



CLIENTS | PEOPLE | PERFORMANCE

Port Stephens Council
Raymond Terrace Transport and Parking Review
Final Report
September 2011



This Report for the Raymond Terrace Transport and Parking Study ("Report"):

- 1. has been prepared by GHD Pty Ltd for Port Stephens Council;*
- 2. may only be used and relied on by Port Stephens Council;*
- 3. must not be copied to, used by, or relied on by any person other than Port Stephens Council without the prior written consent of GHD;*
- 4. may only be used for the purpose of reviewing transport and parking to guide the development of a Growth Centre Strategy for Raymond Terrace (and must not be used for any other purpose).*

GHD and its servants, employees and officers otherwise expressly disclaim responsibility to any person other than Port Stephens Council arising from or in connection with this Report.

To the maximum extent permitted by law, all implied warranties and conditions in relation to the services provided by GHD and the Report are excluded unless they are expressly stated to

GHD expressly disclaims responsibility for any error in, or omission from, this Report arising from or in connection with any of the Assumptions being incorrect.

Subject to the paragraphs in this section of the Report, the opinions, conclusions and any recommendations in this Report are based on conditions encountered and information reviewed at the time of preparation and may be relied on until six months, after which time, GHD expressly disclaims responsibility for any error in, or omission from, this Report arising from or in connection with those opinions, conclusions and any recommendations.

GHD has prepared this Report on the basis of information and copies of reports provided by Port Stephens Council and from information publicly available on websites maintained by the NSW Government, which GHD has not independently verified or checked ("Unverified Information") beyond the agreed scope of work.

GHD expressly disclaims responsibility in connection with the Unverified Information, including (but not limited to) errors in, or omissions from, the Report, which were caused or contributed to by errors in, or omissions from, the Unverified Information.



Contents

1.	Introduction	1
1.1	Overview	1
1.2	Study Approach	1
1.3	Report Structure	1
2.	Planning Context	3
2.1	Location	3
2.2	Existing Land Uses	3
2.3	Population and Employment	4
2.4	Economy	5
2.5	Review of Planning Policy and Strategy	6
3.	Existing Transport Situation	10
3.1	Regional Linkages	10
3.2	Travel Characteristics	12
3.3	Car Ownership	12
3.4	Town Centre Street Network	13
3.5	Parking	23
3.6	Public Transport	31
3.7	Pedestrian and Cycle Network	34
3.8	Road Safety	37
4.	Indicators to Achieve Sustainable Accessibility	39
4.1	Overview	39
4.2	Mode Share	39
4.3	Focus on Public Transport Use	40
4.4	Public Transport Quality of Service	40
4.5	Network Planning	41
4.6	Integrating Public Transport and Land Use	41
4.7	Integrating Private Transport and Land Use	42
4.8	Road Network Performance	42
4.9	Summary of Indicators	43
5.	Road Network Strategy	45
5.1	Local Road Network Issues	45



5.2	Road Network Task	45
5.3	Road Network Principles	46
5.4	Strategy R1 – Revised Road Hierarchy	47
5.5	Strategy R2 – Street Network Connectivity	51
5.6	Strategy R3 – Adelaide Street Improvements	54
5.7	Strategy R4 – William Street Improvements	57
5.8	Strategy R5 – Port Stephens Street Improvements	61
6.	Parking Strategy	62
6.1	Local Parking Issues	62
6.2	Parking Task	62
6.3	Parking Principles	64
6.4	Strategy P1 – Develop a Parking Management Plan	66
6.5	Strategy P2 – Consider Maximum Car Parking Requirements	67
6.6	Strategy P3 – Alternative Uses for Section 94 Contributions	68
6.7	Strategy P4 – Shared Parking	68
6.8	Strategy P5 – Sports Field Development Car Parking Facility	69
6.9	Strategy P6 – More Intensive Parking Management	69
6.10	Strategy P7 – On-Street Accessible Parking	70
6.11	Strategy P8 – Improvements to Existing Parking Design	70
6.12	Strategy P9 – Consider Options for Satellite Car Parking Areas	71
7.	Public Transport Strategy	73
7.1	Local Public Transport Issues	73
7.2	Public Transport Task	73
7.3	Public Transport Principles	74
7.4	Strategy PT1 – Public Transport Service Planning	76
7.5	Strategy PT2 – Relocate Sturgeon Street Interchange	77
7.6	Strategy PT3 – Improve Public Transport Interchange Design	78
7.7	Strategy PT4 – Fare-Free Zone for Public Transport	79
7.8	Strategy PT5 – Bus Layover Facility	81
7.9	Strategy PT6 – Public Transport Accessibility	81
8.	Walking and Cycling Strategy	82
8.1	Pedestrian and Cycling Issues	82
8.2	Walking and Cycling Task	84
8.3	Walking and Cycling Principles	84
8.4	Strategy WC1 – Define Objectives for the Future Walking and Cycling Environment	86



8.5	Strategy WC2 – Pedestrian and Cycle Network Improvements	88
8.6	Strategy WC3 – Extend High Pedestrian Activity Area	91
8.7	Strategy WC4 – Bicycle Parking	92
9.	Summary and Next Steps	94
9.1	Summary	94
9.2	Next Steps	96

Table Index

Table 1	Raymond Terrace Population and Employment Forecast	5
Table 2	Comparison of Parking Rates with other Major Regional Centres	28
Table 3	Transport Planning Indicators	43
Table 4	Integrated Corridor Classifications	48
Table 5	Parking User Types	64

Figure Index

Figure 1	Raymond Terrace in Relation to the Centres in the Lower Hunter	3
Figure 2	Raymond Terrace Land Uses	4
Figure 3	Raymond Terrace Town Centre in Context	8
Figure 4	Regional Road Links	11
Figure 5	Car Mode Shares for Journey to Work Trips	12
Figure 6	Raymond Terrace Town Centre Street Network	14
Figure 7	Existing Car Parking Supply	25
Figure 8	Raymond Terrace Bus Routes	31
Figure 9	Raymond Terrace Bus Frequency Guide	32
Figure 10	Pedestrian and Cycleway Facilities	35
Figure 11	Road Crashes 2005-2009	38
Figure 12	Proposed Road Hierarchy	50
Figure 13	Sports Field Master Plan Connectivity	51
Figure 14	Raymond Terrace Road Network – Connectivity	53
Figure 15	Proposed Kerb Extensions (Conceptual) – Adelaide St-William St Intersection	55
Figure 16	Proposed Kerb Extensions (Conceptual) – Adelaide St-Glenelg St Intersection	56



Figure 17	Conceptual Gateway Treatment for Adelaide Street	56
Figure 18	William Street Reconfiguration – Option 1	58
Figure 19	William Street Reconfiguration – Option 2	59
Figure 20	William Street Reconfiguration – Option 3	60
Figure 21	Potential Satellite Car Park Locations	72
Figure 22	Proposed Fare-Free Zone	80
Figure 23	Proposed Walking and	90
Figure 24	Extension of High Pedestrian Activity Area	92

1. Introduction

1.1 Overview

GHD was commissioned by Port Stephens Council (PSC) to undertake a *Transport and Parking Review* ("The Study") for Raymond Terrace with the view of guiding the development of a *Raymond Terrace Growth Centre Strategy*, which will inform the review of the Port Stephens Local Environmental Plan 2000.

The *Raymond Terrace Growth Centre Strategy* seeks to provide a clear direction for the future growth of Raymond Terrace having regard to the targets for additional population and employment outlined in the *Lower Hunter Regional Strategy* (NSW Government, 2006), with particular focus on the town being designated as one of the "major regional centres" for the Lower Hunter region.

1.2 Study Approach

In order to develop realistic and achievable transport outcomes for Raymond Terrace, this will require making key decisions on the value of effectiveness of a range of different transport options. These transport options will need to be assessed as part of a wider package of measures to manage demand for car use in the future. This needs to be done against a backdrop of transport objectives and strategies with the aims of increasing the use of walking, cycling and public transport.

In this regard, this Study reviews the historical context of transport, access and parking provision within Raymond Terrace and seeks to provide a framework to develop a logical plan for implementing the recommended transport strategies to develop a high quality transportation system for Raymond Terrace.

The transport strategies developed as part of the study will verify future planning controls for Raymond Terrace to ensure a coordinated and efficient approach to land use and transport planning that responds to the vision for Raymond Terrace, and its emerging role as a major regional centre.

1.3 Report Structure

The remainder of this report is structured as follows:

- ▶ Section 2 – Planning Context – reviews the strategic planning context to confirm the strategic planning basis for the study area and its surrounds;
- ▶ Section 3 – Existing Transport Situation – presents the background information on the current transport situation in Raymond Terrace; and
- ▶ Section 4 – Indicators to Achieve Sustainable Accessibility – provides a discussion on the indicators proposed to be used to assess performance of the strategy.

Following these introductory sections, specific strategies are detailed in the sections relating to the following key themes:



- ▶ Section 5 – Road Network Strategy – identifies and promotes the management of the road network to facilitate safe and efficient access to Raymond Terrace;
- ▶ Section 6 – Parking Strategy – provides the strategic direction for the development of an overall parking strategy in context with Council plans and policies;
- ▶ Section 7 – Public Transport Strategy – identifies appropriate strategies to promote the aims of increasing public transport use;
- ▶ Section 8 – Walking and Cycling Strategy – identifies more sustainable modes of transport such as walking and cycling, and the requirements to promote them as suitable alternatives to car travel.

Together, the different strategies under these sections constitute the recommendations comprising the Integrated Transport Strategy for Raymond Terrace.

- ▶ Section 9 – Summary and Next Steps – then provides a wrap-up of the review and outlines a number of recommended next steps.

2. Planning Context

This section reviews the relevant planning strategies, policies and controls affecting Raymond Terrace. The review establishes the broad transport and land use context in order to achieve the complex, inter-related aims of integrated land use and transportation for the study.

2.1 Location

Raymond Terrace lies at the confluence of the Hunter and Williams River. It is about 26 kilometres north of Newcastle on the alignment of the Pacific Highway. In 1998, a section of the Pacific Highway bypassing Raymond Terrace between Heatherbrae and Ferodale was opened, effectively reducing the volumes of traffic passing through Raymond Terrace.

Raymond Terrace has been designated as a “Major Regional Centre” in the Lower Hunter Regional Strategy which is targeted to accommodate the main retail, employment and service facilities for the Port Stephens Local Government Area (LGA).

Figure 1 shows a portion of the Lower Hunter Regional Strategy map indicating the general geographical location of Raymond Terrace in relation to the three other major regional centres (Cessnock, Maitland, and Charlestown) and to the Newcastle Regional City.

Figure 1 Raymond Terrace in Relation to the Centres in the Lower Hunter



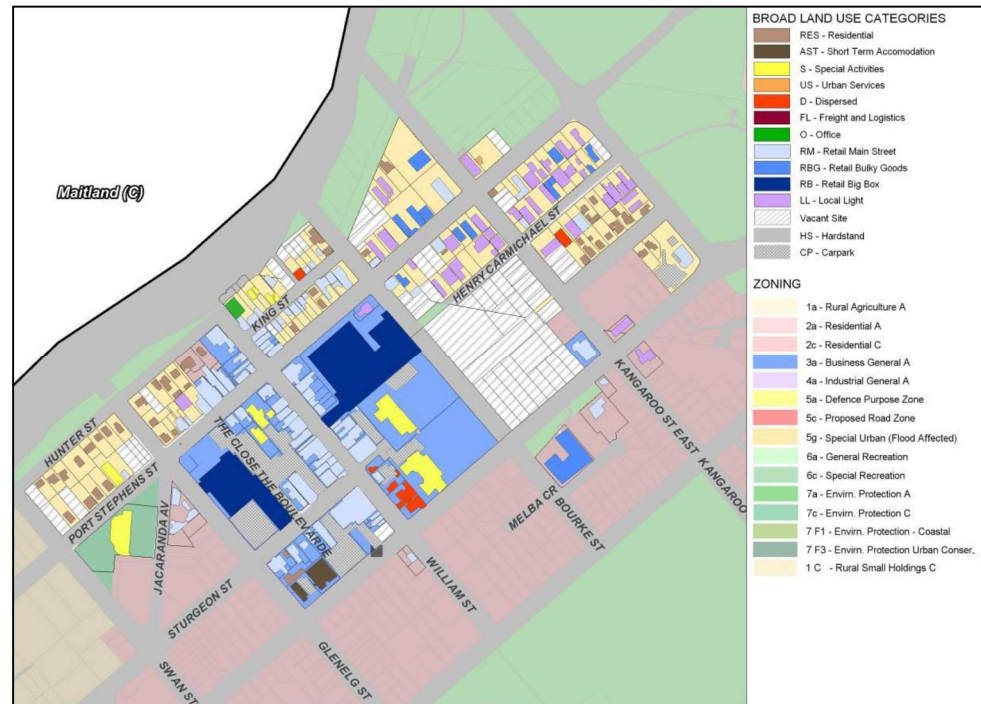
Source: Extracted from strategy map from *Lower Hunter Regional Strategy* (Department of Planning, 2006)

2.2 Existing Land Uses

Figure 2 shows existing land uses within the town centre of Raymond Terrace. The broad land use categories indicate that the central core, bounded by Port Stephens

Street, Glenelg Street, Adelaide Street and the Bourke Street alignment is predominantly retail, surrounded by residential and local light industrial uses, including those zoned as special urban (flood-affected).

Figure 2 Raymond Terrace Land Uses



Source: Port Stephens Retail and Commercial Centres Study – Draft Report (SGS, 2009).

2.3 Population and Employment

Data from the Bureau of Transport Statistics (BTS) indicate that by 2036, the total population and employment in Raymond Terrace¹ will be about 27% higher than 2011 levels. This represents an average growth rate of about 0.95% per year.

Table 1 shows the BTS forecasts for population and employment for Raymond Terrace.

¹ Covering travel zones (TZs) 3517 and 3518 in the 2006 Journey to Work maps.

Table 1 Raymond Terrace Population and Employment Forecast

Hunter	2011	2016	2021	2026	2031	2036
Population forecast						
► Residential	4,181	4,491	4,739	4,952	5,130	5,270
► Shopping area	2,980	3,202	3,383	3,545	3,689	3,810
Total population	7,161	7,693	8,122	8,497	8,819	9,080
Growth from previous		1.4%	1.1%	0.9%	0.8%	0.6%
Employment forecast						
► Residential	206	214	229	235	241	249
► Shopping area	2,951	3,132	3,382	3,498	3,611	3,750
Total employment	3,157	3,346	3,611	3,733	3,852	3,999
Growth from previous		1.2%	1.5%	0.7%	0.6%	0.8%

Source: Bureau of Transport Statistics.

Note: Residential is represented by Travel Zone (TZ) 3517, while the shopping area is represented by TZ 3518, as per the Bureau of Transport Statistics travel zone boundaries for 2006.

2.4 Economy

Raymond Terrace is the base of the local services economy (retail and services) of Port Stephens. It is also the service and administrative centre for the LGA.

The *Economic Development Strategy* for Port Stephens (ADW Johnson, 2011) indicates that the growth of Raymond Terrace is being driven by population growth and by small business growth in the region, which together have a combination of full-time jobs and part-time jobs (especially in retail) and employs around 3,000 people.

The strategy indicates that in the medium term, Raymond Terrace needs to be developed as Port Stephens' primary regional services centre, with improvements in retail and higher level services and a consolidation of office accommodation. This is also in line with Raymond Terrace being designated as one of the Lower Hunter Region's major regional centres.

Key economic / trade issues

The economic development of Raymond Terrace has been investigated most recently under the *Economic Demand and Impact Assessment Study* (ADW Johnson Pty Ltd, 2011). Key transport-related issues arising from the economic demand and impact assessment for Raymond Terrace include:

- Primary, secondary and tertiary trade areas of Raymond Terrace town centre encompass a large physical extent, extending up to 20 kilometres to the north east for the Primary Trade Area (PTA), covering Karuah, Seaham, Clarence Town, Medowie and Wallalong. This indicates a significant potential catchment;

- ▶ These trade areas are concentrated mainly to the north and east, indicating that travel demand, particularly for shopping trips to the town centre, will likely focus on the north and east, using Adelaide Street North, Richardson Road, Newline Road and Seaham Road for access;
- ▶ An analysis of household and age structure indicates capacity for retail spending, with steady to strong growth in population and number of dwellings across the Raymond Terrace trade areas. This will contribute to a steady increase in future demand for travel to and from the town centre, particularly for shopping, business, leisure and work purposes; and
- ▶ The high mobility of the catchment population reflects capability to travel to nearby centres to support needs – which implies that the preferred mode of travel to Raymond Terrace may continue to be the private car. If not addressed, this will have future implications of the capability of Raymond Terrace's transport network to support travel demand sustainably.

2.5 Review of Planning Policy and Strategy

This section provides a summary of the implications key planning policies, strategies and statutory documents reviewed as part of this Study. These policies include:

- ▶ *Port Stephens Local Environmental Plan 2000*;
- ▶ *Raymond Terrace Urban Design Guidelines 2001*;
- ▶ *Raymond Terrace Local Area Plan 2002* (Port Stephens Council);
- ▶ *Lower Hunter Regional Strategy* (NSW Department of Planning, 2006);
- ▶ *Port Stephens Development Control Plan 2007*;
- ▶ *King Street Waterfront Urban Design Study 2007*;
- ▶ *Commercial and Industrial Lands Study* (SGS Economics and Planning, 2010);
- ▶ *Port Stephens Urban Settlement Strategy 2010* (Port Stephens Council); and
- ▶ *Draft Centres Guidelines* (NSW Department of Planning, 2011).

2.5.1 Regional Positioning

Based on the regional strategic context of Raymond Terrace, future growth in the region is to be focused within and around existing centres. Within the Port Stephens Local Government Area, the key centres identified by the Lower Hunter Regional Strategy are Raymond Terrace and Nelson Bay as a Specialised Centre (tourism precinct). As Raymond Terrace has been identified as a Major Regional Centre, the following key features of the centre are to be built upon:

- ▶ Concentration of business, higher order retailing, employment and professional services;
- ▶ Civic functions and facilities;
- ▶ Focal point for subregional roads/transport networks; and



► Services number of districts.

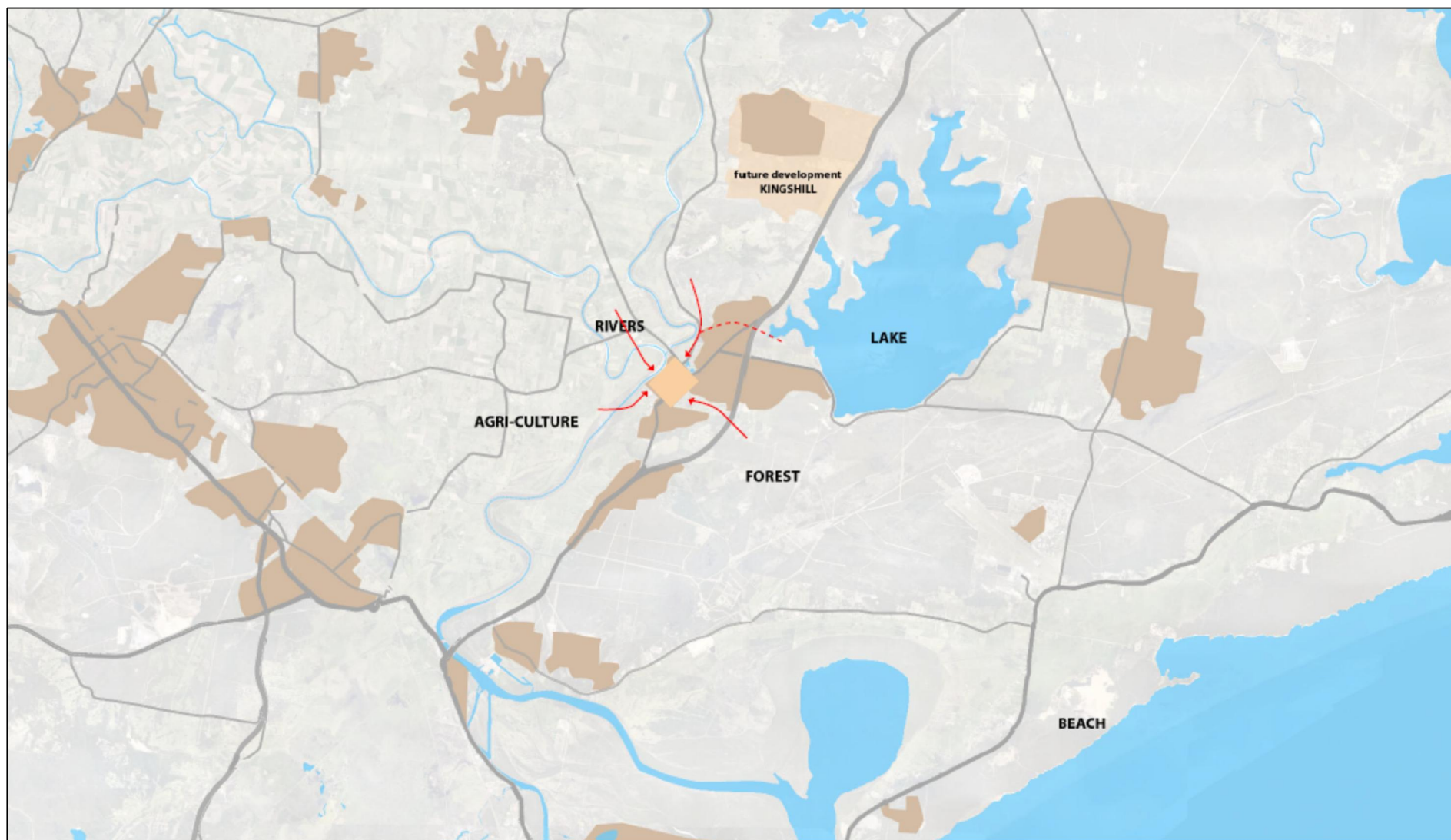
Raymond Terrace is located away from an existing railway line. However, it is located adjacent to the national Pacific Highway, which funnels traffic from Sydney and Newcastle to the south, to Taree and Port Macquarie to the north and beyond. Raymond Terrace is well serviced by both local and regional roads, to which future land use development could capitalise on without detracting from the existing 'country' feel of the centre.

2.5.2 Local Context

Raymond Terrace is located north of the Pacific Highway, and confined to the southern side of the Hunter River. The town centre generally follows a grid street network, with areas of urban sprawl around the town centre accommodating low density residential dwellings. Existing rural/farm land also adjoins the town centre to the south-west. Raymond Terrace is constrained by flood-prone areas to the north, west and south.

Figure 3 shows the location of Raymond Terrace Town Centre in the context of the hinterland.

Figure 3 Raymond Terrace Town Centre in Context



Source: GHD/Urbis, 2011

2.5.3 Strategic Opportunities

The future growth of Raymond Terrace should consider developing a high-level strategic framework that identifies key strategic opportunities to guide any decisions and detailed resolution of urban structure, access, movement patterns and parking management.

Key strategic opportunities relate to:

- ▶ Identifying, consolidating and maintaining open space areas at the northern and southern areas of the town centre to be used for leisure and sporting activities;
- ▶ Establish a public domain walkway feature along the waterfront – consistent with the findings of the *King Street Waterfront Precinct Study* (2007);
- ▶ Strengthening a pedestrian zone within the town centre, through reduced traffic flows, traffic calming devices, etc. – in line with the *Draft Centres Guidelines* (Department of Planning, 2011);
- ▶ Strengthening William Street as the main road of the town centre – supportive of the town centre extension outlined in the *Port Stephens DCP 2007 Chapter C1: Raymond Terrace Town Centre*;
- ▶ Focusing majority of traffic, particularly through traffic, along Adelaide Street. Urban design principles can reinforce Adelaide Street as the main vehicular connector, through taller building elements and proposed land uses associated with main roads (commercial/light industrial uses on the edge of town); and
- ▶ Reconfiguration of street cross sections, in particular Adelaide Street, William Street and Port Stephens Street in view of the above.

3. Existing Transport Situation

This section reviews the existing traffic, road, public transport, parking, pedestrian and cycling conditions within Raymond Terrace. The analysis and evaluation of current transport performance will assist in understanding the current and likely future challenges of the transport system of Raymond Terrace.

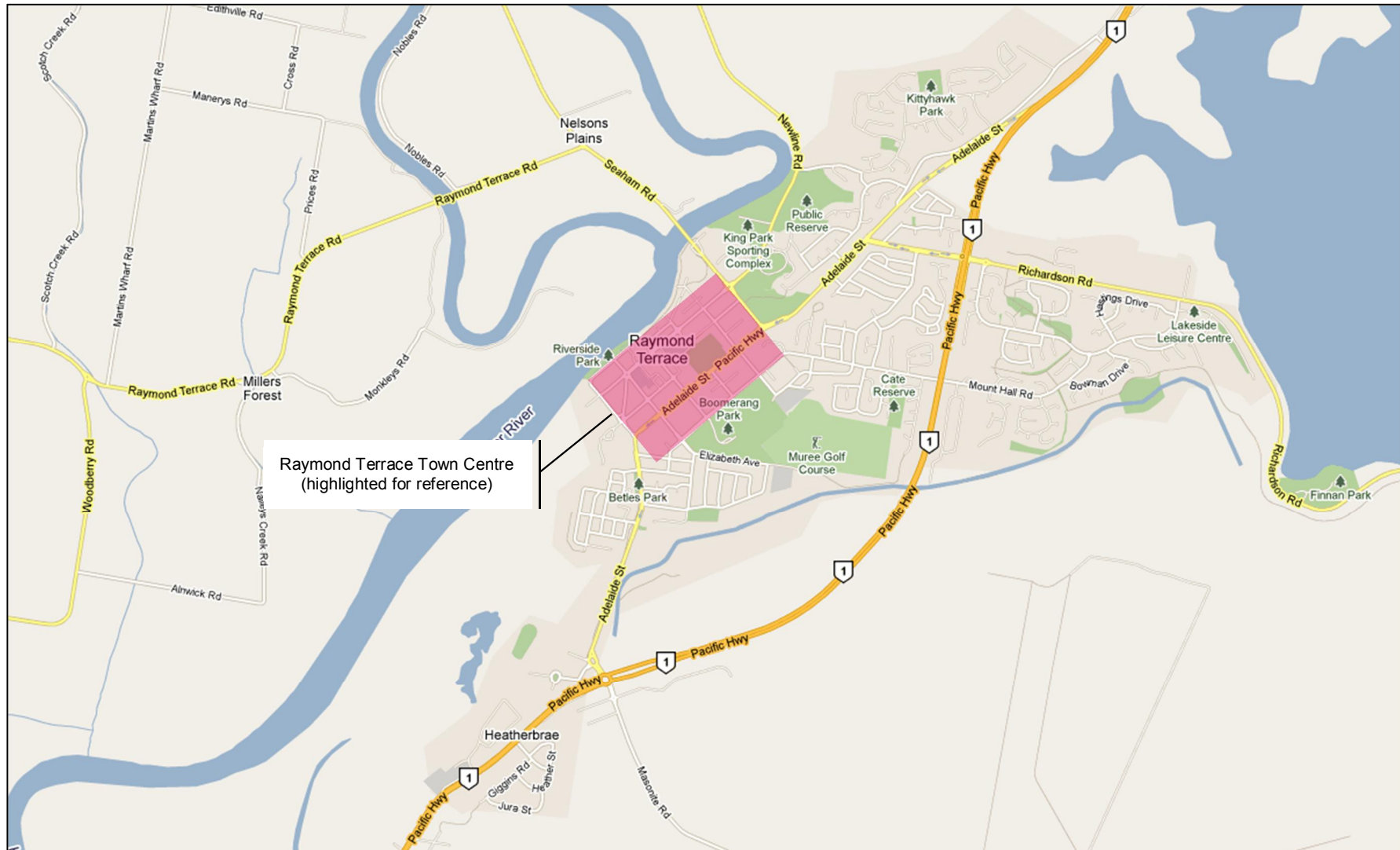
3.1 Regional Linkages

The key regional road connections servicing Raymond Terrace is shown in Figure 4 and summarised below:

- ▶ Pacific Highway (State Highway No. 10) – the main arterial road linking Sydney and Brisbane. It used to traverse through the town centre of Raymond Terrace until a bypass was opened in December 1998. The Pacific Highway in the vicinity of Raymond Terrace carried an annual average daily traffic (AADT) of more than 23,000 vehicles in 2004;
- ▶ Adelaide Street, running through Raymond Terrace in a south west-north east orientation, used to be part of the Pacific Highway before a bypass between Heatherbrae and Ferodale was opened in 1998. It runs through the south east of the commercial area of Raymond Terrace. Prior to the opening of the bypass, AADT on Adelaide Street was about 23,500 (1998). Traffic information from the RTA indicates that in 2001, after the Pacific Highway bypass opening, AADT on Adelaide Street was recorded at 8,262 vehicles. It increased to slightly more than 10,000 vehicles in 2004;
- ▶ Richardson Road – provides a strategic link between the residential areas of Raymond Terrace and areas to the east, including Williamstown and the Tomaree Peninsula with the town centre, the Pacific Highway and other communities west of the Hunter River (via Seaham Road). Traffic information for 2004 indicates that in the vicinity of the Pacific Highway, Richardson Road had an AADT of about 14,000 vehicles;
- ▶ William Bailey Street on the north of the town centre links across the Williams River to Nelsons Plains, where there are regional road connections to Seaham via Seaham Road and to Maitland via Raymond Terrace Road. Traffic information from the RTA indicates that the AADT on William Bailey Street west of Adelaide Street was about 14,600 in 2004 and about 15,400 in 2008;
- ▶ Newline Road on the north of Raymond Terrace town centre provides alternate routes to Seaham via Eagleton. It also provides links between the western precincts of the new residential development at Kings Hill and Raymond Terrace town centre. Traffic information provided by PSC indicates that the average daily traffic on Newline Road was about 3,570 vehicles in 2009.



Figure 4 Regional Road Links



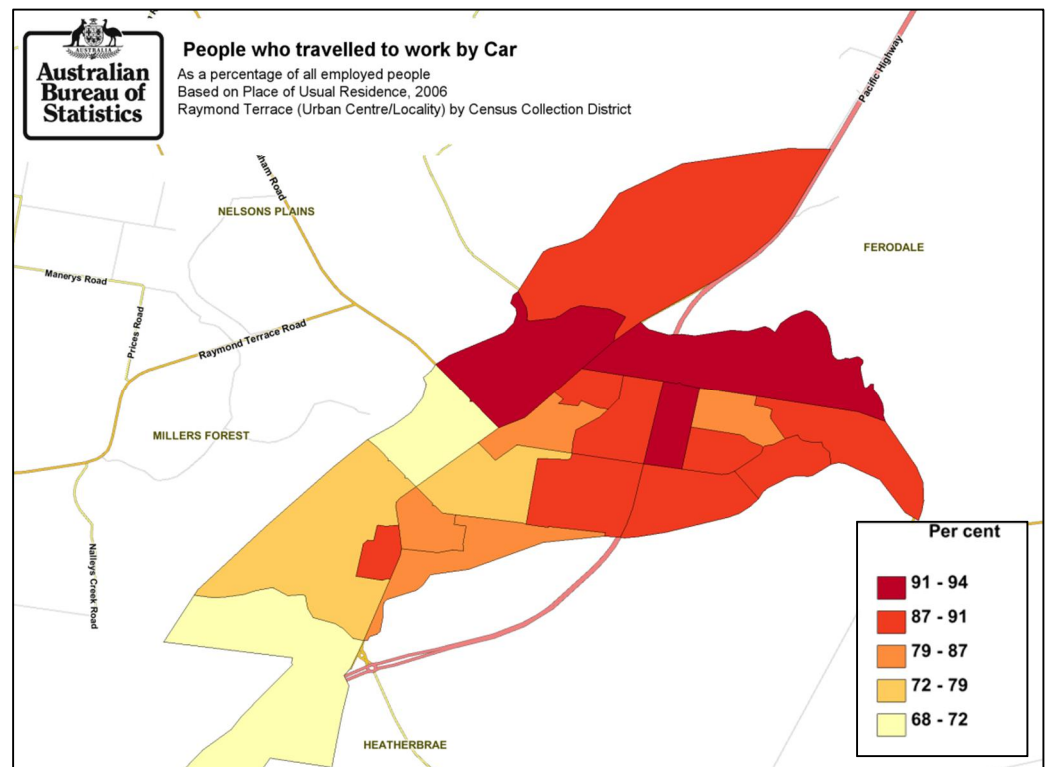
Map Source: Google Maps

3.2 Travel Characteristics

Figure 5 shows the distribution of Raymond Terrace residents who travelled to work by car, as gathered from 2006 census data from the ABS.

The information indicates a high share of car trips made for journeys to work by residents of Raymond Terrace. This is more pronounced in main residential areas north and east of the town centre.

Figure 5 Car Mode Shares for Journey to Work Trips



Source: Australian Bureau of Statistics

This compares with information from the BTS, which indicate that the share of bus transport for journey-to-work trips is 2%.

The relatively high proportion of work trips made using private vehicle modes highlights the challenge to provide alternative mode choices to ensure a sustainable future.

3.3 Car Ownership

The *Annual Report: State of the Environment* for 2009-1010 prepared by Port Stephens Council indicate increasing car ownership levels for Port Stephens households. Summarising information from the 2006 ABS census, the report indicates the following key car ownership trends:

- Number of single-vehicle households decreased by 489 between 2001 and 2006, from 9,358 to 8,869;

- ▶ Number of 2-car households increased by 957, from 6,994 to 7,951; and
- ▶ Number of households with three (3) or more cars increased by 975, from 2,276 to 3,251.

The increasing levels of car ownership reflect the settlement patterns in Port Stephens, characterised by dispersed urban settlements without convenient public transport linkages. It also presents the challenges in developing suitable strategies to address the trends.

3.4 Town Centre Street Network

Figure 6 shows the existing street network within Raymond Terrace town centre.

The street network in Raymond Terrace town centre is a regular grid pattern. William Street serves as the main street in the commercial core of the town centre. Adelaide Street, the Old Pacific Highway, provides the key regional access to Raymond Terrace.

Port Stephens Street runs parallel to Adelaide Street towards the west. It links with Swan Street in the south to William Bailey Street in the north. Its alignment continues northward as Newline Road. Between Port Stephens Street and Adelaide Street are Sturgeon Street, which provides links south of William Street, and Carmichael Street, on the north of William Street.

South east of William Street is Irrawang Street. Boomerang Park lies to the south east of Irrawang Street.

The lateral streets forming the grid are Swan Street and Glenelg Street south of William Street. To the north of William Street are Bourke Street and Kangaroo Street.



Figure 6 Raymond Terrace Town Centre Street Network



3.4.1 Adelaide Street

Adelaide Street forms part of the old Pacific Highway alignment, which was bypassed between Heatherbrae in the south and Ferodale in the north in 1998.

Adelaide Street serves as the principal through route in Raymond Terrace, and links to Seaham Road across the Hunter River to the west. It also links with Richardson Road north of the town centre, and provides connectivity with Medowie, Williamtown, and Nelson Bay.

Adelaide Street generally has two through lanes per direction within the town centre from William Bailey Street in the north to Swan Street in the south. Adelaide Street makes provision for exclusive turn lanes at approaches to the key intersections, such as Glenelg Street, William Street and William Bailey Street. These three intersections are all signal-controlled

The mid-block sections of Adelaide Street are generally provided with parallel kerbside parking. Bicycle lanes are marked on the approaches to the intersection with William Bailey Street.

Adelaide Street has a speed zone of 50 km/h south of Bourke Street, increasing to 60 km/h north of it. Information from the RTA indicates that Adelaide Street has an average daily traffic of about 9,710 vehicles (2008).



Adelaide Street, viewed towards the northbound approach to Glenelg Street intersection.



Adelaide Street, viewed towards the northbound approach to the William Bailey Street intersection.

3.4.2 William Bailey Street

William Bailey Street forms the north eastern edge of the Raymond Terrace town. It links with Adelaide Street on its south east end, and links to Seaham Road which continues on to Seaham across the Hunter River on the north west.

The William Bailey Street – Adelaide Street intersection was recently upgraded to a signalised one under funding from the Blackspot program.

William Bailey Street has one traffic lane per direction in between approaches to the Adelaide Street and the Port Stephens Street intersections.

There are no footpaths provided on William Bailey Street.



William Bailey Street, viewed towards the north west approaching the roundabout at the Port Stephens Street intersection.

3.4.3 William Street

William Street serves as the main street serving Raymond Terrace town centre. It links Irrawang Street and Boomerang Park on its south east end, and with Hunter Street along the Hunter River on its north east end. It is lined with retail shops and provides access to majority of the retail and service establishments in the town centre, including as the main pedestrian access to Raymond Terrace Marketplace. There are 3-metre footpaths along each side.

William Street's intersection with Adelaide Street is signalised, while those with Sturgeon Street and Port Stephens Street are roundabout-controlled. The section between Sturgeon Street and Port Stephens Street lies within a designated high pedestrian activity area, and is signposted as a 40 km/hr zone.

William Street provides the opportunity of lateral connections through the town centre core, linking Boomerang Park on the south with the Hunter River on the north;

Throughout its length, William Street is generally provided with 135-degree rear-to-kerb parking. However, the cross-fall of the road cross section is steep, and presents issues relating to safety and amenity. There is record of an incident wherein a vehicle

backed onto the footpath and struck pedestrians, resulting in a fatality to one and injuries to two others.



William Street, viewed to the south east from the Port Stephens Street intersection.



Pedestrian crossing on William Street between Centro and Raymond Terrace Marketplace. Note crossfall on the sides.

3.4.4 Port Stephens Street

Port Stephens Street provides a north east – south west link through Raymond Terrace town centre. It runs parallel to Adelaide Street between Swan Street in the south west and William Bailey Street in the north east.

Port Stephens has three distinct cross sections:

- The section on the south west between Glenelg Street and William Street is provided with a tree-lined wide median island. This section has a 40 km/h posted speed limit within a high pedestrian activity area, and incorporates 3m wide footpaths. It incorporates one through traffic lane and parallel parking in each direction. This section serves a number of retail shops and community facilities (child care centre, library) as well as being an access route to the Centro off-street parking area.

- ▶ The middle section between William Street and Bourke Street has a central median dividing strip. It incorporates a divided carriageway with one through lane in each direction, and 135-degree rear-to-kerb parking on the north west side. The section includes the Raymond Terrace Marketplace, with a designated bus zone located to the north east of the William Street intersection. However, the bus zone does not directly link with pedestrian access to Raymond Terrace Marketplace. Land uses on the north west include small commercial structures interspersed with residential uses.
- ▶ The north east section between Bourke Street and William Bailey Street incorporates one through lane and 135-degree rear-to-kerb parking spaces in each direction. A wide median is also provided to facilitate turning movements at access points to developments. This section caters principally to light industrial uses, retail uses (Aldi, Dan Murphy's) and as access to the netball facilities closer to William Bailey Street.

Port Stephens Street links with Newline Road north of William Bailey Street, and provides access to new developments in Kings Hill.



The south west end of Port Stephens Street, viewed towards the southbound approach to Glenelg Street intersection.



The middle section of Port Stephens Street with the central median island, viewed towards the northbound approach to Bourke Street intersection.



The north east end of Port Stephens Street with the central median turn lanes, viewed towards the southbound approach to Bourke Street intersection.

3.4.5 Sturgeon Street

Sturgeon Street South provides a north east to south west link south west of William Street. It runs parallel to and in between Adelaide Street and Port Stephens Street, forming the south east edge of the 40 km/hr high pedestrian activity zone.

The main bus interchange in Raymond Terrace is located along Sturgeon Street South, outside the Centro development close to the intersection with Glenelg Street.

Sturgeon Street South generally has one traffic lane and 135-degree rear-to-kerb parking in each direction...



Sturgeon Street South, viewed towards the northbound approach to the William Street intersection.

Sturgeon Street North follows the general alignment of Sturgeon Street south, and runs between Kangaroo Street and William Bailey Street north east of the Sports Field. It serves mainly residential areas.

3.4.6 Glenelg Street

Glenelg Street runs parallel to William Street towards the south west end of the town centre core. It provides access to residential dwellings located in the south western portion of the town centre, as well as a number of commercial and retail establishments. Glenelg Street also provides access for goods vehicles to the Centro loading dock.

Traffic volume information provided by PSC indicates that Glenelg Street has an average daily traffic of about 5,000 vehicles (2010).

Glenelg Street forms the south west edge of the 40 km/hr high pedestrian activity zone in Raymond Terrace town centre, and generally has one traffic lane and 135-degree rear-to-kerb parking in each direction.



Glenelg Street on the westbound approach to the Sturgeon Street intersection.

3.4.7 Bourke Street

Bourke Street runs north west to south east and is parallel to William Street. Its west section runs between King Street and the Sports Field and intersects Port Stephens Street with a roundabout-controlled intersection. Bourke Street serves as the main access to the car parking area of Raymond Terrace Marketplace.

Bourke Street East follows the rough alignment of its western counterpart, stretching between Irrawang Street on the south east and Adelaide Street on the north west. Average daily traffic for the east section is about 560 vehicles.



Access to Raymond Terrace Marketplace car park area from Bourke Street West.

3.4.8 Kangaroo Street

Kangaroo Street runs parallel to William Street and its alignment forms the north east edge of the Sports Field. It stretches from Peter Dron Street near the east bank of the Hunter River, to Freeth Street south east of Irrawang Street. It intersects with Port Stephens Street at a Give-Way controlled intersection. Its intersection with Adelaide

Street has a median strip which does not allow through movements along Kangaroo Street.

Kangaroo Street generally serves residential dwellings north of the sports field and in the section east of Adelaide Street.



Kangaroo Street east of Adelaide Street.

3.4.9 Irrawang Street

Irrawang Street runs parallel to and to the east of Adelaide Street, serving principally residential areas and the St. Brigid's Primary School. On its south east is Boomerang Park. Recent traffic counts undertaken by Council indicate that Irrawang Street has an average daily traffic of 5,500 vehicles between Bourke Street and Kangaroo Street, while the section south of Glenelg Street, which generally serves residential land uses, has an average daily traffic of 1,370 vehicles.



Irrawang Street viewed southbound, with Boomerang Park on the left of the photo.

3.4.10 Summary of Findings

The key issues relating to the Raymond Terrace road network are summarised as follows:

- ▶ The road network structure in Raymond Terrace town centre is based on a sound grid-oriented pattern which has potential to achieve balanced distribution of traffic loads, provides for legibility and ease in wayfinding;
- ▶ Adelaide Street (old Pacific Highway) on eastern edge of town centre provides regional and arterial connections to external areas;
- ▶ Key intersections along Adelaide Street: Glenelg Street, William Street and William Bailey Street are signalised and are provided with separate turning lanes (left-turn and right-turn);
- ▶ The arterial route from south of the town centre to the William River Bridge on William Bailey Street via Adelaide Street traverses three signalised intersections;
- ▶ This compares with an alternative route through Raymond Terrace via Port Stephens Street, which does not traverse any signalised intersection. There is a common perception that Port Stephens Street is being used as a short-cut to bypass the traffic signals on Adelaide Street;
- ▶ The town centre core is generally provided with a 40 km/h zone, bounded by Glenelg Street, Port Stephens Street, William Street and Sturgeon Street;
- ▶ Peripheral areas in the town centre are provided with 50km/h zones;
- ▶ North of William Bailey Street, speed zones are generally 60km/h;
- ▶ The William Bailey Street – Adelaide Street intersection was recently converted to a signalised intersection with funding from the Blackspot Program;
- ▶ The road network hierarchy in the town centre is based on the traditional classification of roads having focus on vehicular movements (i.e. arterial, sub-arterial, collector, local roads);
- ▶ Adelaide Street presents challenges to pedestrian connectivity between town centre core and south east side due to wide distances at intersections, which generally allow for exclusive left turn and right turn bays.
- ▶ The *Sports Field Master Plan* (PSC, 2011) provides an opportunity to improve connectivity within the town centre, through the extension of Sturgeon Street and Bourke Street.

3.5 Parking

3.5.1 Existing Parking Supply

Figure 7 shows the extent of parking area provision in Raymond Terrace.

On-street parking is generally provided on all street sections in Raymond Terrace, with the exception of Port Stephens Street (south side) between Bourke Street and William Street beside Raymond Terrace Marketplace, which is designated as a bus zone.

Parking arrangements are generally 135-degree angle parking, or 45-degree rear-to-kerb angle parking) on kerbside lanes. These include William Street, Sturgeon Street,



Glenelg Street and Port Stephens Street north of William Street (except the south side between Bourke Street and William Street as noted above).

The main off-street car parking areas are located at Raymond Terrace Marketplace, Port Stephens Council offices, and at Centro Raymond Terrace, which includes both surface parking and a two-level car park structure.











New developments along Port Stephens Street, including a Dan Murphy's and an Aldi store have off-street parking provided for their customers.

The total number of on-street kerbside parking spaces for key streets is at least 275, comprising the following:

- ▶ William Street between Port Stephens Street and Sturgeon Street: 75 spaces;
- ▶ William Street between Hunter Street and Port Stephens Street: 29 spaces;
- ▶ Port Stephens Street between William Street and William Bailey Street: 125 spaces; and
- ▶ Sturgeon Street between Glenelg Street and William Street: 46 spaces.



Figure 7 Existing Car Parking Supply

-  No Time Restriction – 135°
-  No Time Restriction – 90°
-  No Time Restriction – Parallel
-  1P – 135°
-  1P – Parallel
-  2P – 135°
-  2P – Parallel
-  Off-Street At Grade Car Park
-  Off-Street Multi Storey Car Park
-  Undercroft Car Park



G:\21\20386\Tech\DraftReport\Maps\Figure_07_ExistingParkingSupply.docx

During periods of peak parking demand, spaces in William Street and off-street car parks for developments such as Centro and Marketplace tend to have higher occupancy rates compared with parking spaces further away. Although parking surveys were not conducted as part of this assessment, observations on site indicate that parking supply is generally adequate to meet current demand levels.

3.5.2 Current Parking Restrictions

Parking time restrictions are generally 1P parking south of William Street, 2P parking on Port Stephens Street north of William Street, and unrestricted parking in other locations, with the exception of significant sections along Adelaide Street and along William Bailey Street.

The time restrictions on parking are generally in force between 8:30am and 6:00pm Mondays to Fridays, and between 8:30am and 12:30pm Saturdays.

3.5.3 Parking Management

Current car parking management in Raymond Terrace can be generally characterised by the following:

- ▶ Practically all kerb spaces in the town centre accommodates car parking, except for limited stretches on Adelaide Street and those spaces designated as bus zones;
- ▶ There are currently time restrictions in place for most parking spaces (although no information on levels of infringements were assessed in this review);
- ▶ No parking user fees are currently being charged in Raymond Terrace; and
- ▶ Site observations indicate more intense parking demand closer to the main activity areas (Centro, Marketplace, and Council).

3.5.4 Accessible Parking

A review of on-street accessible parking spaces in the town centre reveals the following key findings:

- ▶ On-street accessible parking is provided on William Street near the pedestrian crossing between Marketplace and Centro;
- ▶ Quantum of accessible parking space on William Street appears sufficient;
- ▶ There is limited provision of on-street accessible spaces outside William Street; and
- ▶ AS 2890.6 (2009) provides standards for accessible car parking. However, only parallel and 90-degree angle parking arrangements are covered.

3.5.5 Shared Parking

Traditionally, development controls have favoured the provision of private car parking for each development, based on an average peak trip generation rate from RTA

surveys. When viewed within the context of a local centre, this approach tends to provide an oversupply of fragmented parking areas with undesirable impacts on urban form and amenity.

This is already evident in some portions of Port Stephens Street, where new developments such as Dan Murphy's and Aldi have provided the required parking associated with their developments, yet on-street parking is also still provided. These off-street car parking areas can potentially be shared with other nearby parking generators to manage the requirements for parking supply in the town centre.

3.5.6 Sports Field Master Plan Car Parking Supply

The proposed development of the Sports Field will provide an estimated 1,400+ car parking spaces in stages. It is intended that this parking supply will be used as a shared facility with existing and future developments in the town centre. This presents an opportunity to take away on-street parking in nearby streets, particularly William Street and Sturgeon Street, and further improve the streetscape.

Critical to the Sports Field Master Plan is a detailed assessment of the traffic impacts of access to the parking facility. With a car park of the size proposed for the Sports Field site, there is a need to distribute traffic flows more evenly, and avoid the concentration of traffic on one or two access points.

3.5.7 Review of Port Stephens DCP on Parking

Summary of key findings from the review of *Port Stephens DCP 2007 Chapter B3 – Parking, Traffic and Transport* relating to provision of car parking facilities in commercial centres are as follows:

- ▶ Port Stephens Council DCP Chapter B3 applies to the entire LGA; there is no specific DCP relating to parking in Raymond Terrace;
- ▶ Main consideration in DCP Chapter B3 is the schedule of required car parking provision, given in Paragraph B3.8 and Figure B3.8, which prescribe minimum parking requirements for different land uses;
- ▶ B3.C2: requirements for a combination of uses require individual parking provision requirements to be added together. No consideration is given for peak demand variations between adjacent commercial uses. There is provision for reduction, however, for sharing between residential and non-residential uses (B3.C8);
- ▶ B3.C4: where development use is not listed in schedule, Council will determine requirement for parking based on traffic study to be conducted. *Guidance needs to be included that the traffic study should include a profile of the variation of parking demand, in order to assess opportunities for shared parking;*
- ▶ B3.C8: DCP allows for reduction in required parking spaces for certain conditions. However, no mention of public transport accessibility is mentioned as consideration for parking requirement reduction; and

- B3.C9: Provides for requirements to demonstrate need or opportunity to reduce parking requirement. Further guidance needs to be provided on the scope of such traffic studies (e.g. demonstrate parking demand profile).

3.5.8 Comparison with DCPs for Other Major Regional Centres

A comparison of required parking provision rates with other major regional centres in the Lower Hunter Region for selected commercial land uses is shown in Table 2. The rates shown in Table 2 all reflect minimum provision, and where a whole number is not calculated, required parking is rounded up from calculated figures.

Table 2 Comparison of Parking Rates with other Major Regional Centres

Land Use	Required Parking Spaces per 100 m ² (or per unit as stated)				
	Raymond Terrace (2007)	Maitland (2008)	Cessnock (2006)	Charlestown (2011)	RTA (2002) Guide to Traffic Generating Developments
Commercial premises	2.5	2.5	3.3	2.5 ^a	2.5
Restaurants	4.5	4	14.3	4 ^b	14.3
Hotel/Motel	1/unit	1/unit	1/unit	1/unit	1/unit
Hotel staff	-	0.5/emp	0.3/emp	0.5/emp	0.5/emp
Shops/Retail	5	4 ^c	5	4 ^b	6.1 ^d
Bulky goods	1.8	2.2	2.2	2.5	-
Medical centre	4	2.2	4	See below	4

- Notes:
- a. Charlestown DCP allows provision of bus shelters or approved equivalent in lieu of parking spaces for commercial developments meeting certain conditions (distance from bus route, more than 20 spaces required).
 - b. Charlestown DCP allows provision of bus shelters of approved equivalent for shops or group of shops meeting certain conditions.
 - c. Maitland DCP allows for reduction where it can be demonstrated that peak demand does not coincide with adjacent uses.
 - d. RTA Guide allows for decreasing rate as development floor area increases. 6.1/100 m² is the highest rate for developments less than 10,000 m² GFA.
 - e. Charlestown DCP calculates requirements for medical centres depending on number of on-duty practitioners (1ea.), employees (0.5ea), and consulting rooms(1.5ea).

The comparison reveals the following:

- The parking requirements for Raymond Terrace for commercial premises are comparable with the requirements at the other major regional centres;
- Parking requirements for restaurants are comparable with those for Maitland and Charlestown (slightly higher), but significantly lower than those for Cessnock and the RTA Guide;

- ▶ Parking requirements for hotels / motels are comparable across all centres;
- ▶ Port Stephens DCP B3 does not specify parking requirement for hotel staff. Others have comparable requirements;
- ▶ Requirements for retail areas are slightly higher than those for Maitland and Charlestown, and comparable with that of Cessnock. Charlestown's DCP allows for reduction in parking provision where shared uses can be demonstrated. It also allows for further reduction in areas adequately served by public transport;
- ▶ Requirements for bulky goods parking in Raymond Terrace are lower than those for the other major regional centres; and
- ▶ Parking requirements for medical centres are comparable with that for Cessnock and as stated in the RTA Guide, but higher than in Maitland. Charlestown's requirements are based on actual usage of the medical centre, which is more directly related to intensity of use, rather than on floor space.

3.5.9 Section 94 Contributions

The Port Stephens DCP Chapter B3 Paragraph C5 allows for cash-in-lieu contribution for on-site provision of parking spaces (Section 94). Paragraph B3.C6 indicates Council would need to use S94 contributions on acquisition of land and construction of public parking facilities in vicinity of the development proposal. Exceptions noted are those for residential or tourist uses.

3.5.10 Summary of Findings

The key parking issues in Raymond Terrace can be summarised as follows:

- ▶ From site observations, the general overall parking supply is sufficient to cater for current demand;
- ▶ Predictably, parking demand is greatest near main destinations. These include Council offices, , the portion of William Street closest to the pedestrian crossing between Centro and Marketplace, and the off-street car park in the block bounded by Port Stephens Street, William Street, Sturgeon Street and Glenelg Street (The Close); Most other on-street car parking spaces are in less demand, including those along Port Stephens Street where new developments have also provided off-street parking facilities catering to their own requirements;
- ▶ The general streetscape in Raymond Terrace town centre core is dominated by car parking, mostly rear-to-kerb angle parking. This general environment characterised by the dominance of car parking pervades even the tree-lined Jacaranda Avenue (see image below);
- ▶ The parking coverage map (Figure 7) shows a considerable extent of current parking provision in the town centre;
- ▶ Port Stephens Street is used as primary carpark access to key off-street car parks (Centro, Marketplace), potentially generating additional traffic movements that is perceived to be through traffic;

- ▶ New developments on Port Stephens Street (Dan Murphy's, Aldi) already provide for off-street car parking, yet on-street spaces are still present;
- ▶ The layout of the Centro off-street car park poses potential conflicts with pedestrian flows;
- ▶ Council's DCP on Parking applies to the entire LGA. No specific parking development control applies separately to Raymond Terrace;
- ▶ The Parking DCP only covers car parking. No provision is made for bicycle parking;
- ▶ Current DCP parking provision rates for common land uses are in generally line with other Councils' rates; and
- ▶ There are no provisions for reduced parking attributable to public transport accessibility or availability.



On-street parking on Jacaranda Avenue

3.6 Public Transport

Public transport in Raymond Terrace is served by buses, operated by Hunter Valley Buses and Port Stephens Coaches. CountryLink provides regional bus services between Broadmeadow and Taree, with a coach stop on Adelaide Street in Raymond Terrace.

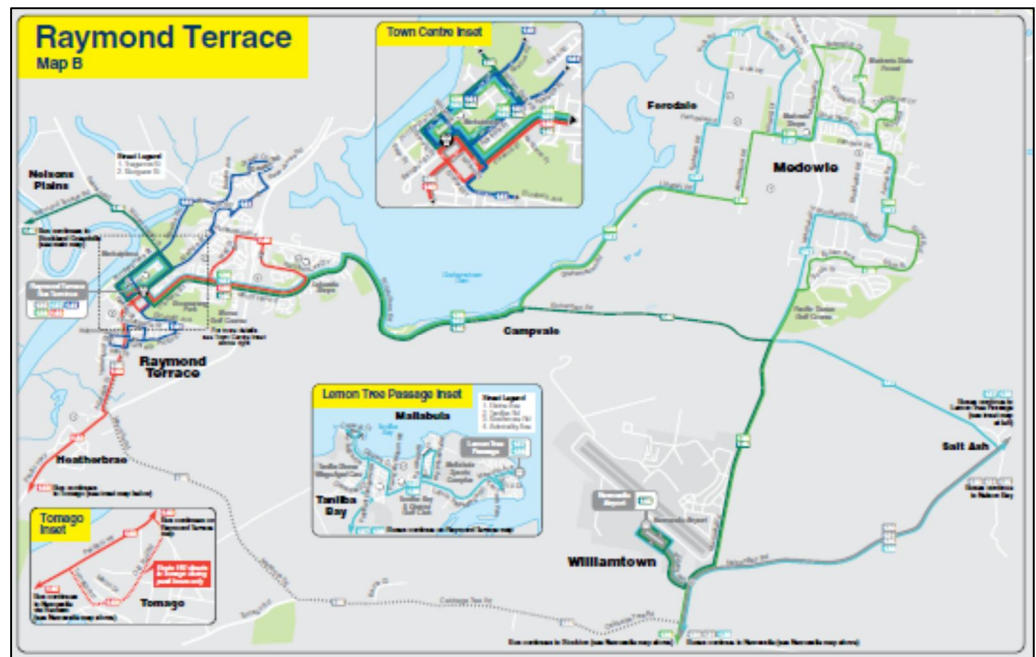
There are no passenger rail services in Raymond Terrace.

3.6.1 Bus Routes

Figure 8 shows the bus routes serving Raymond Terrace.

Raymond Terrace is served by a number of bus routes providing regional links with Maitland (Greenhills), Williamtown, Medowio, Stockton and Newcastle.

Figure 8 Raymond Terrace Bus Routes



Source: http://www.cdcbus.com.au/ignitionSuite/uploads/docs/10577_OMR2_network_map_NOV10.pdf

Following a review of bus network services in the Lower Hunter in 2010, 33 new buses and more than 1,000 extra services per week were introduced towards the end of 2010. The media release from Department of Transport noted the following changes that impact on Raymond Terrace:

- ▶ Introduction of a new cross-regional link between Newcastle Airport, Raymond Terrace and Stockland – Greenhills via Woodberry on route 145 to operate seven days a week;
- ▶ Improving services between Raymond Terrace and Newcastle on route 140, with better access to the growing employment area in Tomago;
- ▶ Improving local town service for Raymond Terrace on route 141; and

- Improving bus services in the Medowie area, with better access to Medowie Shops on routes 136 and 137.

3.6.2 Service Frequency

Bus services in Raymond Terrace generally provide an hourly service for each of the routes. Route 140 to Newcastle operates services every 30 minutes during the peak hours. Figure 9 shows the frequency of bus services for each of the routes.

Figure 9 Raymond Terrace Bus Frequency Guide

The table below provides a list of all bus routes and the suburbs they operate in. Approximate frequencies are shown below, refer to your timetable for bus departure times. For more information visit www.131500.com.au or call 131500.

Route	Destination	Peak Hours	Off Peak	Night Time	Saturday	Sunday
136	Raymond Terrace > Medowie > Newcastle Airport > Fern Bay > Stockton	60	60	-	60	120
137	Raymond Terrace > Medowie > Salt Ash > Lemon Tree Passage	60	120	-	120	2 trips
138	Lemon Tree Passage > Salt Ash > Newcastle Airport > Fern Bay > Mayfield > Newcastle	2 trips *	-	-	-	-
140	Lakeside Shops > Raymond Terrace > Tomago > Hexham > Mayfield > Newcastle	30	60	2 trips	60	120
141	Raymond Terrace Town Service	60	60	-	120	-
145	Newcastle Airport > Raymond Terrace > Woodberry > Ashtonfield > Stockland Greenhills	60	60	-	60	120
170	North Rothbury > Branxton > Rutherford > Maitland > East Maitland > Stockland Greenhills	2 trips *	2 trips	-	2 trips	-
180	Singleton Heights > Branxton > Rutherford > Maitland > East Maitland > Stockland Greenhills	2 trips *	2 trips	-	3 trips	-
181	Aberglasslyn > Rutherford > Maitland > East Maitland > Stockland Greenhills > Beresfield > Woodberry	60	60	120	60	120
182	Rutherford > Maitland > East Maitland > Stockland Greenhills > Ashtonfield > Thornton	60	60	120	60	120
183	Rutherford > Telarah > Maitland > East Maitland > Stockland Greenhills > Tenambit	40	40	120	60	120
184	Morpeth > Tenambit > East Maitland > Stockland Greenhills	2 trips	4 trips	-	3 trips	2 trips
185	Maitland > Bolwarra > Largs (limited service to Gresford via Paterson)	3 trips	2 trips	-	2 trips	-
187	East Maitland > Stockland Greenhills > Metford	60	120	-	120	-
192	Maitland > South Maitland	-	4 trips	-	2 trips	-

Notes - * Peak direction only

Source: <http://www.131500.com.au/upload/docs/nswti/HVB%20Region%202%20Guide.pdf>

3.6.3 Interchange Facilities

The main bus interchange in Raymond Terrace is located at the northern side of Sturgeon Street near Glenelg Street. The interchange is provided with passenger shelter and seating, as well as service information pylons.

There is a designated bus zone on Port Stephens Street beside Raymond Terrace Marketplace, on the southbound direction between Bourke Street and William Street. This is provided with bus information facilities. While the passenger waiting areas are adequate, there is no provision for passenger shelter or seating.



Sturgeon Street South, viewed northwards with the Raymond Terrace bus interchange on the left.



Port Stephens Street Bus Zone outside Raymond Terrace Marketplace.

3.6.4 Service Planning

The *Outer Metropolitan Service Planning Guidelines* (NSWTI, 2009) provide for standards and guidelines in planning bus services in NSW. Outer Metropolitan Bus Service Contract (OMBSC) Region 2 covers Raymond Terrace, which has the highest suburb population among those in the region (and highest among all suburbs in OMBSC Regions 1, 2, 3 and 4 covering Lake Macquarie and Lower Hunter regions).

As a designated Major Regional Centre for the Lower Hunter, Raymond Terrace is and will be a potential destination and interchange area for regional bus services, linking with the other major regional centres (Maitland, Cessnock and Charlestown), with Newcastle Regional City, potentially with other emerging centres (Morisset, Glendale) as well as with other growth centres within Port Stephens LGA (Kings Hill, Medowie, Wallalong).

Current bus services provide regular links with a number of the key destinations, including the recently-introduced Route 145 between Williamtown and Greenhills via Raymond Terrace, which runs on an hourly frequency each way.

3.6.5 Summary of Findings

The key findings relating to public transport in Raymond Terrace are summarised as follows:

- ▶ Bus network coverage – the town centre has adequate public transport coverage, with almost the entire area of the town centre within 400 metres of an existing bus stop;
- ▶ Bus shelters and facilities – currently, the bus facilities in the Sturgeon Street interchange are adequate, but observations on site indicate that capacity is close to being used up. The bus zone on Port Stephens Street does not have seating or shelter facilities;
- ▶ Bus interchange location – the main bus interchange at the Glenelg Street end of Sturgeon Street is at one end of the main activity area within the town centre. The development of the Sports Field site will shift the centre of activity further to the north east in the future, and the existing bus interchange location will be further away from this centre; and
- ▶ Bus layover area – bus layover activities have been observed to be undertaken on Port Stephens Street, at the bus zone outside Marketplace, and adjacent to the multi-level car park beside Centro. No formalised driver amenities are available.

3.7 Pedestrian and Cycle Network

3.7.1 Existing Facilities

Figure 10 shows the Draft Footpath and Cycling Strategy which indicates the current provision of footpaths and cycleways in Raymond Terrace.

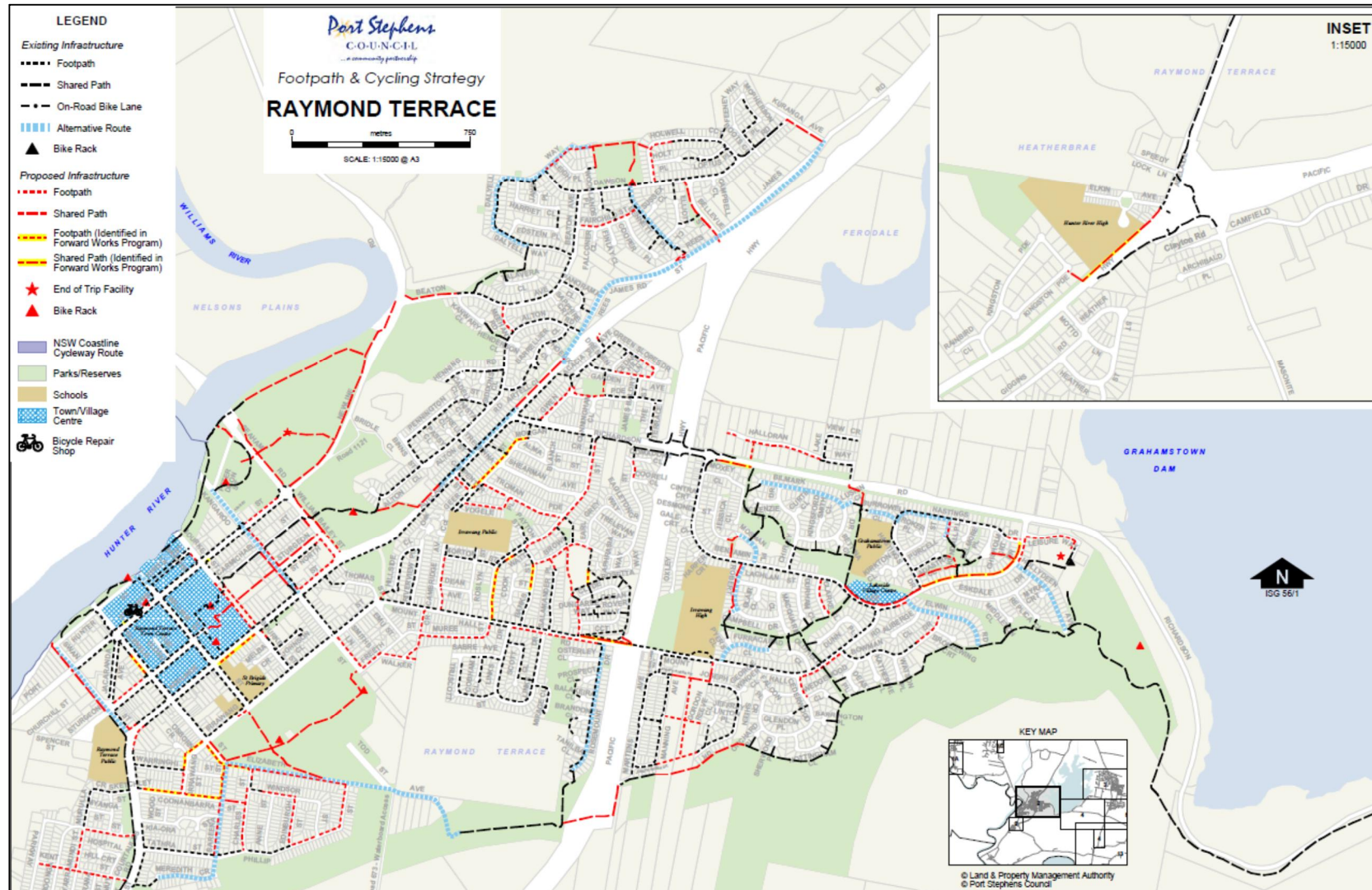
There is generally adequate provision of footpaths along the major streets in the Raymond Terrace town centre, both in terms of quantum and widths of footpaths.

There is an existing cycleway north of William Bailey Street, and links with the northern part of the town centre core through Carmichael Street. However, there are no marked cycle facilities within with the town centre. Site observations indicate that there is limited demand for cycling in Raymond Terrace town centre. However, it has also been observed that there are prohibition markings for bicycles to use the footpath on Port Stephens Street (south of William Street).

An 11-km cycleway links Raymond Terrace with Medowie via Grahamstown Dam, offering a ride along the dam foreshore. A tourism study for Council notes that this cycleway is not promoted and is rarely used by visitors.



Figure 10 Pedestrian and Cycleway Facilities



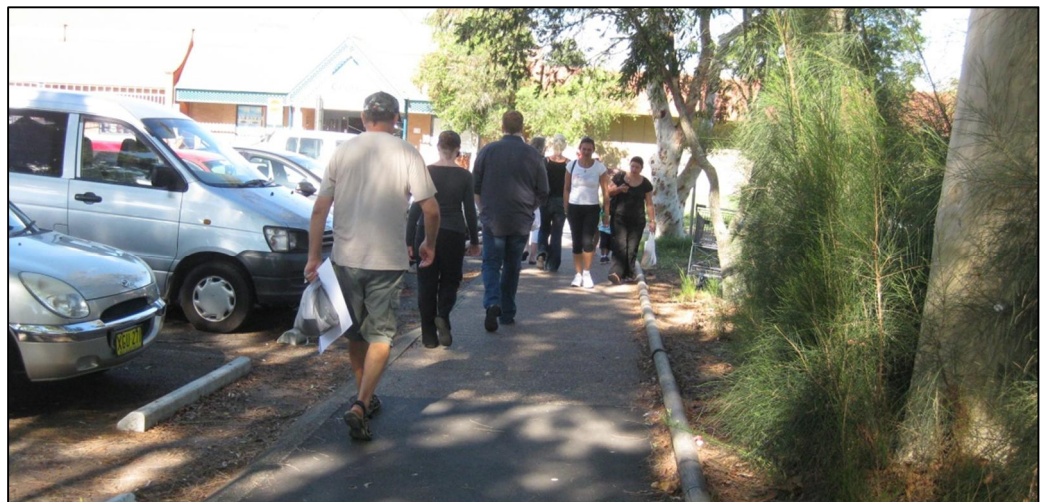
Source: Port Stephens Council

3.7.2 Pedestrian Desire Lines

The main pedestrian desire line in Raymond Terrace is the link between Centro and Marketplace. There is a relatively high demand for this route, as shown in the images below. During busy periods, the width provided for the walkway through the Centro car park is inadequate (as can be seen in the second photo below).



Pedestrian crossing on William Street between Raymond Terrace Marketplace and the walkway leading to Raymond Terrace Centro.



Pedestrian walkway through car parking area of Raymond Terrace Centro.

3.7.3 Summary of Findings

While the pedestrian facilities through Raymond Terrace town centre are generally sufficient to meet current requirements, the following deficiencies have been observed:

- ▶ The rear-to-kerb car parking arrangements generally provided on a number of key streets in the town centre contribute to a general environment of vehicle exhaust pipes facing footpaths, leading to some extent to an unpleasant walking environment;
- ▶ The main pedestrian desire line between Marketplace and Centro passes through private property. It is not clear whether conditions of consent for development approval can ensure that the section on the south side of William Street can be accessible all day;
- ▶ The pedestrian facility along this main desire line through the surface car park leading to Centro is constricted during peak periods;
- ▶ There are no cycleways or shared paths that link areas to the north and the south of the town centre. The Draft FCS indicates a proposed shared path linking William Bailey Street with the Sports Field development. It does not extend south of the Sports Field site;
- ▶ The existing shared path crossing on William Bailey Street presents a safety issue for cyclists / pedestrians;
- ▶ Pedestrian crossing opportunities on Adelaide Street are provided on the signalised intersections (Glenelg Street, William Street and William Bailey Street). The widths that pedestrians need to cross are considerable, given that these intersections are provided with left-turn and right-turn lanes, resulting in a need to cross a width equivalent to seven (7) lanes;

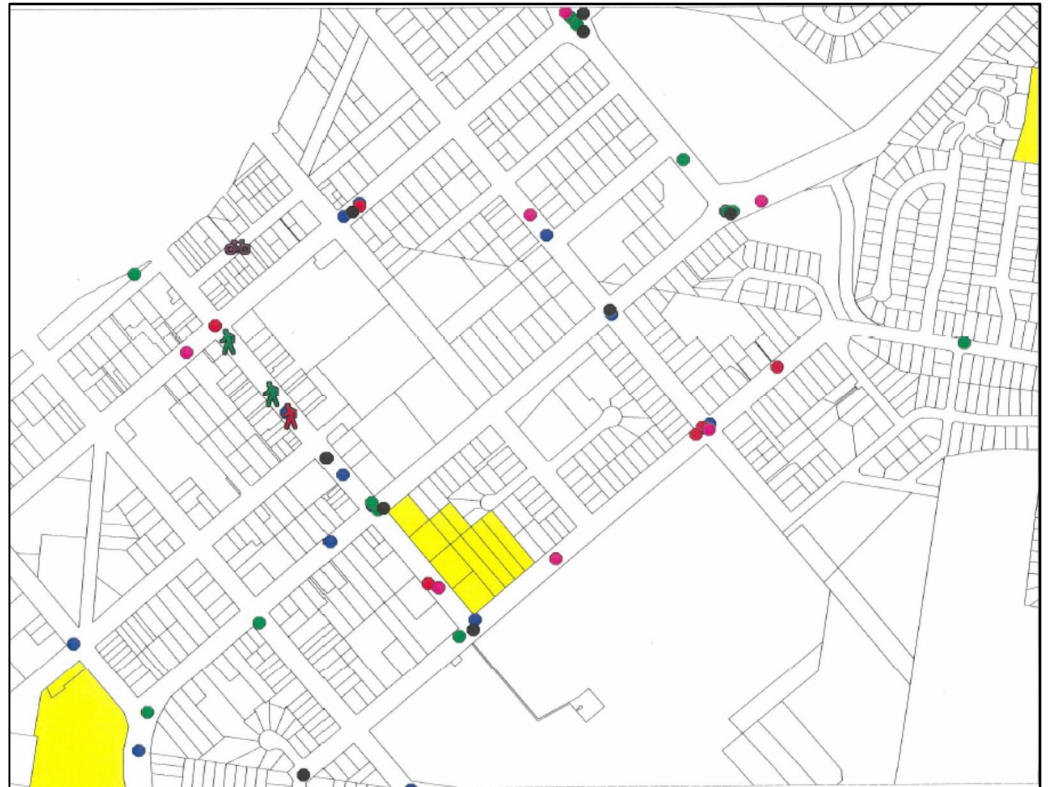
3.8 Road Safety

Road crash data from the RTA for the five-year period 2005-2009 indicate the following “hotspots” where a concentration of vehicle crashes were recorded:

- ▶ Port Stephens Street-William Bailey Street-Newline Road intersection (roundabout);
- ▶ William Bailey Street – Adelaide Street intersection (recently upgraded to signals);
- ▶ Port Stephens Street – Bourke Street intersection (roundabout);
- ▶ William Street – Adelaide Street intersection (signalised);
- ▶ William Street – Irrawang Street intersection (priority-controlled); and
- ▶ Kangaroo Street – Irrawang Street intersection (priority-controlled).

During the five-year period, there were three (3) crashes that resulted in pedestrian injuries or fatalities. Two resulted in a pedestrian being injured in each, and a third recorded crash that resulted in a fatality to one pedestrian and injuries to two other pedestrians. All three crashes involving pedestrians occurred on William Street, between Sturgeon Street and Port Stephens Street.

Figure 11 Road Crashes 2005-2009



Source: RTA through Port Stephens Council

4. Indicators to Achieve Sustainable Accessibility

4.1 Overview

The Transport and Parking Review has been prepared on the basis of managing travel demand through promotion of accessibility by more sustainable modes of transport such as walking, cycling and public transport. The following section presents a range of key indicators to inform the Transport and Parking Improvement Plan for Raymond Terrace.

These transport planning indicators provide a framework for the development and evaluation of the transport and parking improvement options for Raymond Terrace. It is anticipated that these indicators will be refined as part of the process of developing the *Raymond Terrace Growth Centre Strategy*.

These indicators have been grouped according to the following components:

- ▶ Mode Share;
- ▶ Focus on Public Transport Use;
- ▶ Public Transport Quality of Service;
- ▶ Network Planning;
- ▶ Integrating Public Transport and Land Use;
- ▶ Integrating Private Transport and Land Use; and
- ▶ Road Network Performance.

4.2 Mode Share

Journey-to-Work (JTW) data from the ABS and the BTS indicate that in 2006, the car mode share for Raymond Terrace was surveyed to be 94%. The *Lower Hunter Regional Strategy* indicates that “*the historical focus of providing new housing in urban release areas is being reflected in very low levels of public transport usage, increasing congestion on key connecting roads and underutilised infrastructure capacity in some existing urban areas*”.

If the target mode share to public transport is not achieved, a range of interrelated outcomes can be expected, as summarised below:

- ▶ A smaller proportion of all trips will be carried on public transport, resulting in more trips being made in private vehicles and increased investment required in the less efficient private transport system;
- ▶ The public transport network will fall short of its potential to contribute to an efficient and effective access system;
- ▶ The public transport network operations would be less efficient and the public transport system as a whole would be less viable;

- ▶ There would be an increased propensity for traffic congestion in and around the development. This will tend to reduce the amenity of the area and reduce the efficiency of the transport and access network serving it (i.e. increasing its 'operating cost');
- ▶ It will reduce the attractiveness of the area to investors due to poor levels of access;
- ▶ It will reduce the development potential of the area due to the lack of capacity available in its transport and access network and the network into which it integrates; and
- ▶ More space will be needed for car parking.

All of these would be expected to contribute to a negative impact on the value and competitiveness of the Raymond Terrace, particularly as a Major Regional Centre for the Lower Hunter.

4.3 Focus on Public Transport Use

Provision of a public transport system to serve Raymond Terrace will not, by itself, be sufficient to achieve the required mode share to public transport and thus to achieve competitive levels of access for Raymond Terrace. It will be necessary to provide a public transport service that is sufficiently attractive that people *choose* to use it.

If the public transport system were provided in a manner that does not reflect people's requirements, there would be a reduced mode share to public transport, with outcomes as outlined earlier. Transport planning should focus on developing an interconnected network of quality public transport nodes and services that are easily accessed and that respond to the needs of users.

The focus should not be limited to strategic level planning. Planning for development at all levels need to be planned in conscious consideration of the objectives of achieving public transport mode shift targets, and this will ultimately involve all planning and design aspects to encourage people towards the planned shift. Details such as facilities planning and design, fare integration, system integration, operational considerations (e.g. timetable interfaces among different public transport modes), and other measures such as provisions in DCPs limiting parking availability, for example, will all contribute towards achieving the desired outcomes.

Potential considerations include:

- ▶ How easy would it be to find and access public transport?
- ▶ How many transfers would be required?
- ▶ How long would the trip take?

4.4 Public Transport Quality of Service

Public transport services should run on links / corridors that provide public transport with sufficient operational priority to ensure a very high degree of reliability (i.e.

immunity from any foreseeable delays and uncertainties associated with private transport modes) and attractive operating speeds.

A key feature of quality public transport service is frequency. It is understood that current bus services in Raymond Terrace are relatively frequent compared with other centres in the Lower Hunter. However, in view of the principles to promote public transport, and its designation as a Major Regional Centre, consideration for more frequent services to and from Raymond Terrace, as well as expanding service area coverage and potentially weekend services needs to be given to enable public transport to be attractive.

4.5 Network Planning

The *Outer Metropolitan Service Planning Guidelines* (NSW Transport and Infrastructure, 2009) provide for principles in the planning of public transport routes.

The main desire for a bus route network is to achieve a balance between the need for ease of access and minimising travel time. Accessibility invariably relates to proximity to services, and in order to provide a wider coverage, bus routes will tend to be circuitous to achieve this desire. However, the consequent outcome would be longer travel times.

The *Guidelines* prescribe public transport service coverage to built-up residential areas with higher population densities within a 400 metre walk trip to a bus service during the daytime, and an 800metre walk trip to a bus service at night.

The network should be legible, providing clear and simple to understand routes, as well as provide direct service with limited diversions.

4.6 Integrating Public Transport and Land Use

One of the key actions under Transport in the Lower Hunter Regional Strategy is to: “concentrate employment and residential development in proximity to public transport to maximise transport access”.

The *Integrating Land Use and Transport (ILUT)* policy package developed by the Department of Planning sets out objectives and principles that are important in shaping the transport strategy for urban developments, such as Raymond Terrace. The ILUT principles embody three principal aims:

- ▶ Increased access to public transport, walking and cycling;
- ▶ Encourage people to travel shorter distances and make fewer trips; and
- ▶ Reduce car dependency.

The promotion of public transport use needs to be integrated with measures to reduce car dependency, and can be achieved by planning for efficient locations, densities and facilities for main trip generators and maximise access to public transport services.

The provision of bus services in the Hunter Region would be in various level of public transport hierarchy: regional routes, district routes, and where required, local routes. These bus services will need to be integrated with the broader public transport network servicing Raymond Terrace and the surrounding areas, and providing access to the region.

4.7 Integrating Private Transport and Land Use

In addition to measures integrating land use planning with public transport encouragement, influencing private transport demand can also be achieved through land use integration. Foremost of this is the use of parking as a travel demand management tool.

Each private vehicle trip starts and ends with parking. It is an inherent component of the private vehicle trip and is a strong influence in mode choice. Land use integration will require that the provision of parking needs to be investigated and considered. The availability of free or cheap parking will encourage more car trips regardless of the availability of public transport.

This means that development authorities would need to influence parking availability either through actual limits on provision (i.e. maximum parking instead of the traditional minimum rates), cost of parking, and time restrictions.

Where appropriate, compatible land uses can be co-located such that non-conflicting parking provision can be shared.

4.8 Road Network Performance

One indicator of the robustness of the transport strategy for Raymond Terrace will be the overall performance of the road network in satisfying the levels of travel demand. However, attaining acceptable vehicle flow levels of service along road corridors and at intersections will need to be balanced with the overall accessibility and movement levels for the development.

There inherently will be areas of conflict between vehicle flows attributing to better road network performance, and continuity and directness of access for pedestrians, cyclists and public transport users, either in locational or temporal aspects. The desires for a better-performing road network will need to be balanced with the other transport objectives for Raymond Terrace.

4.9 Summary of Indicators

Table 3 below shows a summary of the transport planning indicators discussed.

Table 3 Transport Planning Indicators

	Metric	Indicators
1	Mode Share	<p>Adopt a minimum public transport mode share target (all trips), with the target to be agreed with the Department of Planning and Infrastructure and the Department of Transport.</p> <p>In line with the NSW State Plan 2010, it is suggested that a public mode share of 10% be set as a target.</p> <p>Future bus network reviews should take this target into account.</p>
2	Focus on people using public transport	<p>The planning of the public transport system should reflect the needs and expectations of the people who are going to choose to use it. This entails a fundamentally different approach to planning for traffic.</p>
3	Public transport quality of service - reliability and speed	<p>The <i>Service Planning Guidelines</i> for buses provides the following guidelines relevant to bus operating frequency and travel times:</p> <ul style="list-style-type: none"> Regional routes: 30-60 minutes travel time; 10-25 km in length; can operate on strategic transport corridors. District routes: link residential areas to the nearest district centre and a strategic transport corridor, or another mode or node, that operates to the nearest designated centre. <p>With growth in Raymond Terrace and in the surrounding precincts, demand-based frequency changes should be investigated regularly, following the guidelines.</p>
4	Network planning	<p>Public transport routes within Raymond Terrace should link to key transfer nodes and trip generators in the surrounding region. This includes other growth centres within Port Stephens LGA, nearby major regional centres (Maitland), and Newcastle Regional City.</p> <p>Load balancing provides a useful indicator of one aspect of network operations. Appropriate levels of load balancing on transport networks (arterial roads and first and second tier public transport) by structuring the transport-land use system such that a broad range of land uses are served by the transport network.</p> <p>A target ratio of peak to counter-peak loads of better than 60:40 would be appropriate).</p> <p>Special attention needs to be paid to the public transport network, which will need to provide frequent and fast services reliably and efficiently. With quality of service being equal, minimisation of fleet size is a worthy indicator of public transport network operations.</p>
5	Integration of public transport with land use	<p>Public transport corridors should run <i>through</i> the core of development parcels.</p> <p>Focus highest intensity land uses around the primary public</p>

	Metric	Indicators
		<p>transport network such that 90% of the potential passenger catchment is within a 400 metre radius of a stop.</p> <p>Note: because passenger catchments are calculated in consideration of development intensities, the area of public transport catchments calculated using the above measure could well equate to significantly less than 90% of the total land area.</p>
6	Integration of private transport with land use	<p>Arterial roads should run <i>around</i> development parcels. Land uses requiring high levels of vehicular access should be located along the arterial road network. Access to major parking facilities should be located on the arterial road network, or at least along routes that do not conflict with key pedestrian and cyclist corridors.</p>
8	Road network performance	<p>Standards of service for strategic road network planning of the Raymond Terrace road network relate to:</p> <ul style="list-style-type: none"> Protection of residential areas from through traffic intrusion Provision of an orderly and legible road network Provision of adequate capacity to meet reasonable community expectations on the higher order traffic carrying roads. <p>The first two issues are addressed by developing an orderly road hierarchy with specific design standards and target maximum traffic loads related to each road type within the road hierarchy.</p> <p>The issue of adequate capacity on the major road network is addressed by defining acceptable levels of service (volume to capacity ratios)</p> <p>Target maximum volume / capacity for road links set to 0.8. The minimum acceptable level of service standards for intersections Level of Service D.</p>

5. Road Network Strategy

The following section outlines the Road Network Strategy to provide an attractive, efficient and safe road network for all users.

5.1 Local Road Network Issues

The key road network issues in Raymond Terrace relate to:

- ▶ Road hierarchy – defining the hierarchical structure of the town centre street network in the context of the Pacific Highway bypass, the role of Raymond Terrace as a Major Regional Centre, and major planned developments (i.e. Kings Hill, Heatherbrae, Medowie and Wallalong);
- ▶ Road cross-section/layout – assessment of the appropriateness of current road cross-section layouts for the key streets in the town centre in light of changing roles, functions and priorities; and
- ▶ Traffic management – identify measures that would assist in achieving road network development and integrated transport objectives.

5.2 Road Network Task

The key elements in formulating the Road Network Strategy are provided below:

- ▶ Provides an integrated approach to road network planning and management across the various categories of roads such as local, regional, state and national roads;
- ▶ Recognises the different roles that various roads perform and provides specific controls or objectives for each type of road environment;
- ▶ Understands the function of roads can vary along their length according to movement and access functions, and therefore objectives and tools for management should also vary;
- ▶ Manages the competing demands for access to the road network, from pedestrians, cyclists, public transport services, commercial trips and personal trips, which can be local, sub-regional or regional in nature;
- ▶ Where possible, segregates user classes across the road hierarchy, which will generally aid in maintaining the efficiency and safety of the road environment for all users; and
- ▶ Provides a structured approach to road network development that recognises the changing role the roads within Raymond Terrace will play, as the centre becomes increasingly urbanised in fulfilment of its role and function as a major regional centre for the Lower Hunter.

In order to achieve these goals, it is recommended that Port Stephens Council develop an integrated road network strategy that will ensure important roads serving Raymond

Terrace are developed and managed in a way that achieves the approach outlined above.

5.3 Road Network Principles

The Road Network Strategy has been developed with the following planning principles.

5.3.1 Providing for Significant Land Use Changes

It is recognised that while Raymond Terrace has traditionally been the primary service centre for Ports Stephens LGA, its role as a Major Regional Centre under the Lower Hunter Regional Strategy requires it to accommodate a proportionate share of the target population and employment increases. Particularly as a regional centre, it is expected that Raymond Terrace will accommodate a larger share of the employment targets.

These will result in significant changes in land use that will affect the demand for transport, specifically road transport. Developments in surrounding growth centres such as Kings Hill, Medowie and Wallalong will create additional travel demand to and from Raymond Terrace as the Major Regional Centre.

5.3.2 Protecting the Regional Role of Higher-order Roads

Raymond Terrace lies along the heavily-used Pacific Highway corridor. The Heatherbrae bypass has contributed to minimising through traffic through the town centre, although sub-regional traffic still need to use Adelaide Street to access other centres in Port Stephens and neighbouring LGAs, which will likely still use William Bailey Street linking with Newline Road, Seaham Road and Richardson Road (via Adelaide Street north).

These routes provide significant regional movement opportunities between major centres and to the Pacific Highway.

In the town centre, it is appropriate to slow traffic to match the surrounding land use environment. This has already resulted in speed restrictions of 40-50 km/h. A range of tools can be introduced to further slow traffic in the town centre, including narrowed lanes, reduced number of lanes, gateway treatments, provision for kerbside parking, frequent intersections as well as speed enforcement strategies.

5.3.3 Providing for Pedestrians, Cyclists and Public Transport

There is now a greater recognition in the community that roads are transport corridors that must provide for a range of uses in addition to private vehicle traffic. Prioritisation of infrastructure for pedestrians, cyclists and public transport is required for a range of reasons including providing for greater equity, lower environmental impacts and creation of sustainable and attractive neighbourhoods.

As roads are upgraded within Raymond Terrace, and as traffic growth leads to congestion, the need for alternative facilities for pedestrians, cyclists and public transport will become even more pressing.

5.3.4 Maintaining Safety and Amenity on Local Roads

The traditional role for local government with respect to road transport has been in relation to local roads. This role is a vitally important part of the integrated transport approach.

On local roads, the key objective will be the ability to provide for local accessibility while maintaining a safe and attractive urban environment. This is achieved through a variety of approaches including adequate network planning, maintenance and where required, traffic calming.

5.4 Strategy R1 – Revised Road Hierarchy

Revise the existing road hierarchy based on functional classification focusing on vehicular movement, to incorporate consideration of integrated transport and land use objectives and to assist with network planning and development control.

5.4.1 Approach

The traditional road hierarchy is based into a functional system that categorises roads in terms of their traffic function. This predicated a focus on vehicular movement. Categories include arterial roads, sub-arterial roads, collector roads and local roads. Together, the functional hierarchy address the vehicular movement requirements for an area. In general, the higher order roads are deemed to have a predominant “traffic function” while the lower order roads have a predominant “access function”.

It has been argued that this approach considers the needs of motor vehicle traffic dominating the planning, design and management of roads at the expense of other user groups². As an example, clearways on arterial roads accommodate the traffic function of these higher order roads, while provision for cycle lanes, pedestrian crossings and local shop parking may be removed or restricted in the interest of network efficiency.

Integrated Corridor Approach

An alternative approach to the traditional functional road hierarchy has been suggested by Prof. Hans Westerman³ in his publication “*Cities for Tomorrow – Integrated Land Use, Transport and the Environment*” (Austroads, 1998). A two-dimensional approach to hierarchies is proposed:

- The transport-access function, categorised as:
 - Type 1: Transport function dominant;
 - Type 2: Mixed transport and land use environment functions; or
 - Type 3: Environment function dominant; and

² Brindle, R. E., 1996. *Road Hierarchy and Functional Classification*, in K Ogden & S Taylor (Eds.). *Traffic Engineering and Management*, Institute of Transport Studies, Monash University, Melbourne.

³ Westerman, H.L., 1998. *Cities for Tomorrow – Integrated Land Use, Transport and the Environment*, Austroads.

- ▶ A land use access environment, which can be categorised as:
 - Type A: Pedestrian environment;
 - Type B: Vehicle access; or
 - Type C: Limited access.

This classification system is illustrated in Table 4.

Table 4 Integrated Corridor Classifications

Access Environment	Dominant Function		
	Transport (Type 1)	Mixed (Type 2)	Environment (Type 3)
Pedestrian Access (Type A)	-	Type 2A	Type 3A
Vehicle Access (Type B)	Type 1B	Type 2B	Type 3B
Limited Access (Type C)	Type 1C	Type 2C	-

Type 1A and Type 3C corridors would generally not be found in typical road environments and thus are not shown in Table 4.

Type 1, Type 2 and Type 3 corridors can often be aligned with the more typical road classifications of arterial, sub-arterial, and local roads, respectively.

Advantages to this approach include:

- ▶ The road environment needs of pedestrian-focused corridors versus vehicle-focused corridors can be recognised and planned for;
- ▶ It provides a mechanism for road corridors that change their function during peak and non-peak periods or along their length;
- ▶ It provides an approach to classify and manage road environments in strong correlation with their surrounding land use environment; and
- ▶ It provides a transparent approach for management of “intermediate” or Type 2 roads where competing demands for road space and function can otherwise lead to unbalanced management strategies that can be to the detriment of non-car users.

5.4.2 Components

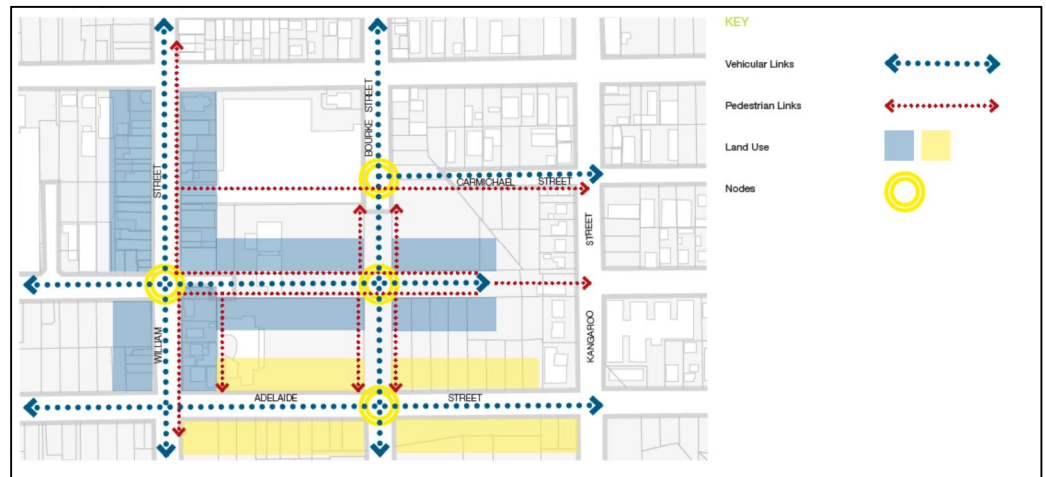
With the adoption of the Integrated Corridor Approach for defining the road hierarchy for Raymond Terrace, the following hierarchy is proposed. Figure 12 shows these graphically.

- ▶ Type 1B – Transport function dominant with vehicle access focus:
 - Adelaide Street north east of William Bailey Street;
 - William Bailey Street;
- ▶ Type 1C – Transport function dominant with limited access:
 - Pacific Highway (not shown in Figure);
- ▶ Type 2A – Mixed transport and land use environment functions with focus on pedestrian access:
 - Irrawang Street;
 - Port Stephens Street between Bourke Street and William Bailey Street;
- ▶ Type 2B – Mixed transport and land use environment functions with focus on vehicle access:
 - Adelaide Street south west of William Bailey Street.
- ▶ Type 2C – Mixed transport and land use environment functions with limited access focus:
 - Newline Road (north of William Bailey Street);
- ▶ Type 3A – Environment function dominant with focus on pedestrian access:
 - Port Stephens Street between Swan Street and William Bailey Street;
 - Swan Street;
 - Glenelg Street north west of Adelaide Street;
 - William Street;
 - Sturgeon Street, including extension through Sports Field site;
 - Bourke Street East;
 - King Street;
- ▶ Type 3B – Environment function dominant with focus on vehicle access:
 - Hunter Street;
 - Kangaroo Street;
 - Carmichael Street;
 - Sturgeon Street north of Kangaroo Street;
 - Bourke Street West, including extension through Sports Field site; and
 - Peter Dron Street.

5.5 Strategy R2 – Street Network Connectivity

Complete missing links to the grid road network. i.e. Sturgeon Street and Bourke Street.

Figure 13 Sports Field Master Plan Connectivity



Source: *Raymond Terrace Sports Field Master Plan* (PSC, 2011)

5.5.1 Approach

The street connectivity strategy follows the framework developed using general principles for street connectivity outlined in the *Draft Centres Design Guidelines* (Department of Planning, 2011), and the opportunities provided by the redevelopment of the Sports Field site.

5.5.2 Components

- ▶ Extend Sturgeon Street through Sports Field site between William Street and Kangaroo Street, in line with *Sports Field Master Plan*;
- ▶ Reconfigure Sturgeon Street South, its extension to Kangaroo Street through the Sports Fields and connecting with Sturgeon Street North as a “green” corridor catering to pedestrian and cycling connectivity from south west to north east (Type 3A in Integrated Corridor Approach);
- ▶ Improve existing section of Sturgeon Street between Kangaroo Street and William Bailey Street to provide consistency with sections south of Kangaroo Street. It is noted that the Sports Field Master Plan indicates a road through the car park on the ground level, and a pedestrian-oriented access road on the podium level;
- ▶ Extend Bourke Street West through the Sports Field site between Carmichael Street and Adelaide Street, in line with *Sports Field Master Plan*;
- ▶ Consider a priority control for the Sturgeon Street – Bourke Street intersection within the Sports Field site. While priority for vehicular traffic flow at the intersection preferably should be given to Bourke Street over Sturgeon Street, the

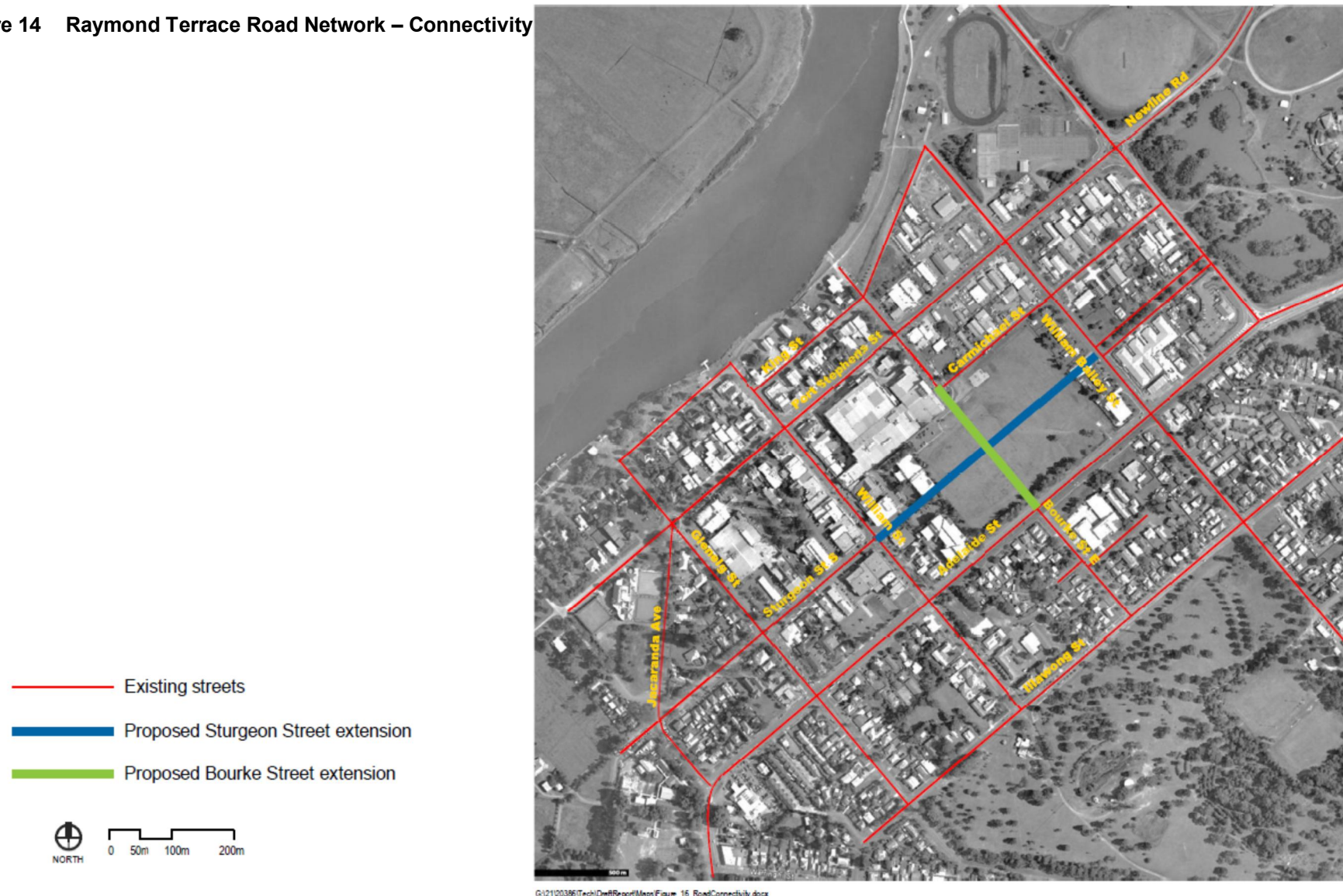
approaches to the intersection should be traffic calmed, with kerb extensions and pedestrian crossings provided;

- ▶ Reconfigure the Bourke Street – Adelaide Street intersection to a signalised intersection allowing full turning movements, including right turn from Adelaide Street southbound into Sports Field site. This will serve as the main access to the car park from Adelaide Street;
- ▶ Extend Carmichael Street between existing cul-de-sac and Bourke Street, in line with *Sports Field Master Plan*;
- ▶ Reconfigure Swan Street-Jacaranda Avenue-Sturgeon Street intersection and Jacaranda Avenue-Glenelg Street-Port Stephens Street intersection (oval roundabout) to further emphasise grid orientation to focus access to the southern part of town centre along Swan Street. The reconfiguration options need to strengthen the Swan Street – Port Stephens Street corridor and minimise through traffic on Jacaranda Avenue.
- ▶ The reconfigured intersections will also potentially enhance the appeal of Jacaranda Avenue as a pedestrian / cycleway corridor; and
- ▶ Support the network with strategically-located way-finding markers and street signs.

The proposed road connectivity strategy for Raymond Terrace is shown in Figure 14.

Recommendations on reconfiguring Adelaide Street-William Street and Adelaide Street-Glenelg Street intersections are listed under Strategy R3 – Adelaide Street Improvements.

Figure 14 Raymond Terrace Road Network – Connectivity



5.6 Strategy R3 – Adelaide Street Improvements

In consultation with the Roads and Traffic Authority, consider improvements for Adelaide Street reflective of its role in the road hierarchy catering to mixed land use and transport environments, with a dominant traffic function (Type 2B).

5.6.1 Approach

The role of Adelaide Street in Raymond Terrace is to provide the principal vehicular access and cater to through sub-regional traffic. However, the hierarchy should recognise its mixed function that needs to balance this traffic function with its land use environment function in consideration of opportunities to integrate them with the town centre.

The design principles incorporated within Figure C1.4 of the *Port Stephens Development Control Plan (2007) – C1: Raymond Terrace Town Centre* indicate a concept reconfiguration of the William Street – Adelaide Street intersection showing kerb extensions to decrease pedestrian crossing distances. These principles have been considered in the proposed improvements to Adelaide Street.

It is noted that the RTA would need to be consulted due to possible impacts on the operation of the traffic signals, as all traffic signals in NSW are the responsibility of the RTA.

5.6.2 Components

- ▶ Retain two through traffic lanes per direction between Glenelg Street and William Bailey Street;
- ▶ Retain existing parallel kerb-side car parking configuration where currently provided, except at approaches to and departures from Glenelg Street and William Street intersections;
- ▶ Reconfigure Adelaide Street-William Street intersection with kerb extensions and removal of exclusive left turn bays, to decrease pedestrian crossing distances. (A concept level sketch is shown in Figure 15)⁴. The traffic impacts of this proposal would need to be investigated in further during the detailed design stage;
- ▶ Reconfigure Adelaide Street-Glenelg Street intersection with kerb extensions and removal of exclusive left turn bays, to decrease pedestrian crossing distances. (A concept level sketch is shown in Figure 16). The traffic impacts of this proposal would need to be investigated in further during the detailed design stage;
- ▶ Introduce gateway markers to Raymond Terrace Town Centre. It is suggested to push out the tree treatment as far as possible to make the entry visible and slow down traffic:

⁴ This is partially indicated in Figure C1.4 of Port Stephens DCP C1 – Raymond Terrace Town Centre.

- ▶ Introduce a pedestrian-crossing to slow down traffic with speed hump so that motorists are made aware of the pedestrian network in the town centre. The gateways also serve as focal points that link up the pedestrian network. Figure 17 shows a conceptual gateway treatment that may be implemented for Adelaide Street. These could be located south of the Glenelg Street intersection and north of the Bourke Street intersection;
- ▶ Convert the Adelaide Street-Bourke Street intersection to a signalised intersection in support of the Sports Field development; and
- ▶ Review signal phasing for the signalised intersections along Adelaide Street in consideration of the intersection layout revisions.

Figure 15 Proposed Kerb Extensions (Conceptual) – Adelaide St-William St Intersection



Map Source: Google Earth

Figure 16 Proposed Kerb Extensions (Conceptual) – Adelaide St-Glenelg St Intersection



Map Source: Google Earth

Figure 17 Conceptual Gateway Treatment for Adelaide Street



Source: GHD/Urbis, 2011

5.7 Strategy R4 – William Street Improvements

Reconfigure William Street to reinforce its role as the “Main Street” of Raymond Terrace town centre.

5.7.1 Approach

William Street functions as the “main street” of Raymond Terrace, accommodating bulk of the retail and service establishments that attract trips to the town centre. It is likely that William Street will continue to be the focal point of the town centre as it grows even further as a Major Regional Centre. However, the existing configuration of William Street needs to be improved in line with design and planning principles in order to attract a higher share of public transport, walking and cycling trips.

The current physical design, particularly its vertical profile, needs to be upgraded in order to address safety issues. The configuration of kerbside parking spaces gives the feeling of a highly car-dominated centre, and would need to be rearranged to lessen its visual intrusion.

5.7.2 Components (Options)

- ▶ Install wheel stops for the angle parking spaces along William Street to address the cross-fall issue on the road profile;
- ▶ William Street Reconfiguration Option 1 – introduction of central median to offset grade difference, with a combination angle and parallel parking. (Figure 18);
- ▶ William Street Reconfiguration Option 1B – Similar to Option 1, but with angle parking first then parallel parking in the direction of travel;
- ▶ William Street Reconfiguration Option 2 – introduction of central median to offset grade difference, with kerbside parallel parking. (Figure 19);
- ▶ William Street Reconfiguration Option 2B – Similar to Option 2, but with provision of nose-in angle parking in central median;
- ▶ William Street Reconfiguration Option 3 – introduction of central median to offset grade difference, with 90-degree angle parking provided in central median. (Figure 20); and
- ▶ William Street Reconfiguration Option 3B – similar to Option 3, but provide additional parallel parking along part of median.

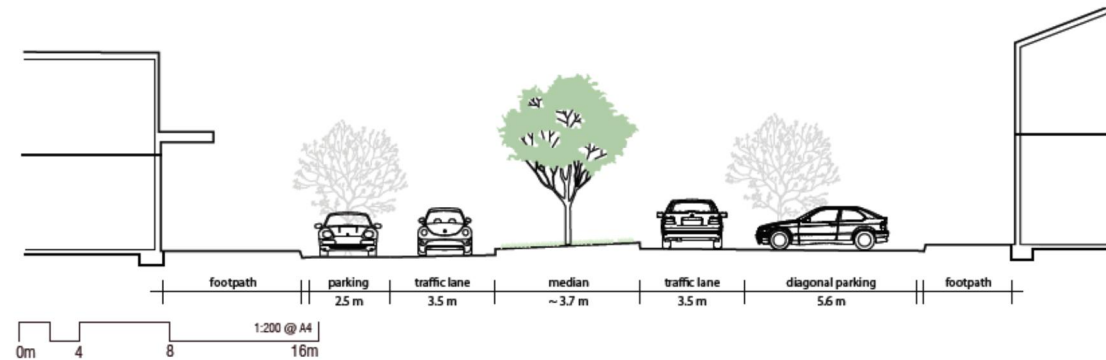
In order to further enhance its role in the hierarchy and enhance its pedestrian orientation and focus, consideration needs to be given to replace the existing roundabout intersections at Sturgeon Street and Port Stephens Street to signal control, in order to enhance opportunities for safe pedestrian crossing. This need will be more pronounced in the medium- to long-term. The impacts of removing the roundabouts in terms of facilitating U-turns would also need to be investigated.

Figure 18 William Street Reconfiguration – Option 1

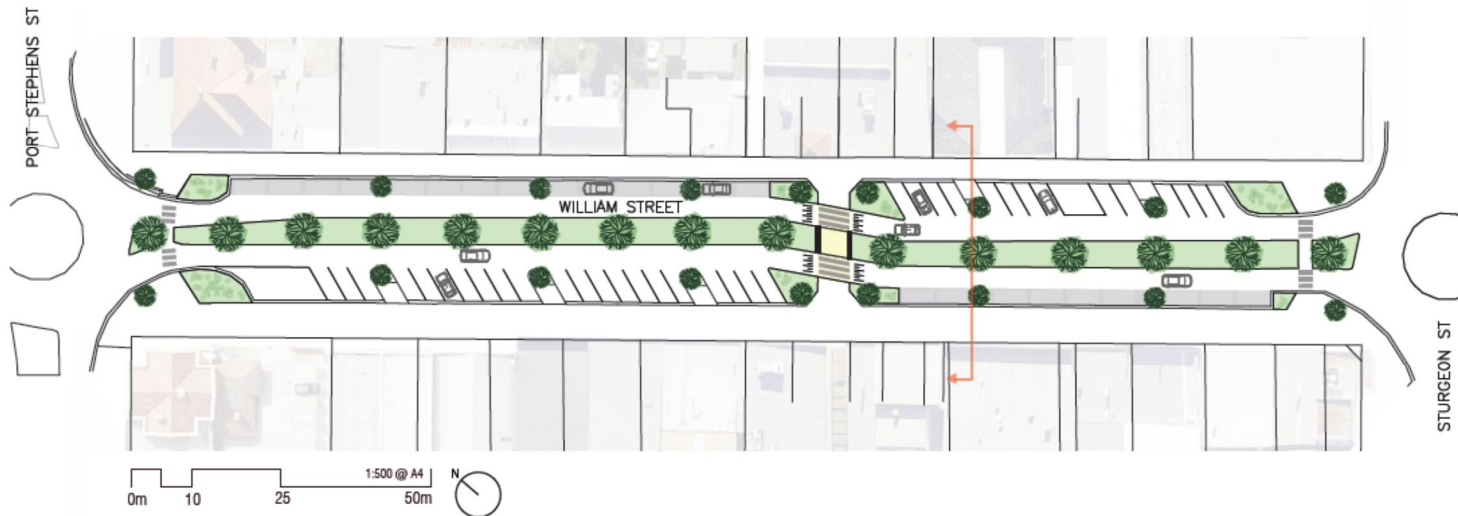
Parallel / Diagonal Combination

- existing 74
- new estimate 58
- loss of 16 spaces

Option 1B > mirror image i.e. angle then parallel in direction of travel.

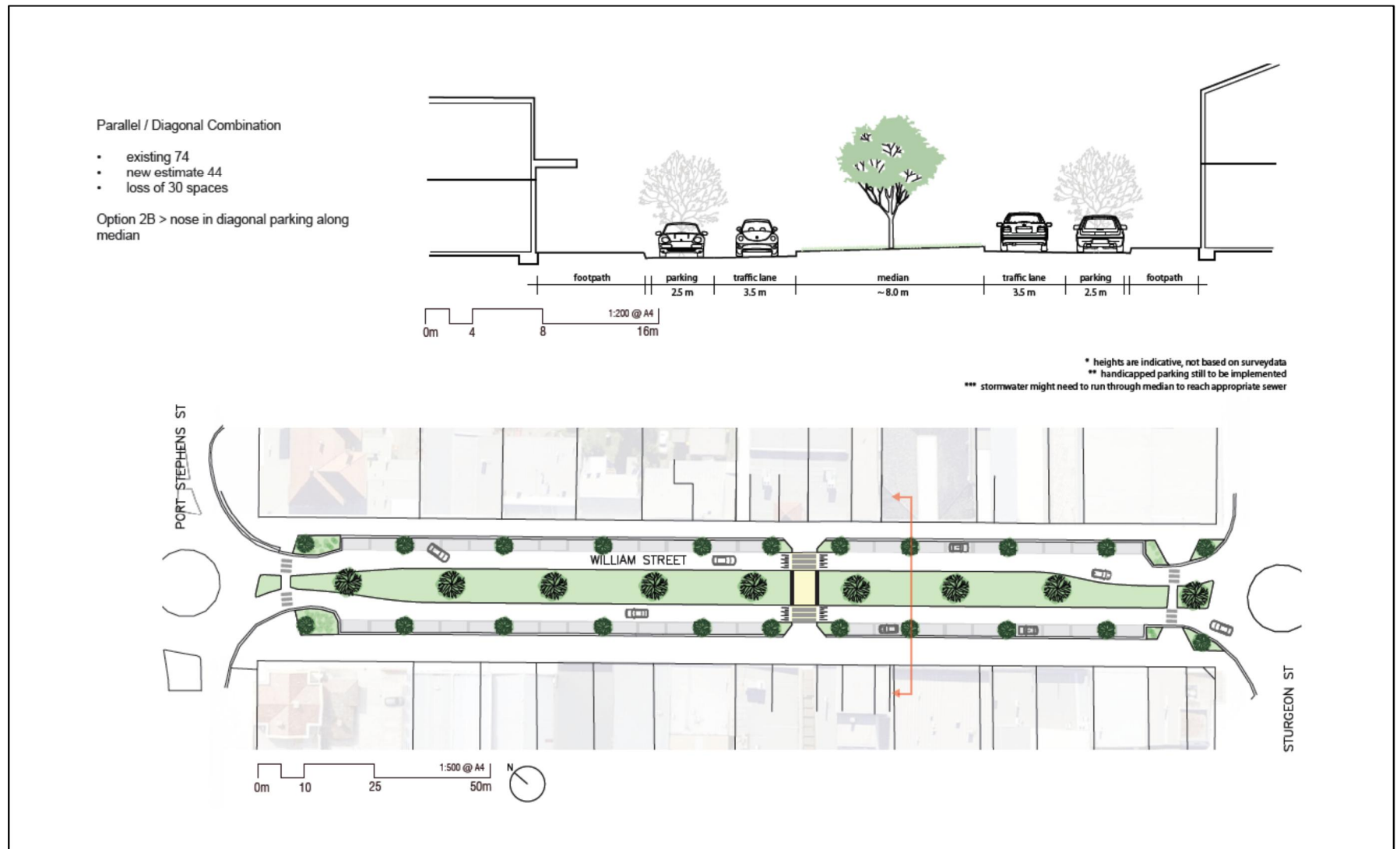


* heights are indicative, not based on survey data
 ** handicapped parking still to be implemented
 *** stormwater might need to run through median to reach appropriate sewer



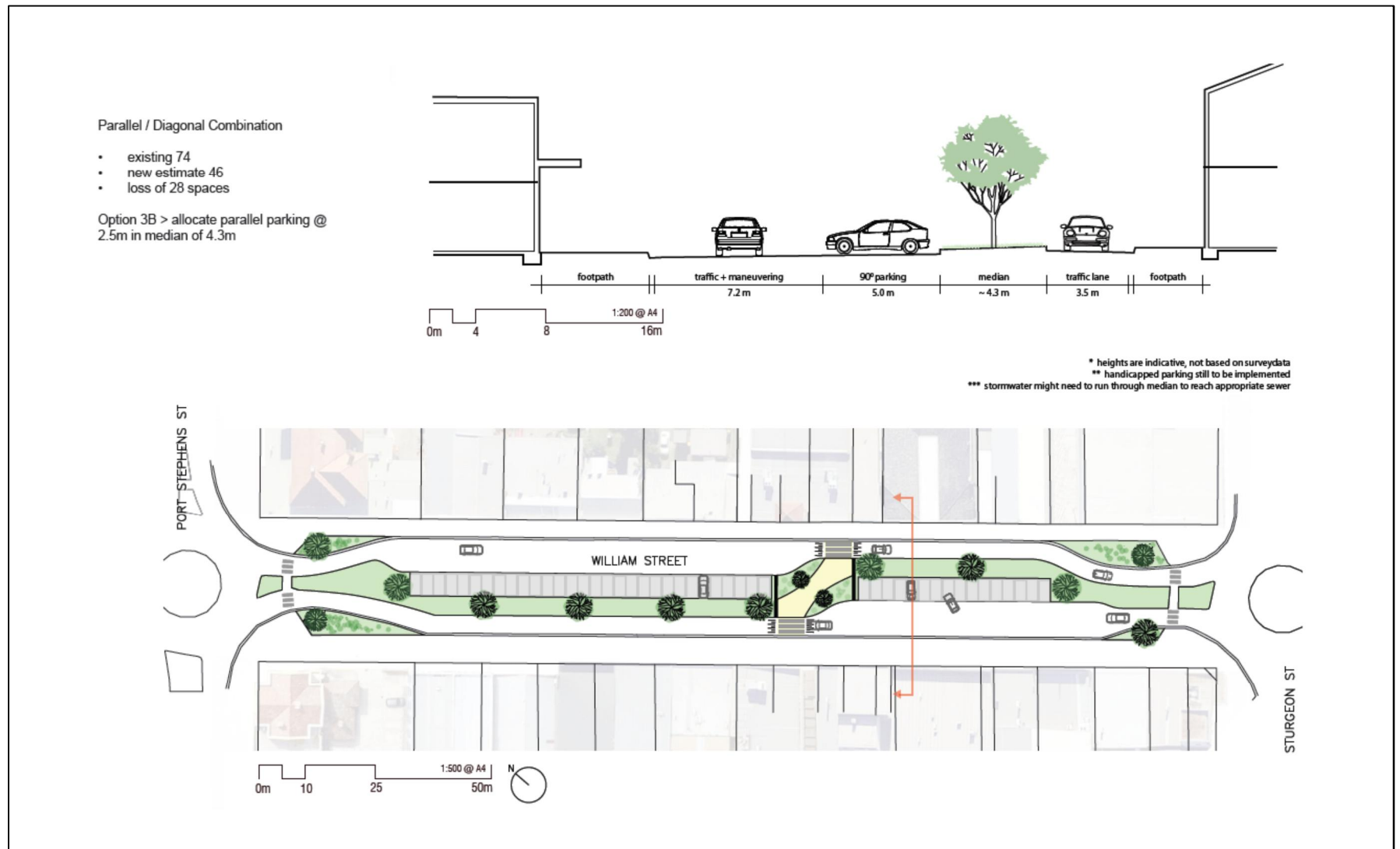
Source: GHD/Urbis, 2011

Figure 19 William Street Reconfiguration – Option 2



Source: GHD/Urbis, 2011

Figure 20 William Street Reconfiguration – Option 3



Source: GHD/Urbis, 2011

5.8 Strategy R5 – Port Stephens Street Improvements

Reconfigure Port Stephens Street considering the different roles and functions each section has in the road hierarchy of Raymond Terrace.

5.8.1 Approach

The strategies for Port Stephens Street relate to the role and function each section of the will play in the street network and hierarchy of the town centre.

Port Stephens Street functions as a secondary “intra town centre” street which provides linkages throughout the length of the town centre. It serves as an alternate access to the town centre from both the north (via William Bailey Street) and the south (via Glenelg Street).

Port Stephens Street has three distinct cross sections reflecting the three differing characteristics of traffic: low-speed pedestrian-dominated environment in the south, a vehicle-dominated road with a wide expanse of carriageway and median turning lanes in the north, and the divided carriageway in the middle catering to a mix of commercial and residential uses.

Port Stephens Street provides the opportunity to function as a key vehicular access node from the north, particularly with the growth in Kings Hill which would access the town centre via Newline Drive or via Adelaide Street north. With the development of the Sports Field site, the traffic function of the northern section needs to be strengthened, to feed into the new development via Bourke Street West.

5.8.2 Components

- ▶ Retain existing cross section of Port Stephens Street between Glenelg Street and William Street;
- ▶ Provide speed tables as traffic calming measures on the Glenelg Street and William Street ends;
- ▶ Reconfigure cross section of Port Stephens Street between William Street and Bourke Street to replicate existing cross section between Glenelg Street and William Street;
- ▶ Convert existing central turning lanes between Bourke Street and Kangaroo Street into a planted median strip; and
- ▶ Consider converting rear-to-kerb angle parking between Bourke Street and Kangaroo Street to parallel parking.

6. Parking Strategy

This section recognises the competing demands for car parking and sets out a Parking Strategy to manage the use of parking to improve overall accessibility, manage traffic levels and reduce traffic impacts.

6.1 Local Parking Issues

The key issues relating to parking in Raymond Terrace town centre include:

- ▶ Physical configuration / profile of William Street kerbside parking – the cross-section of William Street creates issues with regard to the cross fall for angle parking, particularly with the rear-to-kerb arrangement. There are safety concerns with regard to vehicles backing onto the footpath. There has already been one pedestrian fatality recorded wherein a vehicle backed onto the footpath and struck a pedestrian;
- ▶ The configuration of key off-street parking access via Port Stephens Street may likely contribute to the perception of high volumes of through traffic and concerns about pedestrian safety. Even if through traffic is discouraged, the configuration of parking access may continue to contribute to relatively high volumes of car movements;
- ▶ The development of the Sports Field includes provision for more than 1,400 car parking spaces, which is intended to cater to the parking demand not only of the development, but also of other developments in the town centre. The impacts of the traffic generated by this significant car parking area needs to be considered in more detail as design progresses;
- ▶ Opportunities for shared parking need to be investigated to assess the quantum of kerbside car parking spaces that may be made redundant with the Sports Field car park development; and
- ▶ Future parking strategies need to consider progressive restrictions (time limits, pay parking) if objectives of reducing dependence on private car travel are to be achieved.

6.2 Parking Task

The key elements in formulating the Parking Strategy for Raymond Terrace are provided below:

- ▶ Respects the local parking needs and balances them with the needs of the surrounding areas;
- ▶ Recognises that as the intensity of development increases, it will not be possible to meet unrestrained parking demand in some parts of the town centre;

- ▶ Reflects the strong potential for parking to be a travel demand management measure and an important part of a package of measures to improve overall accessibility, manage traffic levels and reduce transport impacts; and
- ▶ Extracts the highest value out of parking facilities – especially if on public or council owned land. This includes:
 - Recognising that parking in the public domain is not an entitlement, but rather a resource to be managed and distributed within the community;
 - Removing hidden subsidies associated with “free” or discounted parking - i.e. more equity in transport/access;
 - Recognising that the cost of parking is a useful tool for meeting the transport aims of the area; and
 - Recognises the current evolution in the land use of Raymond Terrace (from town centre to major regional centre) and how this evolution will affect the communities’ expectations with respect to parking provision and management. For example, the community has traditionally expected parking availability where and when desired. With higher degrees of urbanisation, there needs to be an expectation that parking will be restricted and could involve direct costs to users.

It will therefore be necessary for Port Stephens Council to develop a regional parking framework (and associated controls) that will best achieve the transport and accessibility aspirations of Raymond Terrace.

6.3 Parking Principles

6.3.1 Parking User Types

The different types of parking users are described in Table 5 below.

Table 5 Parking User Types

User Type	Description
On-street, Short-stay	<p>Location: Public roads</p> <p>Configuration: On-street parking</p> <p>Main Users: Short-term visitors</p> <p>Limits: Short stay, 15 mins to 2 hours</p> <p>Control: Enforcement, and / or time-based pricing (parking meters)</p> <p>Ownership: Public / Council</p>
Commercial Parking	<p>Location: Close to commercial areas, preferably in a location with good road access that will minimise traffic in the central area looking for parking (cruising).</p> <p>Configuration: At grade or multi-deck parking facilities. Should be configured to serve as a <i>shared</i> parking facility to serve surrounding land uses.</p> <p>Main Users: Medium term visitors (including shoppers)</p> <p>Limits: Short - medium stay, ½ hour to 6 hours.</p> <p>Control: Access control and/or time-based pricing.</p> <p>Ownership: Council (may be privately operated) or privately-owned.</p> <p>Comments: <i>While such facilities could be at-grade in the short term, ideally they will be incorporated into future development / re-development in such a way that provides high quality urban design and traffic outcomes.</i></p>
Commuter Parking (public transport) This will be an important consideration for the future when the Raymond Terrace Major Regional Centre becomes a public transport hub for Port Stephens LGA.	<p>Location: Up to 400 m from main interchange, although preferably away from the central (commercial) area. In locations with good road access that will minimise impacts on surrounding land uses and transport networks.</p> <p>Configuration: At grade or multi-deck parking facilities.</p> <p>Main Users: Public transport passengers.</p> <p>Limits: Long stay, although some provision should be made for public transport users that are not commuters</p> <p>Control: Location of facility should discourage non-public transport users. Otherwise access to facilities could be linked to train passes or controlled through time-based pricing.</p> <p>Ownership: DoT or Council (may be privately operated).</p> <p>Comments: <i>Given the long-stay nature of commuter parking, and where there is competition between commuter and commercial parking, it is appropriate that people using these facilities walk up to 400 m (five minute walk) to access them. User perceptions of safety, security and amenity should be considered in the design of the facility and access to the facility.</i></p> <p><i>Raymond Terrace may not require commuter parking in the short term, but this may be a growing concern in the future, particularly in relation to its role as a Major Regional Centre and NSW State Plan targets for public transport mode shares. Likely users will be Raymond Terrace residents working in other centres (e.g. Newcastle).</i></p>
Local Employee Parking (people who park close to where they work)	<p>Location: At the edge of the commercial area, in locations with good road access that will minimise impacts on surrounding land uses and transport networks.</p> <p>Configuration: At grade or multi-deck parking facilities.</p> <p>Main Users: Employees who drive to work in the commercial area.</p> <p>Limits: Long stay, although some provision should be made for public transport users that arrive throughout the day when long stay parking may be full.</p> <p>Control: Location of facility should not displace short term commercial parking. Otherwise it may be appropriate to encourage parking turnover through time-</p>

User Type	Description
	<p>based pricing.</p> <p>Ownership: Council (may be privately operated) / privately owned.</p> <p>Comments: <i>Given the long-stay nature of employee parking, it is appropriate that people using these facilities walk up to 400 m (five minute walk) to access them. User perceptions of safety, security and amenity should be considered in the design of the facility and access to the facility. Lighting of the path between the car park and the town centre core is an important consideration.</i></p> <p><i>The designation of Raymond Terrace as a Major Regional Centre will have implications in the growth of employee numbers, and consequently demand for staff parking.</i></p>
Leisure Parking (people who undertake sports or leisure activities in Raymond Terrace)	<p>Location: Along the Hunter River bank.</p> <p>Configuration: At grade parking facilities.</p> <p>Main Users: Visitors involved in sports or leisure activities</p> <p>Limits: Long stay.</p> <p>Control: Location of facility can be integrated with existing parking areas.</p> <p>Ownership: Council (may be privately operated) / privately owned.</p> <p>Comments: <i>The netball courts along the north end of Port Stephens Street generally creates weekend parking demand, although during the week is relatively unoccupied. Future shared parking with commuters can potentially be located in this area. Towards the south end of Port Stephens Street, a consolidated shared parking facility that can be used mainly for employee parking during the week, and leisure parking associated with a potential future marina on the Hunter can be located in this area.</i></p>

6.3.2 Parking Demand

The nature of demand for parking is highly dependent on the location and mix of land uses in a particular area. For example, parking demand is usually highest in mixed use areas and at shopping centres, transport nodes and in employment areas. The parking duration for these land uses vary. Shopping trips require short-term parking (one to two hours duration), while parking at transport nodes and employment areas is typically for the duration of the workday. The presence of (all day) commuter parking is sometimes at the expense of higher turnover short stay parking.

Parking must therefore be sensitively located and managed. With these fluctuating demands for parking, a balanced approach is needed that incorporates both local accessibility to nearby shops and other services, whilst also catering for all-day commuter parking.

6.3.3 The Benefits and Costs of Parking

Increasing parking availability can be used as a tool to stimulate activity in centres by improving access to facilities and services. However, widespread car park construction would be costly, add to congestion on the road network and may be to the detriment of nearby centres. Therefore, a common approach is to increase the availability of parking spaces by encouraging greater turnover. This can be achieved by limiting the duration of parking (e.g. to 1-2 hours) or by charging a time-based fee, usually via parking meters.

6.3.4 Parking as Part of an Integrated Transport Strategy

A strategy focusing on the provision and management of parking facilities is necessary in Raymond Terrace to ensure that parking provision and management is linked to other transport strategies.

Parking should be seen as one part of an integrated system to provide access to centres and services, in conjunction with travel by other modes such including public transport, walking and cycling. The impacts of parking and associated traffic generation should also be understood and managed.

Parking demand needs to be considered in the wider context of the LGA, the roads that provide access to potential parking facilities and the availability of alternatives such as public transport. Therefore, the parking provision will depend on the level of road access and the quality of alternative modes of access.

Travellers should be provided with the right information to allow them to modify their travel patterns to take advantage of new parking options or alternative access modes.

In the medium to long term, a reduction in the availability of car parking will encourage the use of alternative modes, resulting in positive effects not only for Raymond Terrace, but for nearby centres as well. However, in order to maintain accessibility, this option is only possible if implemented in conjunction with high quality public transport alternatives.

6.4 Strategy P1 – Develop a Parking Management Plan

Develop a Parking Management Plan for Raymond Terrace defining the goals for parking provision and incorporate a Parking Structure Plan with a hierarchy of users, links to policies and controls, considering current proposals to provide a significant quantum of car parking spaces within the Sports Field development.

6.4.1 Approach

The approach to developing the Parking Plan for Raymond Terrace needs to consider the principles outlined above:

- ▶ Parking user types – differentiate among the separate types of parking users.
- ▶ Level of parking demand;
- ▶ Benefits and costs of parking; and
- ▶ Parking management as an effective land use planning tool to achieve integration with transport planning objectives.

6.4.2 Components

- ▶ As the Sports Field development will provide shared parking facilities, consider removing or reducing on-street car parking spaces, particularly on William Street and Sturgeon Street;

- ▶ As part of the Parking Plan, provide car parking information signs at gateways and entries to the town centre. These signs would ideally provide dynamic (real-time) parking availability information;
- ▶ Consider the opportunity that exists for the development of a satellite car park at the north end of the town centre (in the vicinity of the William Bailey Street – Port Stephens Street intersection). It would ideally be near the playing fields so that shared usage is optimised. It can potentially be integrated with pedestrian and cycling facilities that feed into the town centre, as well as served by buses; and
- ▶ The Parking Plan would need to incorporate the introduction of future pay parking schemes for parking spaces closer to the town centre core.

6.5 Strategy P2 – Consider Maximum Car Parking Requirements

Consider maximum car parking requirements for new development based on accessibility to public transport.

Car parking requirements for new developments are typically based on satisfying peak demand with limited consideration of the potential for trips to be made by public transport. This premise often leads to many more car parking spaces being built than are required during normal conditions. Therefore, it may be appropriate to consider requiring less car parking for new developments in areas with high accessibility to public transport.

6.5.1 Approach

The following steps are recommended to implement this strategy:

- ▶ Identify areas of high accessibility to services and public transport;
- ▶ Consult with other Councils, particularly those with designated Major Regional Centres as well, to determine current practice regarding parking controls for new development in their centres;
- ▶ Assess the suitability of enacting similar changes to development controls in the town centre; and
- ▶ Revise the Development Control Plan on Car Parking as required (e.g. consider a separate DCP chapter specifically for Raymond Terrace Car Parking).

6.5.2 Components

In line with Strategy P2 to consider the availability of nearby public transport services as an opportunity to reduce car parking requirements, the following recommendations are made:

- ▶ Consider revising / lowering parking provision rates for certain individual land uses or development types as it applies to Raymond Terrace town centre (i.e. parking rates for the town centre may require lesser parking spaces compared with parking provision rates for other areas within Port Stephens LGA;

- Consider review of DCP B3 to allow for developments (including residential) to demonstrate opportunities for shared parking to reduce required parking provision.

6.6 Strategy P3 – Alternative Uses for Section 94 Contributions

Consider allowing Section 94 contributions to fund uses other than for constructing car parks.

6.6.1 Approach

In line with sustainable transport objectives, an integrated approach to transport and parking improvement needs to be taken. This considers parking management as a crucial tool in implementing an integrated plan, and the blanket provision of car parking supply only serves to reinforce priorities on private car modes.

6.6.2 Components

Consideration needs to be given, for cash contributions be used for schemes that would reduce car dependency. Alternatively, this consideration can extend to allow developers to demonstrate that schemes that reduce car dependency (e.g. funding public transport or shuttle bus services) are implemented as part of Conditions of Consent for Development Applications, in lieu of providing parking spaces. These will be subject to agreement with Council.

Examples of these measures include community transport services where visitors to a development can access the town centre without need for a private car, or the institution of workplace travel plans which minimise or reduce the need for staff to travel to the town centre by private car, particularly single-occupant private cars.

6.7 Strategy P4 – Shared Parking

Investigate the potential for public or shared parking in place of private parking, to accommodate shared parking for various land uses (e.g. daytime/ night time uses) through development control to maximise efficiency of parking use.

6.7.1 Approach

An alternative approach is to provide a shared parking resource for use by visitors to a range of land uses within an area throughout the day. The benefit of this approach is that more efficient use is made of parking spaces as peak usage times for different land uses may not coincide. For example, during the day shoppers and employees may use shared parking spaces in town centres, but during the evening the parking spaces can be utilised by people dining out or going to the movies. This would result in less parking being required overall, leading to more efficient use of land and lower costs. Another benefit of this approach is that it would be possible for Council to manage parking provision and management in a centre over time. Council could choose to increase or decrease the number of parking spaces depending on the intensity of development, parking demand and alternative access by public transport.

6.7.2 Components

In line with Strategy P1 – Parking Plan, it is crucial to manage the additional car parking supply that the Sports Field development will create.

Council should investigate opportunities to consolidate car parking and remove “redundant” on-street spaces, or otherwise consider more stringent restrictions for them (e.g. shorter durations or pay parking). This will particularly be critical for parking spaces along William Street between Port Stephens Street and Sturgeon Street. This will also potentially “open up” this main street for other uses such as wider footpaths incorporating street dining, bus stops and bus shelters, landscaping and the like.

6.8 Strategy P5 – Sports Field Development Car Parking Facility

Allow for access into the Sports Field Car Park via the Port Stephens Street end of Bourke Street, in addition to the Adelaide Street end.

6.8.1 Approach

Access to the Sports Field car park needs to be structured in a way that allows multiple access locations, preferably away from Williams Street. The approach that needs to be taken is to distribute traffic flows into and out of the car park more evenly, and avoid concentration of traffic activity at the access points.

6.8.2 Components

The Sports Field Master Plan indicates that the main access to the car parking areas will be via Bourke Street from Adelaide Street. This will require configuration of the Bourke Street – Adelaide Street intersection, preferably to signal-control, to allow for movements to and from the north into and out of the car park. Alternatively, access to the Sports Field site from Kings Hill and Seaham can be provided via the north section of Port Stephens Street and Bourke Street West.

6.9 Strategy P6 – More Intensive Parking Management

Investigate and implement more intensive parking management (e.g. parking restrictions, pricing and enforcement) in the town centre core.

6.9.1 Approach

Parking spaces within the town centre core are a limited resource that should be shared by the community. In some areas, more intensive parking management measures may be required to allow a number of visitors throughout the day to use a single parking space.

6.9.2 Components

This benefits residents, as they can more easily find a parking space, and businesses, who are provided with a bigger market for their services. More intensive parking management may include shorter parking limits (such as ½ or 1-hour parking), and

associated enforcement by Council rangers. In the medium- to long-term, charging for the use of parking can be considered to further encourage turnover of parking spaces.

Parking management can extend to monitor actual usage of parking facilities for residential developments (e.g. garages for detached houses are indeed used for parking cars rather than having cars parked on-street because garages are used for household storage.)

6.10 Strategy P7 – On-Street Accessible Parking

Incorporate accessible parking spaces in the re-design for William Street, design on-street parking provision for flexibility to convert to accessible parking spaces if required.

6.10.1 Approach

There is limited information available to assess growth of demand for accessible parking spaces in the town centre. However, in line with the strategy for William Street improvements (Strategy R4) addressing the vertical profile issues, the design of accessible parking needs to be integrated into the preferred option.

6.10.2 Components

- ▶ Designate accessible on-street car parking spaces for Port Stephens Street (suggest one space at each approach and departure side of Glenelg Street, William Street, Bourke Street (except bus zone) and Kangaroo Street intersections; and
- ▶ Designate accessible on-street car parking spaces for Sturgeon Street between William Street and Glenelg Street (suggest two on each side). This will also serve the public transport interchange.

6.11 Strategy P8 – Improvements to Existing Parking Design

Review the current layout of existing car parking to address vehicular – pedestrian conflicts.

6.11.1 Approach

Adopt an integrated approach of incorporating pedestrian requirements within car parking facilities.

6.11.2 Components

- ▶ Review car park layout of Centro off-street parking to facilitate pedestrian movements. This includes an assessment of the volumes of pedestrian flows and the levels of service of pedestrian links;
- ▶ Reconfigure parking along Port Stephens Street between Bourke Street and Kangaroo Street in view of their utilisation rate and the provision of alternative off-

street car parking spaces (Dan Murphy's, Aldi). This is in line with the strategy for Port Stephens Street (Strategy R4); and

- Reconfigure William Street on-street car parking arrangements in line with the preferred option to improve William Street (Strategy R6).

6.12 Strategy P9 – Consider Options for Satellite Car Parking Areas

In consideration of the scenario wherein the planned development of the Sports Field site, including the additional parking supply does not proceed, satellite parking facilities would need to be planned.

6.12.1 Approach

As part of Strategy P1 – Parking Management Plan, a scenario wherein the planned parking facilities within the Sports Field site does not materialise needs to be considered.

6.12.2 Components

- Consider potential satellite off-street consolidated car parks at the north end and south end of the town centre. The northern car park would ideally be near the playing fields so that shared usage is optimised. The southern car park could potentially be at the south end of Port Stephens Street, accessible via Swan Street. It could be integrated with future marina-related development at the Hunter River. Both car parks need to be integrated with pedestrian and cycling facilities, as well as served by buses; and
- As part of the Parking Management Plan, provisions for car parking information signs at gateways and entries to the town centre into these satellite car parks would also need to be made. These signs would ideally provide dynamic (real-time) parking availability information.

Figure 21 shows the indicative locations of these satellite car parks.

Figure 21 Potential Satellite Car Park Locations



Source: GHD / Urbis, 2011

7. Public Transport Strategy

This section outlines the public transport strategy within the main aim to manage demand for car use within Raymond Terrace.

7.1 Local Public Transport Issues

Current public transport mode shares in Raymond Terrace indicate very low usage, which can result in lower viability for public transport service provision, and thus enter a “vicious cycle” of greater dependence on private car travel.

Public transport is a critical component of a sustainable functioning centre. The higher the public transport mode share, the more opportunities there are for accommodating more intense and concentrated activities. With limited public transport use, access and mobility for medium- to long-distance trips are dependent on the private car, which presents issues relating to congestion, constraints in available space for parking, emissions, and safety.

To implement an effective and efficient public transport strategy in existing areas is problematic. Residents in existing areas are less likely to change travel mode unless the potential benefits are made clear. Travel behaviour change will be hard to implement, as the majority of Raymond Terrace residents and employees are accustomed to travelling by the car.

Deterrents exist in Raymond Terrace as bus services traverse a circuitous street network with low land use densities. As a result of these problems, certain routes are seen to provide an irregular and unreliable service, which results in low patronage levels.

7.2 Public Transport Task

The planning and operation of public transport in Raymond Terrace will need to be undertaken in such a way that:

- ▶ Recognises that many of the decisions relating to key public transport corridors and services are made by the State Government, thus Port Stephens Council will often need to play a lobbying or support role;
- ▶ Understands the local public transport needs and balances and integrates them with the needs of the broader public transport networks;
- ▶ Focuses on the users of the public transport services, and plans and operates public transport to best serve the users;
- ▶ Recognises that as the intensity of development increases, it will be increasingly important to capture a higher proportion of trips on public transport in order to slow the rate of growth in general traffic and to manage congestion;
- ▶ Prioritises access by public transport over access by private vehicles and ensures that residents and visitors are not dependent on private vehicles for mobility.

Raymond Terrace should be recognised as an area that can be accessed efficiently, safely and comfortably by public transport;

- ▶ Supports and is supported by the planning and design of land use and public domain. Quality pedestrian and cycling environments should be established around public transport corridors and facilities;
- ▶ Reflects the strong potential of public transport as a travel demand management measure and an important part of a package of measures to improve overall accessibility, manage traffic levels and reduce transport impacts;
- ▶ Extracts the highest value out of public transport investments and funding. This includes:
 - Recognising that if planned and operated successfully, trips attracted to bus make a far more effective use of road space than trips made by private vehicles; and
 - Recognising that the benefits of public transport use extend to such 'externalities' as local and global environment, amenity, public health etc., that these benefits should be considered in assessment of projects; and
- ▶ Recognises the current evolution in the land use of Raymond Terrace and how this evolution will affect the communities' expectations with respect to public transport.

7.3 Public Transport Principles

7.3.1 Integrated Land Use and Public Transport Planning

In order to inform regional and local planning, the public transport network needs to do more than solely adapt. Public transport planning and provision needs to be undertaken in consultation and conjunction with planning policies and development controls. The outer areas of many urban areas suffer from poor public transport and other facilities because planning is often conducted in an incremental or piecemeal process. The benefits of an integrated land use and transport planning process with respect to new and redeveloping urban areas include:

- ▶ Co-location of key community facilities, shops and other trip attractors along bus routes and at central points where several services converge, making it easier to access local facilities for residents;
- ▶ Faster and more efficient bus routes, serving residential areas without undue deviations through outlying residential areas with limited through road connections; and
- ▶ Earlier introduction of public transport services, rather than relying on passenger demand to grow in the absence of an attractive service.

New public transport services must also be planned in the context of an integrated transport network. This network would range from local 'feeder' bus services to public transport nodes, to direct, high quality and efficient bus corridors. A successfully integrated public transport network would have minimal delays and costs associated with transferring from one mode or service to another.

7.3.2 Network Features

The key features of a quality public transport network need to be considered in undertaking the regular service reviews for Port Stephens and for Raymond Terrace. These include:

- ▶ *Policy frequency and span* – should provide frequent services across the day from early in the morning to late at night. The *Outer Metropolitan Service Planning Guidelines* (NSWTI, 2009) provide guidance on frequencies by route type;
- ▶ *High operating speed and reliability* – should provide attractive service speeds and high levels of reliability. Bus routes should be largely immune from congestion and delays associated with general traffic;
- ▶ *Easy connections between lines* – Transferring in a public transport network is as unavoidable as turning a corner when driving. The convenience of transfers needs to be maximised through high frequency of service and also through special attention to the physical facilities at transfer points;
- ▶ *Good legibility and usability* – the network should be easy to comprehend (at a macro/system level) and easy to navigate (at a micro/user level);
- ▶ *The network that links the urban villages and centres* – the network should support the centres concept outlined in the Lower Hunter Regional Strategy, which is the foundation of the Lower Hunter's land use vision. In particular, the network needs to provide the most direct route between any two centres;
- ▶ *Promoting accessibility over mobility* – the network, and its integration with land use, needs to focus on providing appropriate levels of accessibility without relying on unsustainable levels of mobility. By clustering a range of land uses along the public transport network, it will become increasingly useful and attractive to users by reducing the need to use private vehicles to access everyday needs and services, including employment, retail and commercial activities;
- ▶ *Integration with land use* – the network would have a two-fold connection with land use. Firstly, it serves areas with the highest public transport ridership, densities and mix of uses. In this way, higher ridership is rewarded with increased service. Secondly, it should be an important factor in determining land use mechanisms and zoning in Raymond Terrace.

7.3.3 Facilities

Raymond Terrace, being a major regional centre would need to improve its public transport interchange to ensure that it has the following facilities, as a minimum:

- ▶ Comfort and convenience facilities
- ▶ Seating
- ▶ Newsstand kiosk with prepaid tickets – for consideration
- ▶ Pay telephone – may be required
- ▶ Toilets – desirable to have

- ▶ Baby change facilities – may be considered
- ▶ Bus driver facilities may be required (toilets and meal room with services)

Other requirements include:

- ▶ Bus information pylons indicating interchange name, bus stand numbering, maps of bus route, the interchange and the local street network.
- ▶ Stand specific information such as route numbers, destinations, fares and timetables
- ▶ Car passenger drop-off and pick-up zones
- ▶ Bicycle parking
- ▶ Security and safety facilities – lighting, surveillance

Desirable facilities include:

- ▶ Real time route information
- ▶ Service disruption information
- ▶ Emergency help points
- ▶ Public address system

7.4 Strategy PT1 – Public Transport Service Planning

Port Stephens Council to engage with bus operators and Transport for NSW in undertaking regular reviews of public transport services for the Raymond Terrace Major Regional Centre, in line with the *Outer Metropolitan Service Planning Guidelines*.

7.4.1 Approach

An overview of a potential implementation process for the Public Transport Service Planning Strategy is described below. The key aim is to provide an integrated network of regular, reliable and public transport services.

Port Stephens Council has limited control over the integration of the land use and public transport provision process. Council's influence extends to:

- ▶ Control of the land use process, which can locate density and transit-supportive design along public transport corridors, dictating future potential public transport ridership; and
- ▶ Control over some of the streets on which the public transport services will run. It is recognised that some of the public transport routes are on facilities controlled by the RTA. On streets it manages, PSC has almost total control over peak and average public transport operating speeds, and largely influences public transport reliability. Port Stephens Council can therefore work with public transport providers to achieve the goals of the public transport strategy.

7.4.2 Components

- ▶ Refine the indicative public transport network in consultation with State Agencies, following service planning objectives;
- ▶ Develop Quality of Service Standards: Establish performance measures, including:
 - Network coverage – balancing need to cover a wide area and to minimise route travel times;
 - Network legibility – clear and simple to understand routes;
 - Service directness – routes as direct as possible
 - Accessible buses
 - Services to greenfield areas
 - School services
 - Strategic public transport corridors
 - Route types – regional, district, local
 - Service frequencies
 - Time periods – pre-peak, peak period, inter-peak, night-time, owl services, weekends
 - Span of service hours.
- ▶ Ensure Road Network, Parking and Walking and Cycling Strategies are coordinated to support the public transport network;
- ▶ Identify constraints to implementation and successful operation of the network, by working with other local and state level stakeholders including transport providers to identify constraints to the implementation and successful operation of the public transport network; and
- ▶ Identify linkage opportunities between local public transport services and the main public transport service.

7.5 Strategy PT2 – Relocate Sturgeon Street Interchange

Relocate the Raymond Terrace Public Transport Interchange on the Glenelg Street end of Sturgeon Street to the William Street end.

In line with upgrading the Raymond Terrace interchange, the current location at Sturgeon Street is situated towards the end of the town centre core. With the Sports Field development, the centre of activity within the town centre will likely shift to the north east. As such, the current location of the interchange will be relegated even further to one end of the town centre core.

7.5.1 Approach

The Raymond Terrace interchange will become a key focus in the day-to-day functioning of the Major Regional Centre. In order to achieve the other objectives of the integrated transport strategy, it will be helpful if the average walking distance to

public transport services, in particular to the interchange, is minimised as much as possible without bus movements interfering with main pedestrian routes.

7.5.2 Components

It is recommended that the existing bus interchange on Sturgeon Street be enhanced and relocated closer to William Street.

Further, in line with Strategy PT1, it should be considered that both sides of Sturgeon Street at the William Street end be designated as part of the interchange zone. In the medium- to long-term, an assessment of the requirement for a two-sided interchange will inevitably be made. For the short-term, the southern side of Sturgeon Street may be designated as a temporary taxi rank, until the area is required for bus stands.

7.6 Strategy PT3 – Improve Public Transport Interchange Design

7.6.1 Approach

Consider the provisions in the *Guidelines for the Development of Public Transport Interchange Facilities* for improving the bus interchange on Sturgeon Street.

7.6.2 Components

Raymond Terrace, being a major regional centre would need to improve its public transport interchange to ensure that it has the following facilities, as a minimum:

- ▶ Shelters – bus waiting sheds, continuous cover encompassing bus stands, taxi rank, future kiss-and-ride zones;
- ▶ Seating;
- ▶ Bus information pylons;
- ▶ Bicycle parking;
- ▶ Drop-off and pick-up zones – taxi rank, kiss and ride;
- ▶ Safety and security – lighting, surveillance, help points; and
- ▶ Bus driver facilities - related to layover (toilets and meal room with services).

The improved Raymond Terrace interchange would also need to comply with other relevant regulations and standards, including accessibility and mobility standards.

7.7 Strategy PT4 – Fare-Free Zone for Public Transport

Consider designating the zone bounded by the Hunter River, William Bailey Street, Adelaide Street and Glenelg Street as a Fare Free Zone for Buses.

7.7.1 Approach

Integrating the provision of affordable and efficient public transport services within Raymond Terrace will be a key factor in ensuring that the major regional centre functions efficiently with future growth.


7.7.2 Component

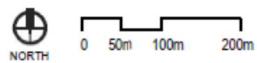
In order to further reduce dependency on private cars, consideration needs to be given to offer free bus services within the larger urban core of the town centre. A system that allows fare-free travel is currently in operation in the inner part of Newcastle for seven days a week. Other urban centres in metropolitan Sydney (e.g. Sydney, Parramatta, Penrith, Bankstown, etc.) are also provided with free shuttle bus services within city centres. These free shuttle buses are operated by the State Government.

Figure 22 indicatively shows the potential extent of the proposed bus fare-free zone in Raymond Terrace.



Figure 22 Proposed Fare-Free Zone

 Extent of proposed bus fare-free zone



G:\21\20386\Tech\DraftReport\Map\Figure_24_FareFreeZone.docx

7.8 Strategy PT5 – Bus Layover Facility

Designate a portion of Glenelg Street between Port Stephens Street and Sturgeon Street as a dedicated bus layover zone

7.8.1 Approach

Bus layover areas are also important facilities to enable the town centre and the interchange to function efficiently. Without designated layover areas, buses tend to occupy bus stands at the interchange, which lessens its operational efficiency.

7.8.2 Components

It is recommended that a bus layover area in Raymond Terrace be designated. Investigations of bus routing and the street network suggest that the layover area can be located at Glenelg Street outside the Centro loading areas, although alternative locations can also be designated.

The bus layover facility should be provided with driver amenities. Council would need to initiate discussions between Hunter Valley Buses and Centro to outline required facilities that may be provided within Centro (e.g. use of toilets by bus drivers).

7.9 Strategy PT6 – Public Transport Accessibility

Consider the accessibility needs of disadvantaged user groups who are not currently well served by the existing public transport network, and consider the potential for extension of community transport services or other transport modes to meet their needs.

Disadvantaged public transport users groups such as children, the elderly, women, the unemployed, and those on a low income or without a car can suffer disproportionately from an ineffective public transport network. Consideration of the needs of these user groups and provision of new transport options may lead to better transport provision across a variety of modes and methods.

8. Walking and Cycling Strategy

Sound planning and the provision of high quality facilities for pedestrians and cyclists constitute a critical element of the transport strategy for Raymond Terrace. The strategy presented below has been developed to achieve challenging modal share and environmental objectives. It will be necessary to build the access network from the “bottom up”, (i.e. the pedestrian and cyclist), as well as “top down” (i.e. bus).

8.1 Pedestrian and Cycling Issues

8.1.1 Barriers to Walking and Cycling

Walking and cycling are valued as a means of transportation and recreation due to their low cost, low impact, wide suitability and health benefits. However, there are numerous barriers to increasing walking and cycling through a lack of infrastructure, heightened safety concerns, long trip distances and an urban form structured to favour motor vehicle use.

The Raymond Terrace Draft Footpath and Cycling Strategy (Draft FCS) prepared by Council serves as a framework that seeks to break these barriers down.

Currently, there are no shared paths / cycleways that serve Raymond Terrace town centre. Although the footpaths within the town centre link to surrounding areas, the cycle facilities linking these surrounding areas all terminate at the periphery of the town centre. The Draft FCS indicates an extension of the shared path from the north into the Sports Field site. However, there is no provision to provide a through link that connects with areas to the south.

8.1.2 Infrastructure Opportunities

There is an opportunity to provide for increased walking and cycling through the provision of a suitable environment within existing and future urban areas. The provision of infrastructure includes walking and cycle paths, which should be clearly defined and separated from roads and traffic, and possibly even between cyclists and pedestrians. Potential conflict areas with traffic should also be improved, through upgrading intersections, the installation of traffic signals and pedestrian crossings.

Other infrastructure approaches could include improved path or street lighting to enhance safety along walking and cycling routes.

The Sports Field Master Plan, in conjunction with the extension of Sturgeon Street and Bourke Street presents opportunities for establishing the main shared path and cycle facility “missing links” through Raymond Terrace town centre. As noted above, however, this opportunity would need to extend to provide a more complete shared path network to areas to the south, preferably extending to Heatherbrae.

8.1.3 Social Opportunities

Opportunities to promote walking and cycling should consider a wide range of tools, rather than only infrastructure responses. One approach would be the walking school bus, which is designed to encourage children to walk to school: fostering independence and promoting healthier, more active travel. Other approaches may include the promotion of safe cycle or pedestrian routes or measures such as financial incentives for cycling to work.

Schools in Raymond Terrace such as St Brigid's Primary School and Raymond Terrace Primary School could benefit with an increased community awareness that walking and cycling can be suitable access modes for school children. The shared path along Adelaide Street linking with Raymond Terrace Primary School is already well utilised by school children. This can serve as a suitable showcase on promoting walking and cycling as efficient travel modes to access schools.

8.1.4 Walking and Cycling in New Development Areas

Once the above issues have been identified, the focus shifts to identifying and providing appropriate plans and paths in existing and new development areas. One option is incremental provision of walking and cycling paths as new residential areas expand. If facilities are not proposed or in place when residents move into the area, then their travel choices will be influenced by a lack of pedestrian and bicycle routes.

The more appropriate option is to incorporate pedestrian and bicycle routes into the design of new developments and use the inclusion of these plans as an incentive to attract future residents. This is an important consideration in the planning of residential developments, including Kings Hill, Wallalong and Medowie,

8.1.5 Integration with Other Transport Modes and Urban Planning

Pedestrian and bicycle plans cannot be considered in isolation from other forms of transport and urban planning. This applies to the integration of pedestrian and bicycle plans with access to existing and potential bus networks, and with the encouragement of higher density, mixed land-use developments. The latter is particularly important if shops and services are located close enough to walk or cycle to. Urban design also plays a role in achieving satisfactory pedestrian and bicycle plans. Residents must be able to walk or bicycle to shops. Citing an earlier example, road widths in and around nodes could be reduced to slow passing traffic and make them more pedestrian and cyclist friendly.

The layout of Adelaide Street, for example, would need to be improved in a way that integrates walking and cycling modes, as reflected in the intersection improvement proposals in the Road Network Strategy.

Pedestrian and bicycle plans also need to encourage access to bus stops.

8.2 Walking and Cycling Task

The primary objective of the combined Walking and Cycling Strategy is to encourage greater use of walking and cycling as a means of transport and recreation. Walking and cycling are valued due to their low cost, low impact, wide suitability and health benefits. Safety is also an important element for walking and cycling, with improved layouts required at intersections and provision of walking and cycling paths that are protected from road traffic. Pedestrian and bicycle strategies also need to be integrated with the Road Network, Parking and Public Transport Strategies to assist access to existing and potential bus networks.

8.3 Walking and Cycling Principles

8.3.1 Considerations

The provision and management of walking and cycling facilities and opportunities in Raymond Terrace will be undertaken in such a way that:

- ▶ Understands the key walking and cycling needs in the region;
- ▶ Recognises the role walking and cycling plays in the reduction of car-based trips in Raymond Terrace, and how the provision of improved facilities and opportunities can help promote mode change in the future;
- ▶ Understands the need for the separation of pedestrians and cyclists from motor vehicle traffic;
- ▶ Identifies mechanisms for the community to have regular input into the provision of walking and cycling facilities;
- ▶ Recognises that all trips involve walking at either the beginning or end (or both) of the journey, resulting in the need for connections between parking and public transport areas and destinations;
- ▶ Incorporates walking and cycling issues into the Road Network, Parking and Public Transport Strategies;
- ▶ Recognises that walking and cycling paths can form key routes between destinations; and
- ▶ Understands that walking and cycling trips perform a variety of functions, not only travel from an origin to a destination, but such trips are also undertaken for recreation and/or health benefits, which can be influenced by the amenity of the route.

It is therefore necessary for Port Stephens Council to develop a walking and cycling framework that will best achieve the aspirations of the region. This may apply not only to Raymond Terrace but to other centres within the Port Stephens LGA as well.

8.3.2 Achieving a Positive Walking Environment

Walking is the simplest form of transportation. It is available to all people (inclusive of those who use mobility aids), is free and has insignificant environmental cost.

Furthermore, all trips involve some walking component, if only from the car park to the shop. Planning for pedestrians is therefore of primary importance to transportation planning.

Pedestrians use every part of the public domain, including roads, footpaths, nature strips, shopping centres and other public spaces.

It should be noted that walkers are particularly vulnerable to cars and other motorised traffic.

The provision of pedestrian infrastructure should not only aim to fulfil the requirements of existing users or to comply with relevant standards, but should also promote walking for transport, recreation and health and increase the number of trips taken by foot in Raymond Terrace. Such an outcome would result in fewer car trips, healthier residents and a more active (and safe) public domain.

A number of goals are required in order to provide a high quality pedestrian environment:

- Safe – safe crossing locations, lighting, security;
- Direct – facilities serving desire lines between major centres of activity, “24/7” access where possible;
- Pleasant – attractive walking environment;
- Suitable for all users – suitable width to accommodate the number of pedestrians, continuous paths, free of obstructions, satisfy needs of hearing and vision-impaired users; and
- Feed public transport – areas around bus stops should be examined to determine any obstacles to pedestrian use.

8.3.3 Achieving a Positive Cycling Environment

Cycling is a highly efficient, environmentally benign form of transport. As with walking, cyclists are improving their health and contributing to an active environment at a human scale.

Cyclists move around the public domain in various ways, largely depending on the trip purpose and rider characteristics. For example, children will tend to use the footpath and cycle at low speeds, while an adult on the way to work will ride along the fastest and most direct route available (on or off-road).

Cyclists therefore move through an “environment” in a similar way to pedestrians, although the speed and distance, which they travel, mean that they identify more with the concept of a network. Attention to cycling facilities should not be confined to one or two “routes” or “links” in an area, as trip origins and destinations are diverse. Every street must be a safe route for cyclists and be designed in accordance with the function, traffic volume and width of the street.

Infrastructure for cycling can be designed in a similar way to other vehicles, through consideration of speed, sight distance, priority at intersections etc. However, bicycles

have a degree of manoeuvrability that makes them somewhat unpredictable to motorists and pedestrians. Therefore, the design of both on and off-road facilities should aim to encourage predictability and clear priority at all conflict points.

Cyclist needs reflect those for pedestrians. Planning principles for cycle facilities mirror those for pedestrian facilities, including safety, directness, pleasantness and suitable for all users. One particular principle that also needs to be considered in planning for cycle facilities are end of trip facilities, such as bicycle parking and the availability of showers and change rooms, particularly for offices.

Bicycle users need to know that their bike will be safe from theft while it is not attended. Where appropriate, complementary facilities for staff bike parking also need to be provided. These include change rooms, showers and lockers.

8.4 Strategy WC1 – Define Objectives for the Future Walking and Cycling Environment

Define objectives for the future walking and cycling environment and confirm the validity of existing pedestrian and bicycle plans and extend for new development areas. This is most effectively undertaken through the preparation of a Pedestrian Access and Mobility Plan (PAMP) and a Bicycle Plan for Raymond Terrace.

8.4.1 Approach

The approach for this strategy follows the overall objectives of encouraging walking and cycling through a combination of measures, policies and incentives, as well as considering an integrated approach in developing walking and cycling in line with the other strategies for the road network, parking and public transport. It considers key findings on current walking and cycling conditions and opportunities in Raymond Terrace, such as:

- ▶ There are a number of existing shared paths in Raymond Terrace that are well-utilised by the community;
- ▶ The Hunter River presents a significant opportunity to provide a shared path alignment that would serve the town centre; and
- ▶ Current priorities in the town centre tend to favour motor vehicles over pedestrians and/or cyclists.

An indication of current priorities

William Street
near Sturgeon
Street intersection
(outside Best &
Less).



8.4.2 Components

The definition of objectives for future walking and cycling in Raymond Terrace would be most effectively undertaken through a PAMP and Bike Plan.

The objectives and plans need to be developed with the view of achieving:

- ▶ Comprehensive pedestrian and cycleway network;
- ▶ Direct access to public transport services and transport interchange(s);
- ▶ Provision of additional crossing points to enable the network to be permeable to pedestrians and cyclists;
- ▶ Development of behaviour change programs for visitors and residents to encourage higher use of active modes of transport;
- ▶ Consideration for Council to employ a transport officer in charge of monitoring future implementation of the components identified in the Draft FCS, behaviour change programs and overall monitoring of levels of active transport use; and
- ▶ Preparation of policies that would guide the preparation of conditions of consent to be imposed on developments. These conditions may include the preparation of workplace travel plans and transport access guides. Guidelines for larger developments (e.g. major employers) would need to employ their own transport officers.

8.5 Strategy WC2 – Pedestrian and Cycle Network Improvements

Complete the identified pedestrian and cycle network as outlined in the Draft Footpath and Cycleway Strategy for Raymond Terrace Town Centre, to be supplemented by pedestrian and cycleway links and improvements through the Town Centre, and joining areas to the south of the town centre.

8.5.1 Approach

Proposed improvements to the walking and cycling environment in Raymond Terrace follow an approach that considers these modes as equally important in the transport hierarchy. As with the other walking and cycling strategies, these improvements consider other transport strategies (road network, parking and public transport) in an integrated manner.

8.5.2 Components

Figure 23 shows those proposed improvements to the pedestrian and cycle facilities within Raymond Terrace town centre.

The Raymond Terrace Draft Footpath and Cycling Strategy (Draft FCS) serves as the framework for completing the pedestrian and cycle network. The review of the current strategy identified additional opportunities for connecting “missing links”. These are outlined below:

Pedestrian Links and Improvements through the Town Centre

Pedestrian circulation patterns through the town centre are focused on William Street, Sturgeon Street and the link between Centro and Marketplace. Footpath widths are generally considered adequate for the current requirements, although there are emerging issues relating to crossing busy roads.

Key required improvements to facilitate these circulation patterns include:

- ▶ WC2.1 – Improve pedestrian facilities through the car park between Centro and Marketplace (The Close), potentially widening and re-marking the pedestrian link between the back of the shops on William Street with the planting strip / footpath in the middle of the car park;
- ▶ WC2.2 – Consider providing 24/7 access in the passageway between The Mutual and Chemist linking Centro and Marketplace, subject to property ownership restrictions; and
- ▶ WC2.3 – Provide wheel stops on William Street car parking spaces to prevent the vehicles overhanging onto the footpath area.

Cycleways and Shared Paths

- ▶ WC2.4 – The shared path through Roslyn Park north of William Bailey Street currently has a designated crossing linking it with Carmichael Street. It is suggested that a new crossing more aligned with Sturgeon Street be considered. This crossing facility could be of the pedestrian refuge type. This is in connection

with the Draft FCS proposal for the shared path to continue along Sturgeon Street through the Sports Field development site;

- ▶ WC2.5 – Extend the proposed shared path to Sturgeon Street South, towards Raymond Terrace Public School;
- ▶ WC2.6 – Provide a new proposed shared path along Bourke Street between Boomerang Park and the shared path along the bank of the Hunter River; and
- ▶ WC2.7 – Consider using King Street as an alternative shared roadway to address the missing link on the shared path along the Hunter River bank in the short- to medium-term.
- ▶ WC2.8 – Extend the shared path on Newline Road proposed in the Draft FCS into Kings Hill;
- ▶ WC2.9 – Investigate a new cycle link between Kings Hill and the alternative alignment along Rees James Road, Alton Road and Roslyn Park proposed in the Draft FCS; and
- ▶ WC2.10 – Designate the Mount Hall Road route as a shared on-road cycleway to link with Raymond Terrace residential areas and the existing cycleway leading to Grahamstown Dam.

Figure 23 Proposed Walking and Cycling Improvements



8.6 Strategy WC3 – Extend High Pedestrian Activity Area

Extend the existing High Pedestrian Activity Area (40 km/hr zone) in the town centre to Bourke Street and King Street.

8.6.1 Approach

In view of pedestrian amenity and safety principles, as well as implementing a child-friendly town centre, the Sports Field development presents an opportunity to extend the High Pedestrian Activity Area within Raymond Terrace Town Centre to Bourke Street, as well as to King Street to incorporate the heritage precinct. This is in consideration of the following:

- ▶ There is an existing 40 km/h High Pedestrian Activity Area covering the town centre core in Raymond Terrace;
- ▶ The Sports Field development site will potentially expand the activity area to Bourke Street; and
- ▶ Plans for the development of the heritage precinct along King Street would also benefit from lower vehicle speeds.

8.6.2 Components

Extend existing 40 km/h High Pedestrian Activity Area to Bourke Street to the north east and King Street to the north west. This is shown in Figure 24.

This should be undertaken in accordance with the *Guide to Identifying and Implementing 40km/h Speed Limits in High Volume Pedestrian Areas* developed by the RTA.

Figure 24 Extension of High Pedestrian Activity Area



8.7 Strategy WC4 – Bicycle Parking

Incorporate provisions for bicycle parking in an updated DCP for Parking covering Raymond Terrace Town Centre.

8.7.1 Approach

The Port Stephens DCP Chapter B3 covers Parking, Traffic and Transport. It provides car parking requirements for developments, but does not indicate any requirements for bicycle parking.

The rates of bike parking provision can be patterned after the publication “*Why Provide Cycling Facilities for Buildings?*”⁵ by the Australian Bicycle Council and the Cycling Promotion Fund. This document provides recommendations on rates of cycle parking provision, as well as complementary facilities for staff bike parking for buildings that altogether would contribute to promoting more cycling use.

⁵ Accessible via <http://www.austroads.com.au/documents/ABC%20FactSheet%20-%20Bike%20Parking.pdf>



8.7.2 Components

It is recommended that a revised DCP on Parking for Raymond Terrace, particularly for the town centre be introduced that incorporates bicycle parking requirements for developments. This could follow a review of other Councils' DCPs that provide guidelines on bicycle parking, as well as resources from other organisations, agencies, and advocacy groups.

9. Summary and Next Steps

9.1 Summary

The *Raymond Terrace Transport and Parking Review* was undertaken to guide the development of the *Raymond Terrace Growth Centre Strategy* and inform the review of the Port Stephens Local Environmental Plan 2000.

The *Raymond Terrace Growth Centre Strategy* seeks to provide a clear direction for the future growth of Raymond Terrace, particularly in light of its role as one of the major regional centres in the Lower Hunter region.

This *Transport and Parking Review* considered the existing situation, programmed improvements, and the principal development and growth objectives and developed strategies to ensure that development proceeds in a sustainable manner.

These strategies were categorised into the following:

- ▶ Road network strategy;
- ▶ Parking strategy;
- ▶ Public transport strategy; and
- ▶ Walking and cycling strategy.

9.1.1 Road Network Strategy

The road network strategy provides an integrated approach to road network planning and management that aims to meet the following requirements:

- ▶ Provide for significant land use changes;
- ▶ Protect the regional role of arterial roads;
- ▶ Provide for pedestrians, cyclists and public transport; and
- ▶ Maintain safety and amenity.

With these aims, the following comprise the road network strategy for Raymond Terrace:

- ▶ R1 – Revised road hierarchy;
- ▶ R2 – Street network connectivity;
- ▶ R3 – Adelaide Street improvements;
- ▶ R4 – William Street improvements; and
- ▶ R5 – Port Stephens Street improvements.

9.1.2 Parking Strategy

The parking strategy seeks to address specific issues to parking in Raymond Terrace and incorporates the following key elements:

- Respects the local parking needs and balances them with the needs of the surrounding areas;
- Recognises that as the intensity of development increases, it will not be possible to meet unrestrained parking demand in some parts of the town centre;
- Reflects the strong potential for parking to be a travel demand management measure and an important part of a package of measures to improve overall accessibility, manage traffic levels and reduce transport impacts; and
- Extracts the highest value out of parking facilities – especially if on public or Council-owned land.

The following comprise the parking strategy:

- P1 – Develop a parking management plan;
- P2 – Consider maximum car parking requirements;
- P3 – Alternative uses for section 94 contributions;
- P4 – Shared parking;
- P5 – Sports field development car parking facility;
- P6 – More intensive parking management;
- P7 – On-Street accessible parking;
- P8 – Improvements to existing parking design; and
- P9 – Consideration for satellite car parking options.

9.1.3 Public Transport Strategy

The public transport strategy has been developed with the following key elements:

- Recognises that many of the decisions relating to key public transport corridors and services are made by the State Government, thus Port Stephens Council will often need to play a lobbying or support role;
- Understands the local public transport needs and balances and integrates them with the needs of the broader public transport networks;
- Focuses on the users of the public transport services, and plans and operates public transport to best serve the users;
- Recognises that as the intensity of development increases, it will be increasingly important to capture a higher proportion of trips on public transport in order to slow the rate of growth in general traffic and to manage congestion;
- Prioritises access by public transport over access by private vehicles and ensures that residents and visitors are not dependent on private vehicles for mobility. Raymond Terrace should be recognised as an area that can be accessed efficiently, safely and comfortably by public transport;

- ▶ Supports and is supported by the planning and design of land use and public domain. Quality pedestrian and cycling environments should be established around public transport corridors and facilities;
- ▶ Reflects the strong potential of public transport as a travel demand management measure and an important part of a package of measures to improve overall accessibility, manage traffic levels and reduce transport impacts; and
- ▶ Extracts the highest value out of public transport investments and funding.

With these, the following comprise the public transport strategy for Raymond Terrace.

- ▶ PT1 – Public transport service planning;
- ▶ PT2 – Relocation of the Sturgeon Street interchange;
- ▶ PT3 – Improvements to public transport interchange design;
- ▶ PT4 – Consideration for a fare-free zone for public transport;
- ▶ PT5 – Designation of a bus layover facility; and
- ▶ PT6 – Improving public transport accessibility.

9.1.4 Walking and Cycling Strategy

The Walking and Cycling Strategy comprises key elements that aim to promote these sustainable modes of transport, and would be applicable not only for Raymond Terrace, but for other centres within Port Stephens LGA as well.

The following comprise the Walking and Cycling Strategy for Raymond Terrace:

- ▶ WC1 – Definition of objectives for the future walking and cycling environment;
- ▶ WC2 – Pedestrian and cycle network improvements;
- ▶ WC3 – Extension of high pedestrian activity area; and
- ▶ WC4 – Development of policy to guide provision of bicycle parking.

9.1.5 Integrated Transport Strategy

These individual strategies, taken together, comprise the Integrated Transport Strategy for Raymond Terrace

9.2 Next Steps

The *Transport and Parking Review* has developed a number of components for the Raymond Terrace Integrated Transport Strategy that impacts on a number of plans, programs and policies that are either already being implemented by Council, or are about to embark on that process.

As indicated in the introduction, the key purpose of this review is to guide the development of the *Raymond Terrace Growth Centre Strategy*.



In addition, the findings of this review necessitate the follow-on review and/or revision of existing Council policy documents that would play a role in guiding the growth and development of Raymond Terrace. These include:

- ▶ A DCP on Parking specific to Raymond Terrace;
- ▶ Review of Section 94 contributions for the provision of alternate / replacement parking spaces;
- ▶ A review of the parking provisions, arrangements and principles encompassed within the *Raymond Terrace Sports Field Master Plan*;
- ▶ Incorporation of bicycle parking requirements in the new DCP; and
- ▶ Finalising the Draft Footpath and Cycleway Strategy.



GHD

133 Castlereagh St Sydney NSW 2000

T: 2 9239 7100 F: 2 9239 7199 E: sydmail@ghd.com.au

© GHD 2011

This document is and shall remain the property of GHD. The document may only be used for the purpose for which it was commissioned and in accordance with the Terms of Engagement for the commission. Unauthorised use of this document in any form whatsoever is prohibited.

Document Status

Rev No.	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
0	R Manahan	B Hancock / S Konstas	 SK	G Wood		06/09/11