ 10,000
Narrabeen	Pittwater Road	P	Install a signalised crossing facility at the intersection Pittwater Road and Albert Street	HIGH	$ 100,000
Narraweena	Alfred Street	S	Install pedestrian crossing at the entrance to the school	MEDIUM	$ 2,000
Terrey Hills	Booralie Road	P	Upgrade existing pedestrian crossing near Myoora Road to Wombat Crossing	HIGH	$ 38,200
	Yulong Avenue	P	Install pedestrian refuge island near Booralie Road	MEDIUM	$ 18,000
	Myoora Road	C	Install a crossing facility near the entrance of the Terrey Hills Primary School	MEDIUM	$ 18,000
				TOTAL	**$ 1,070,400**

Appendix H
Walking Encouragement Programs

‘Walk to Work’ Day

Walk to Work Day is an event to promote regular walking and physical activity. It promotes leaving the car at home and the use of public transport, walking wherever possible. It is an annual and national event.

The aims of Walk to Work Day are:

- To promote regular walking as a healthy activity (better physical, mental and social health)
- To reduce reliance on the private motor vehicle (reduce car-dependency)
- To promote and improve the use of public transport (less traffic)
- To improve air quality by reducing unnecessary vehicle emissions (reduce global warming).

In addition to encouraging Walk to Work Day, Council can provide support by improving pedestrian access to public transport and promoting pedestrian routes. Car-free days might be considered for certain towns centres within the LGA (eg. Beaches) to provide encourage physical activities. Depending on the scale and location of the events, they may require further planning and advertising with special arrangements that links public transport to the area.

Councils can help promote the event locally through local newspapers, websites (such as www.walk.com.au) radio and other networks. Councils can also consider rewarding participants with a healthy breakfast and displaying WTWD posters wherever appropriate.

Walk Safely to School Day

Walk Safely to School Day (WSTSD) is an annual and national event that encourages all primary school children to walk and commute safely to school. It is a Community Event seeking to promote road safety, health, public transport and the environment.

The objectives of WSTSD are:

- To encourage parents and carers to walk to school with primary school age children and reinforce safe pedestrian behaviour.
- To promote the health benefits of walking and help create regular walking habits at an early age.
- To ensure that children up to 10 years old hold an adult's hand when crossing the road.
- To help children develop the vital road-crossing skills they will need as they become mature pedestrians.
- To reduce the car dependency habits that are being created at an early age and which will be difficult to change as children become adults.
- To promote the use of public transport.
- To reduce the level of air pollution created by motor vehicles.
- To reduce the level of traffic congestion.

A kit containing WSTSD stickers and posters was posted to every primary school in Australia to assist with the promotion of the event. It has already occurred in 2010 (May). As part of the promotion of WSTSD, schools can win sporting equipment and individual students can win prizes.

Safer Routes to School/ Safety around Schools program

Safer Routes to School (SRTS) is a program to improve the health and well-being of children by enabling and encouraging them to walk and cycle to school. In Australia, the SRTS programs are often delivered from a road safety perspective and thereby tend to be delivered by a state road authority, in conjunction with local government, the school community and the police.

With the support of parents, schools, community members, local, state and federal government, sustainable programs can be implemented. The program evaluates the built environment around schools, conducts activities and funds projects that improve safety, reduce traffic and air pollution in the surrounding area of the

school. As a result, this program makes walking and cycling to school a safer and more appealing transportation option.

The key objectives of SRTS are:

- To improve the level of safety for children travelling to school
- To encourage active travel to school using identified safe routes

Achieving these objectives requires investigation into road safety issues that exist around each individual school. A combination of engineering treatments, education, enforcement and encouragement strategies may then be developed, implemented, monitored and evaluated for that school. According to individual state objectives, the balance of these strategies will vary.

SRTS programs generally involve four main stages:

- *Planning and establishing the program:* Selecting schools for involvement and establishing links with the Council and schools concerned.
- *Investigation of local issues and needs:* Establish the routes used by children to access the school. This is often done through a travel survey and conducting observation surveys to examine behaviour patterns.
- *Developing and implementing an Action Plan:* Action Plans may comprise the 4 'E's: Engineering, Education, Enforcement and Encouragement dimensions.
- *Maintaining, monitoring and evaluating the program:* This final stage is essential to the sustainability of SRTS and the introduction of other TravelSmart programs into the school community.

Developing an action plan is a central part of SRTS programs. Differences exist between states in terms of the balance of elements covered by the Action Plan, that is, whether all the 4 E's are included. For example, Western Australia, South Australia and Victoria include engineering treatments as an important feature of the action plan.

The NSW Roads and Traffic Authority used to support Councils in undertaking ‘Safer Routes to School’ programs, but now supports a slightly different version, called ‘Safety around Schools’ program. The main difference is that where it used to look at each child’s whole route to school, the Safety around Schools program just looks at the immediate environment around the school.

It is recommended that Warringah Council seek the support of the RTA to undertake a ‘Safety around Schools’ program, but include some of the SRTS methodology – that is, examine a few of the main routes to a school (identified in partnership with the school community), rather than just the immediate environment around the school.

Useful information can be found on the following websites:

- http://www.travelsmart.gov.au/training/packaging_schools_routes.html
- http://www.transport.sa.gov.au/pdfs/education/srts_a4.pdf
- http://www.saferoutesinfo.org/

The RTA can be contacted for information about the ‘Safety around Schools’ program.

SRTS can be considered to be the initial step to help create safer environments for walking and cycling. This can ensure that safe conditions exist prior to the implementation of active transport experiences for students, teachers and parents. Installation of infrastructure, correct usage and road safety education must be completed before considering programs such as *Walking School Bus* (discussed next) or *Ride/Walk to School days*.

Green Travel Plans

Preparation and distribution of a Green Travel Plan is one of the easiest ways a small or large organisation can start to encourage their employees, visitors, clients, customers, or residents to walk, cycle, or use public transport for some or even one of their trips to/from their site.

Green Travel Plans are also known as Transport Access Guides, Workplace Travel Plans, School Travel Plans, and generally include:

- Detailed information on how to reach a venue using sustainable forms of transport - walking, cycling and public transport.
- a map of the location making it easy to see the relationship of the site to train stations, bus stops and taxi ranks and walking and cycling routes.
- Can take many forms, from a map printed on the back of business cards or included in promotional brochures or email signatures, to more comprehensive information such as a brochure as part of an induction kit to new employees or as part of a traveller information kit for employees relocating to other office premises.

There are many resources online that can assist in the preparation of a Green Travel Plan, such as the following:

- http://www.travelsmart.gov.au/employers/toolkit.html
- http://www.pcal.nsw.gov.au/__data/assets/pdf_file/0015/100527/Brochure_FINAL_23.08.10.pdf and http://www.pcal.nsw.gov.au/workplace_travel_plan
- http://www.rta.nsw.gov.au/usingroads/traveldemandmanagement/transportaccessguides/index.html
- http://www.rta.nsw.gov.au/usingroads/traveldemandmanagement/transportaccessguides/transportaccessguideworkshop.html

Walking School Buses and Bicycle Trains

The Walking School Bus or Bicycle Train are programs to promote safe walking and cycling respectively, among primary school children to and from school. They may operate daily, weekly or monthly, and can be loosely structured or highly organised.

Walking school buses and bicycle trains can be as simple as neighbourhood families deciding to walk or bicycle together. More formal, organised walking school buses and bicycle trains have a coordinator who recruits volunteers and participants, creates a schedule and designs a walking route. It requires the assistance and strong commitment from staff, parents and the school's P&C committee ('Parents & Citizens' or P&F – 'Parents & Friends') to staff the 'buses'. While requiring more effort, more structured walking school buses and bicycle trains offer the opportunity to involve more children or to operate more regularly (daily or a few times weekly).

A project that was launched by the City of Ryde included assistance from the Northern Sydney Central Coast Health Service. This project provided school children with reflective vests to increase their safety. Similar initiatives can be provided to primary school children within the Warringah LGA.

One variant of the walking school bus program trialled successfully in Adelaide was to map students' residential addresses in GIS and provide information to parents whose children live within walkable distance of the school that this is the case, plus advise (with parents' permission) the addresses of nearby children who could walk to school together.

Information and resources on how to establish and maintain a 'walking school bus' program can be found on the TravelSmart Australia website at: http://www.travelsmart.gov.au/schools/schools2.html .

More information on walking school buses and bicycle trains can be found on the following website:

http://www.saferoutesinfo.org/guide/encouragement/walking_school_bus_or_bicycle_train.cfm

TravelSmart

TravelSmart are National, State and Territory run programs that seek voluntary changes in travel choices. TravelSmart programs aim to encourage people to avoid the car and use public transport, cycle, walk or arrange car pooling, and thereby reduce the individual's impact on the environment, promote personal health, and reduce the demand on the urban road system.

There are a number of resources available to assist Warringah Council from the TravelSmart website (www.travelsmart.gov.au), including ways of training TravelSmart Officers to assist with the implementation of initiatives to manage travel demand at a local level, and to assist with the marketing of the TravelSmart program.