GTAconsultants

Unley, Goodwood and Wayville Local Area Traffic Management Study

Concept Plan Report

Client //	City of Unley
Office //	SA
Reference //	15A1143000
Date //	26/08/16

Unley, Goodwood and Wayville

Local Area Traffic Management Study

Concept Plan Report

Issue: A 26/08/16

Client: City of Unley
Reference: 15A1143000
GTA Consultants Office: SA

Quality Record

Issue	Date	Description	Prepared By	Checked By	Approved By	Signed
A	26/08/16	Final	Lydia Kairl	Paul Froggatt	Paul Froggatt	

GTAconsultants

Melbourne | Sydney | Brisbane
Canberra | Adelaide | Perth
Gold Coast | Townsville

Table of Contents

Appendices

A: Precinct Upgrade Plans

B: Precinct Summary Tables

Figures

Tables

1. Introduction

1.1 Background

We were appointed in February 2015 by the City of Unley to complete a Local Area Traffic Management Study for the suburbs of Unley, Goodwood and Wayville.

This LATM study for Unley, Goodwood and Wayville is being prepared as part of a comprehensive assessment by the City of Unley of all of the City's suburbs, identifying an ongoing program of improvements to transport and local amenity within the context of the City's Strategic Plan. The City's Strategic 4 Year Plan 2013-2016 sets out a series of Objectives and Strategies under each of the Strategic Goals. Goal 3, "Moving our path to an Accessible City" defines the context for this study with 3 primary objectives:

- Equitable Parking throughout the City
  - On-street parking is optimised
  - The mix of residential and business parking needs are met
  - Commuter parking only occurs in appropriate areas
- An integrated, accessible and pedestrian-friendly city
  - Improved connectivity and ease of movement between precincts
  - Enhanced mobility and accessibility for our community
  - Pedestrians can move through our city freely and safely
  - Shared zones are a feature throughout residential streets
- Alternative travel options
  - Safe bike and walk ways are a feature of our city
  - Reduced motor vehicle congestion
  - Public transport is an attractive and well used travel option

1.2 Study Approach

The traditional approach to Local Area Traffic Management (LATM) has been to identify locations with inappropriate traffic volumes and traffic speeds and to design and implement measures that seek to reduce them or mitigate the impact. Little regard has typically been paid to wider transport and streetscape issues and opportunities. Whilst this approach has generally achieved the desired traffic results, there have been instances where the measures have subsequently proved unpopular with local residents, have unintended consequences for adjoining streets or degrade the local street environment and walking and cycling routes.

In order to evolve the LATM process and achieve the City's relevant Strategic Goals, GTA approaches such studies in a more holistic manner, ensuring that all transport modes are considered and recognising that improvements to local walking and cycling routes and connections, and minor changes to the streetscape can both mitigate the traffic impact and achieve a positive outcome for the street amenity and environment and encourages more walking, cycling and use of public transport. This approach is now captured in SA specific guidance documents such as Streets for People and Healthy by Design and would be considered as more of a Local Area Transport Study than a Local Area Traffic Management (LATM) Study.

This study incorporates the principles of the SA Streets for People Compendium and the Healthy by Design SA guide and considers issues and opportunities associated with all transport modes. These SA based documents provide practical advice, design principles and case studies to reduce the impact of traffic in local communities and develop more walking and cycling friendly streets and suburbs.

Successfully achieving a higher proportion of the travel demand as walking, cycling and public transport trips will require a new approach to designing local streets for these modes and providing less focus on designing for the car, or designing only to manage the impact of the car.

Securing community support for this changing approach will also require an innovative and informative approach, providing background information and documented evidence. This report provides information and evidence to support innovative recommendations that are presented and identifies where additional data may be required to support the recommendations.

Our approach to the study has been to:

- Understand the community perception and use of the available transport facilities and the perception of the impact of through traffic and extraneous parking demand;
- Look for the evidence to support or disprove the perceptions;
- Develop options to overcome the evidential problems and reduce the impact of perceived problems; and
- Prioritise actions to deliver the outcome to support the community aspirations and Council's Strategic Goals.

1.3 Structure of this Document

This report considers the existing conditions within the study area and how these can be translated into potential opportunities. Some of the opportunities arise as a result of the need to resolve existing concerns, which are largely traffic related, whilst other opportunities provide more emphasis on local amenity and place value and the nature and design of the local streets to improve walking and cycling conditions, thereby achieving reduced traffic impact as a result.

Section 2 of this document considers the study area, transport networks and planning context. Section 3 considers the existing conditions based on recorded data, observations, comparison with best practice and community responses. Section 4 provides a list of potential opportunities that arise from the existing conditions, strategic planning documents and best practice. Section 5 outlines the basis of the option assessment process, which is then set out in detail for each of the three precincts in sections 6 to 8. Finally, section 9 provides a summary of the recommendations and section 10 provides details of the key reference documents that have been used.

1.4 Next Steps

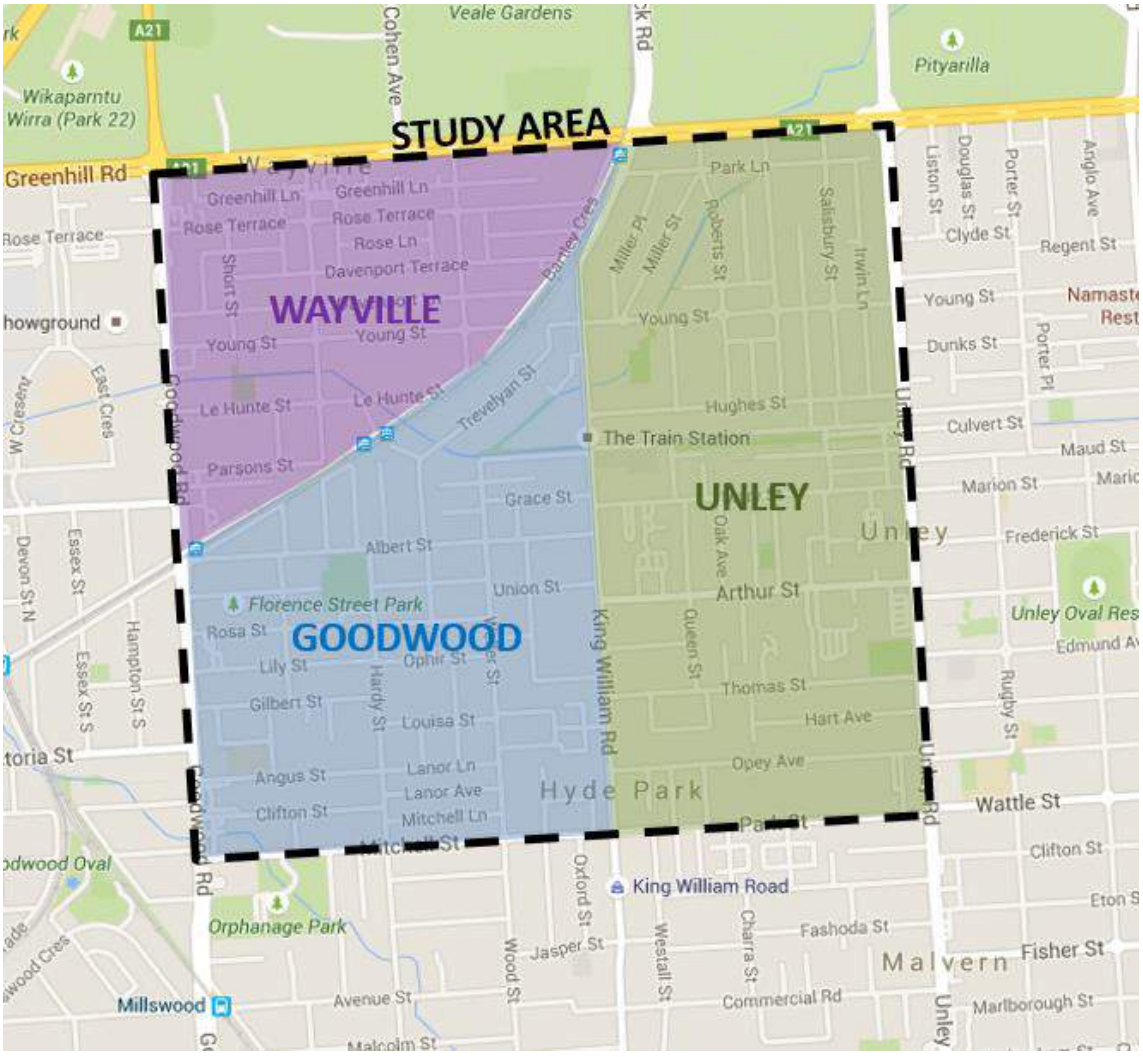
This Concept Plan Report forms the basis of the proposed community consultation and has been informed by the initial discussions with the Community Reference Groups (CRG) for Wayville and Goodwood. The report is to be read in conjunction with the summary maps and tables included as Appendices A and B. The report will be updated with feedback from the community consultation and prepared as a final study Plan.

2. Study Context

2.1 Study Area

The study area generally covers the suburbs of Unley, Goodwood and Wayville, which are bounded by Goodwood Road to the west, Greenhill Road to the north, Unley Road to the east and Mitchell Street and Park Street to the south. The study area is shown in Figure 2.1.

Figure 2.1: Study Area



(Map courtesy of Google Maps)

It should be noted that the suburb boundaries of Wayville, Goodwood and Unley are not precisely as shown in Figure 2.1, however these boundaries have been adopted for the purposes of this study.

The Unley, Goodwood and Wayville study area provides an ideal platform for a holistic approach to local traffic and transport management. With a compact study area, proximity to the Goodwood Road, Unley Road and King William Road local centres, 3 tram stops, frequent bus routes through the study area and on nearby arterial roads, a strategic bikeway and a

comprehensive network of pedestrian footpaths and shared paths, there would be few locations better placed within Adelaide from a transport perspective.

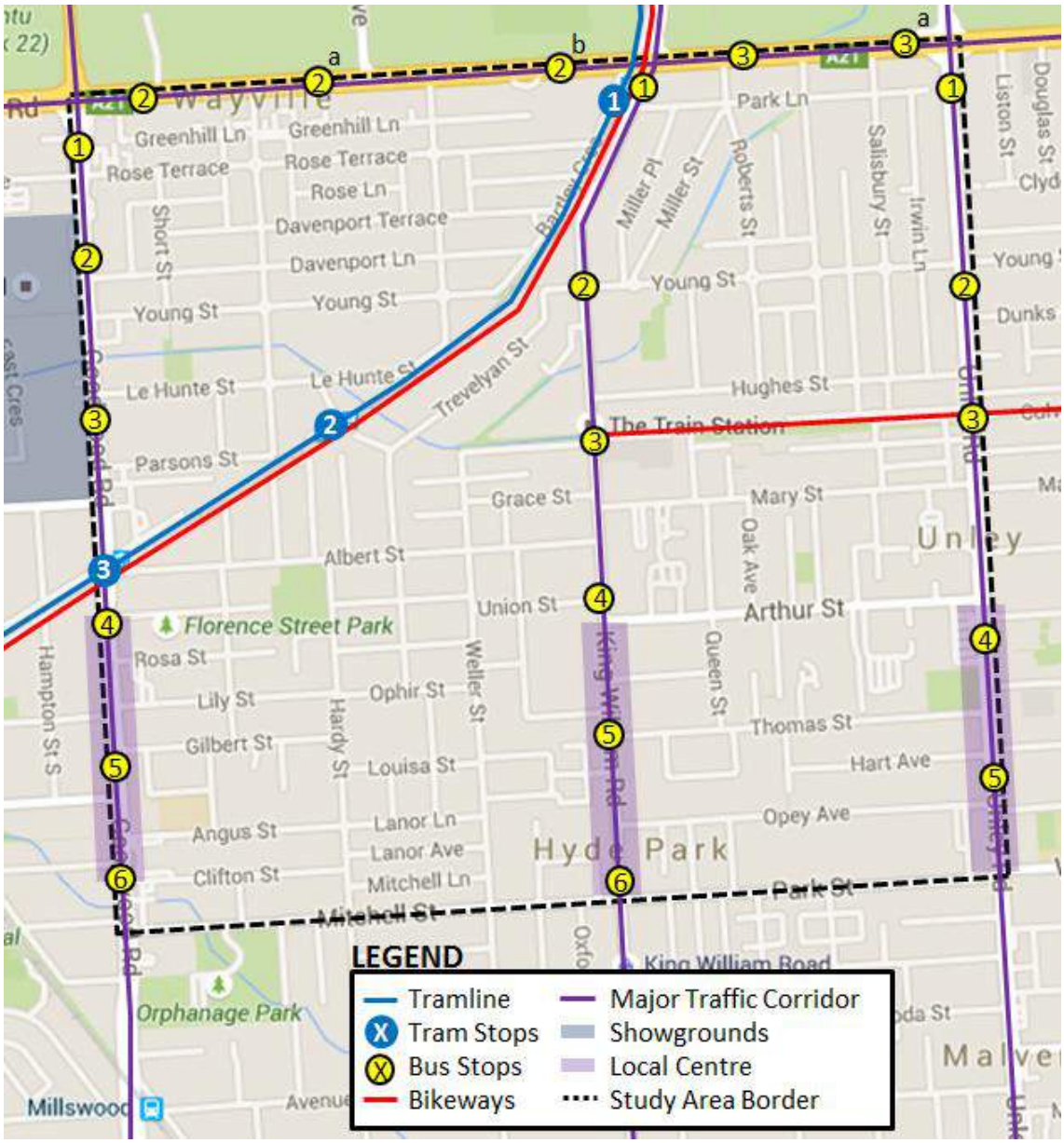
At only around 1 to 2 kilometres from the Adelaide CBD, adjacent the Greenhill Road commercial areas and opposite the Adelaide Showgrounds, the study area is also well located for wider access to key destinations.

However, this proximity to the CBD, Greenhill Road commercial areas and the Adelaide Showgrounds, results in the study area also experiencing use for convenient parking opportunities and use as a traffic access route. The route through King William Road, Northgate Street and Victoria Avenue provides a direct route down to Cross Road, with Sussex Terrace continuing the route further south. The route along Mitchell Street and Park Street provides an east to west connection between Unley Road and Goodwood Road. The provision of speed humps on Mitchell and Park Streets will maintain reduced vehicle speeds on these roads, but is likely to result in traffic displacement to parallel local streets, many of which are narrow and unsuitable for increased traffic volumes. Conversely the recent changes to Greenhill Road to improve traffic and cyclist safety will have reduced the attractiveness of some routes that were previously used as part of "rat-running" routes.

The availability of transport mode choice within the Unley, Goodwood and Wayville study area provides an ideal opportunity to develop a new approach to Local Area Traffic Management Plans. The extensive public transport choices and a strategic bike route means that the study area will already provide significant pedestrian and cyclist activity. Ensuring that the access routes to these facilities are safe, direct and of suitable quality can assist in increasing the level and amenity of walking and cycling and improve access to public transport within the study area. This in turn creates an environment that, whilst still maintaining local access and through connectivity for vehicles, is not seen as a high speed short cut for traffic headed towards the CBD.

Figure 2.2 provides a summary of the transport context within and adjacent to the study area.

Figure 2.2: Transport Context of the Study Area



2.1.1 Road Network

The study area is bounded by the arterial roads of Goodwood Road, Greenhill Road and Unley Road to the west, north and east respectively. These roads are under the care and control of the Department of Planning, Transport and Infrastructure (DPTI). Goodwood Road and Unley Road are both identified as Secondary Arterial Roads in the Unley Integrated Transport Strategy, with Greenhill Road identified as a Primary Arterial Road.

Within the local road network, King William Road is identified as a major collector road in the Unley Integrated Transport Strategy. Albert Street, Mitchell Street, Arthur Street and Park Street are identified as local crossing collector roads. All other streets within the study area are classified as local streets.

2.1.2 Public Transport Network

The public transport network in the study area comprises the Glenelg tram line, served by stops at Greenhill Road, Wayville and Goodwood Road, and bus routes along Unley Road, King William Road, Goodwood Road and Greenhill Road.

Table 2.1 summarises the general service frequencies of the public transport networks.

Table 2.1: Public Transport Service Patterns

Public Transport Route	Peak Hour Service	Weekday Daytime Service	Evening Service	Weekend Service
Glenelg Tram	Every 5 to10 minutes	Every 15 minutes	Every 20 minutes	Every 15 minutes
Unley Road	Every 10 minutes	Every 10 to 15 minutes	Every 30 minutes	Every 30 minutes
King William Road	Every 10 minutes	Every 15 minutes	Every 30 minutes	Every 30 minutes
Goodwood Road	Every 5 to10 minutes	Every 10 to 15 minutes	Every 30 minutes	Every 15 minutes
Greenhill Road	Two buses each direction AM Peak One PM peak	Two buses each way between 3 and 4pm	No services	No services

From the above table, the tram and bus services can be generally considered to provide a good service level during most time periods, with the exception of Greenhill Road.

The two bus routes that service the Greenhill Road stops (886 to Mt Barker Park and Ride, and 580 to Richmond) are generally timed to suit school children at Annesley College, with AM services before 9am and PM services between 3 and 4 pm running on school days. The 580 has one PM peak service to Paradise Interchange that may suit workers on Greenhill Road leaving after 5pm, however this level of frequency is unlikely to be attractive to achieve significant patronage.

2.1.3 Cycling and Walking

Wayville and Goodwood suburbs both lie adjacent to the Mike Turtur bikeway which runs alongside the Glenelg tram line from Glenelg to the CBD. The overall route is primarily a mixture of off-road shared paths and mixed traffic on local streets, with the majority of the route having been improved to this standard. The bikeway within the study area operates as an off-road shared path with the exception of a short section of Railway Terrace immediately east of Goodwood Road and the section alongside King William Road on the approach to Greenhill Road.

The bikeway also provides a good quality and well-lit pedestrian route. All of the local streets within the study area generally have some footpath provision, with varying width and surface treatments. A number of the footpaths would however be unsuitable for use by cyclists following the recent legislation change to permit cyclists of all ages to use the footpaths.

There is also a shared use path through Charles Walk alongside Keswick Creek that connects between King William Road to the west and Unley Road to the east within the study area. The path continues through to Fuller Street in the east and provides local street connections to Fullarton Road from the end of the shared use path via Dudley Street and Hone Street.

Local street bicycle routes in the study area are typically marked by the standard Bikedirect small blue triangle signs on lower volume and speed local streets. There is however some additional specific cyclist signage provided on a local street route from Russell Street via Opey Street, Pitchers Lane, Barrow Street, Thomas Street, Mornington Road, Beech Avenue, Austell Street to Little Charles Street, where the signage currently ends.

The 2015 Draft Walking and Cycling Plan (excerpt of network map shown as Figure 2.3) shows the cycling network in the study area. Two key 'Low Traffic Bikeway' routes are included through the study area; Unley Park – City Bikeway via Goodwood (including Joslin Street and Weller Street), and Unley Park – City Bikeway via Unley (including Roberts Street, Hughes Street, Mornington Road and Thomas Street) providing a north-south link from Mitchell / Park Street to Greenhill Road.

Figure 2.3: 2015-2020 Cycling Network Map from the Draft City of Unley Walking and Cycling Plan 2015

The routes within the study area are generally marked as requiring traffic calming treatments, with cyclist separation preferred on King William Road and Mitchell Street / Park Street. The Simpson Parade Shared Path (between King William Road and the Mike Turtur Bikeway) is not currently implemented and the current available route is a local cycling link south to Albert Street and then north up John Street to link to the Mike Turtur bikeway.

2.2 Planning Context

2.2.1 30 Year Plan for Greater Adelaide

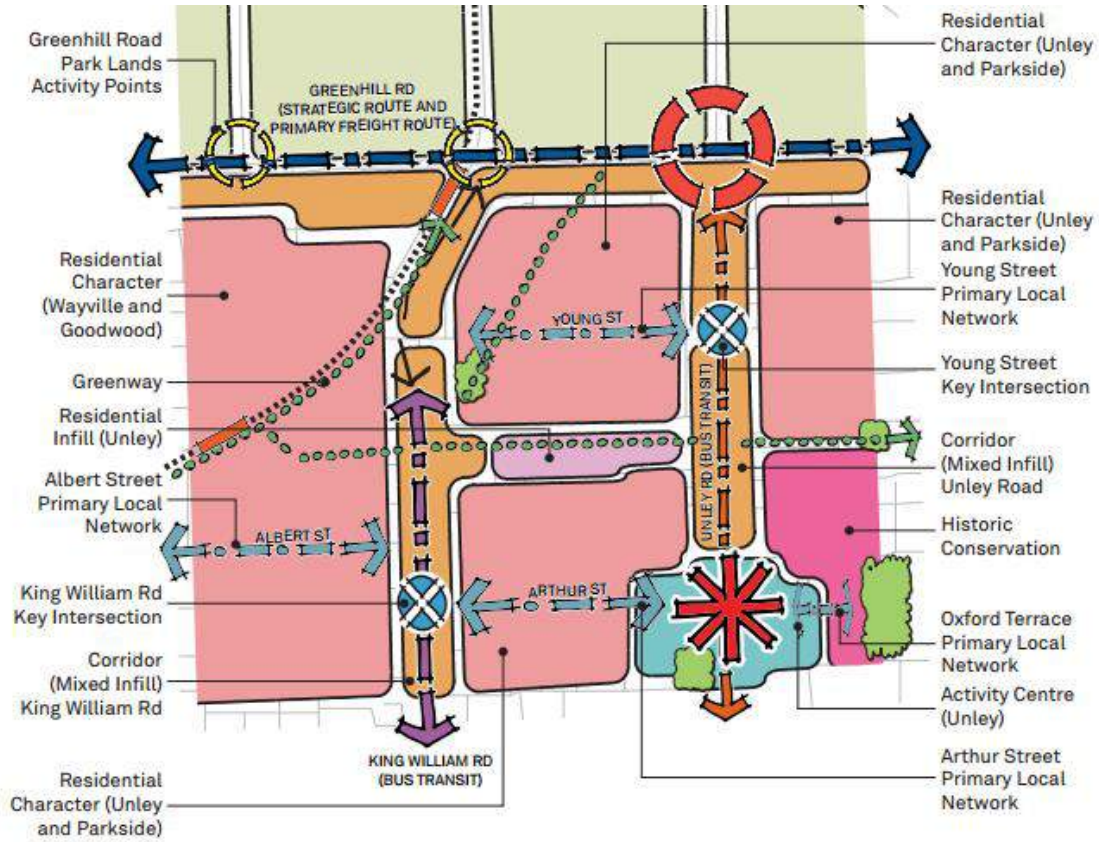
The 30 Year Plan for Greater Adelaide sets out the fundamental principles to manage the growth and change that is forecast to occur in the Greater Adelaide region. The plan seeks to create walkable neighbourhoods with housing located close to jobs, transport and services and a connected transport network which forms the backbone of the urban environment.

The plan recognises that local communities will always want to shape their environment and is therefore a flexible document that can be used as a guiding document for future planning and delivery of services across Greater Adelaide.

2.2.2 Inner Metro Rim Structure Plan

The Inner Metro Rim Structure Plan has been developed in consultation with the Inner Metropolitan Councils to assist the implementation of the 30 Year Plan for Greater Adelaide. The plan is generally consistent with local strategic directions however it is a not a mandatory document. Its intention is to provide a blueprint to guide future Development Plan Amendment processes and Council Strategic Directions Reports to ensure Development Plans align with the objectives of the Inner Metro Rim Structure Plan and 30 Year Plan for Greater Adelaide.

The actions of the Inner Metro Rim Structure Plan relevant to the proposed study are shown.



Activity Centre, Unley Road

Create a quality pedestrian-focused streetscape around the recognised community 'heart' (shopping centre/town hall/civic offices and adjacent open space).

Concentrate new development to provide increased activity and commercial and residential density.

Promote medium to high density mixed-use development (up to 8 storeys) in appropriate locations in the Activity Centre.

Historic Conservation

Reinforce the protection of historic building stock.

Greenway

Improve storm water management, WSUD initiatives and biodiversity.

Provide pedestrian/cyclist connection with surrounding neighbourhood and encourage better integration with built form.

Gateway, Unley Road

Develop the Greenhill Road intersection as a gateway to the city with an increased concentration of activity, quality built form and public realm and greater engagement with the Park Lands.

Encourage commercial and home office use at the street level with residential above (7–8 storeys).

Promote reduced building setbacks and parking provision at the rear for new infill development.

Consider built form transition between Greenhill Road and Unley Road.

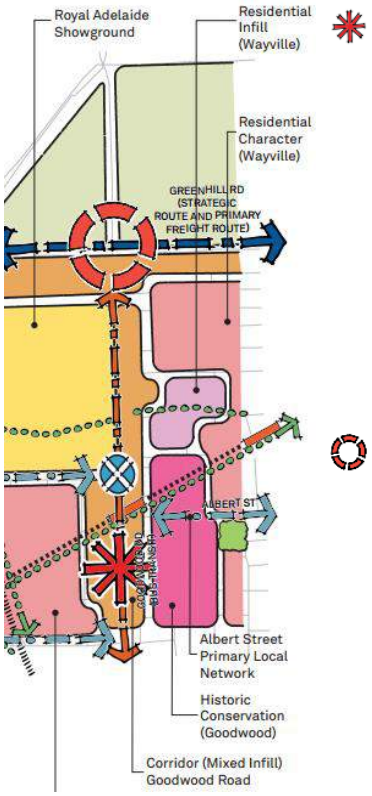
Residential Character, Unley and Parkside

Facilitate gradual infill of non-character sites with low-rise (1–2 storeys) residential redevelopment close to the city and Park Lands where appropriate.

Promote developments that interface sensitively with surrounding established residential areas through lot size/height ratios and other design mechanisms.

Strengthen neighbourhood accessibility with improved streetscape along Young Street and Arthur Street primary local networks and Charles Walk greenway, including connectivity with local open spaces.

Preserve established streetscape character through appropriate building design.



Reinforced Centre, Goodwood Road

Reinforce Goodwood Road as a traditional high street around the Centre, through encouraging a quality public realm streetscape, activated built form, and through maintaining vehicle movement (including providing for high capacity on-road transit services).

Create a quality pedestrian-focused streetscape centre around the existing local services, showgrounds and adjacent community facilities.

Distinguish the centre along the length of the Goodwood Road commerce corridor.

Integrate the local tram stop as part of a quality public realm.

Gateway, Goodwood Road

Develop the Greenhill Road intersection as a gateway to the city with an increased concentration of activity, quality built form and public realm and greater engagement with the Park Lands.

Encourage commercial and home office use at the street level with residential accommodation above (8–10 storeys).

Promote reduced building setbacks and parking provision at the rear for new infill development.

Residential Infill, Wayville

Facilitate gradual infill of non-character sites with low-rise (1–2 storeys) residential redevelopment close to the city and Park Lands where appropriate.

Promote developments that interface sensitively with surrounding established residential areas through lot size/height ratios and other design mechanisms.

Strengthen neighbourhood accessibility with improved streetscape along Albert Street primary local network.

Reinforce neighbourhood focal points, including greater development intensity along the tram corridor and around local tram stops.

Preserve established streetscape character through appropriate building design.

Gateway, Anzac Highway

Develop the Greenhill Road intersection as a gateway to the city with an increased concentration of activity, quality built form and public realm and greater engagement with the Park Lands.

Encourage commercial and home office use at the street level with residential accommodation above (8–10 storeys).

Promote reduced building setbacks and parking provision at the rear for new infill development.

Greenway, Brownhill Creek and Tramway

Improve storm water management, WSUD initiatives and biodiversity.

Provide pedestrian/cyclist connection with surrounding neighbourhood and encourage better integration with built form.

Historic Conservation

Reinforce the protection of historic building stock.

Corridor (Mixed Infill), Goodwood Road.

Reinforce as a popular commerce corridor with commercial and home office shopfronts and residential accommodation above (4–6 storeys).

Promote reduced building setbacks and parking provision at the rear for new infill development.

Corridor (Mixed Infill) Anzac Highway

Reinforce as a popular commerce corridor with commercial and home office shopfronts and residential accommodation above (4–8 storeys).

Promote reduced building setbacks and parking provision at the rear for new infill development.

Key issues to note in relation to opportunities within the study area include:

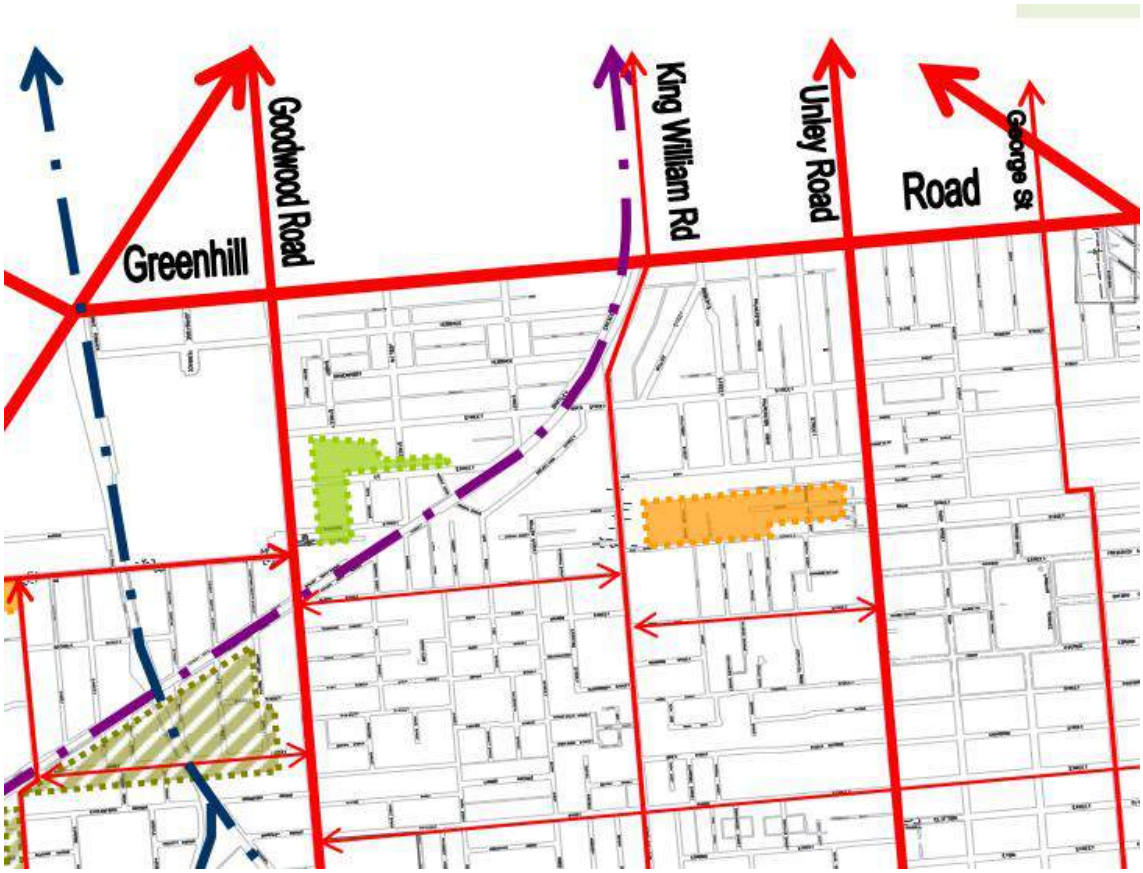
- A strong emphasis on the development of the activity centre within Unley including the shopping centre, Civic Centre and Oxford Terrace;
- The mixed use development opportunities to strengthen the Unley Road, Goodwood Road and King William Road corridors as activity centres;
- Transit opportunities along Goodwood Road, King William Road and particularly Unley Road;
- A high proportion of Historic Conservation and Residential Character areas that are unlikely to generate significant amounts of new development; and
- The development of additional Greenway corridors heading west and north east from King William Road.

2.2.3 The Village Living and Desirable Neighbourhoods Development Plan Amendment

The City of Unley has developed the Draft Village Living and Desirable Neighbourhoods Development Plan Amendment (DPA) to enable new development to be delivered in line with the State Planning Strategy, whilst maintaining local heritage and character through a balanced and tailored approach to state policy that supports necessary development within appropriate areas.

The Draft Village and Desirable Neighbourhoods DPA identifies specific areas within the study area for residential enhancement and/or regeneration.

The proposed residential zones are shown.



Following the first round of public consultation for this DPA, it is likely that significant changes will be made to the proposals. However, these changes are unlikely to materially affect traffic movements through the study area. This supports the wider DPA and confirms that there are likely to be two areas where more significant residential development is likely to take place.

2.3 Background Documents

2.3.1 Integrated Transport Strategy

In 2002, the City of Unley completed the Unley Integrated Transport Strategy. This set out a comprehensive assessment of the city in terms of transport access and demands for all transport modes. This document identified the pressure of through traffic on the north-south routes through Unley, the opportunities and limitations of the public transport networks and the difficulties for pedestrians and cyclists from an access and road safety perspective. Many of the actions identified remain valid today and in the context of the 30 Year Plan for Greater Adelaide and the Inner Metro Rim Structure Plan, the need for their implementation could be considered more pressing

Actions were set out within the document under six strategies:

i **Strategy 1 – Reducing the pressure on Unley**
This strategy identified strands relating to Arterial Road hierarchies, Travel Demand Management, People not Car movement, Transit Oriented Development and Smart Local Travel. This strategy also included a specific action to consider, in conjunction with the State Government, *"options to improve the transport hub and community facilities surrounding Goodwood Railway Station."* This was identified in the context of anticipated urban regeneration in the vicinity of the station.

ii **Strategy 2 – Managing transport corridors and their associated land use environment**
This strategy introduced the concept of route corridors, and specific, integrated corridor management plans reflecting the need to consider each on its own merits and activities, including variations by time of day/week. There was no specific identification or assessment of the Leah Street/Leader Street corridors.

iii **Strategy 3 – Preserving and Enhancing the City of Villages**
This strategy considered the function and role of each of the primary village centres.

iv **Strategy 4 – Preserving and Enhancing the Quality of the Local Environment**
This strategy considered the approach and identification of the residential precincts within the city, proposing integrated approaches to development and transport. Strategy 4.2 and 4.3 are considered to still provide relevant guidance informing this study and these are noted.

- 4-2 Conditions for residential Precincts
  - Target vehicle speed is 40 km/h or less;
  - The desired driver behaviour is achieved through design and management of the road space;
  - Traffic volumes are generally less than 2,000 vpd[1];
  - Connectivity without attracting through traffic;
  - Accessibility for local bus; and
  - Safe movement of pedestrians and cyclists.
- 4-3 An action plan giving priority to street and intersection treatment, using the following criteria
  - Streets within precincts with vehicle speeds over 40 km/h;
  - Wide carriageways;
  - Long sections;
  - Intersections with an accident record; and
  - Narrow footpaths.

v **Strategy 5 – Improving local accessibility safety & convenience, and increase choice in transport mode**
This strategy provided further details of road hierarchies and functions for local streets, including traffic volume and speed guidelines. It also proposed criteria for local pedestrian accessibility standards and improvements and local and strategic cycle access to better mitigate the increasing dominance of vehicle based planning.

vi **Strategy 6 – A single management strategy**
This strategy recognised the need for the transport and land use functions to be properly integrated to achieve the best outcomes.

2.3.2 Pedestrian and Bicycle Plan

The 2015 Draft Walking and Cycling Plan was prepared for the City of Unley in 2015 as a follow on document from the 2005 Pedestrian and Bicycle Plan, which followed on from the ITS. It provided an extremely comprehensive assessment of the pedestrian and cycle networks throughout the City, with an individual assessment provided on many local route streets. Many of the issues raised and the principles of proposed upgrades are reflected by the LATM Plan.

[1] The ITS also identifies at page 18 that "local streets with traffic volumes of more than 1000 vehicles per day are considered to have an unacceptable exposure to traffic."

3. Existing Conditions - Issues

3.1 Introduction

Despite being ideally located to take advantage of the transport opportunities, the study area is not without its issues. Existing data has been used to assess the operational characteristics of the streets and this has been supported by on-site observations. An extensive community consultation survey was also undertaken by the City of Unley and this has provided valuable information to consider against the available data.

The sections below consider each of the transport components within the study area, identifying the available data and community comments and concerns to evaluate the extent of the problem.

3.2 Urban Design

As part of the overall context the urban design fabric of the study area provides a framework that both determines the existing conditions and can be used to frame future opportunities. This is particularly relevant when considering the "Link and Place" assessment presented in the next section. There are a number of components to the urban design that inform the transport considerations.

The street layout within the suburbs is largely based on the traditional grid network which makes it permeable for vehicles and pedestrians. The public transport corridors create some limitations on this, but also provide other opportunities for creating movement corridors and local places.

There are some existing formal and informal landscaping and streetscape locations, with Soutar Park, Wayville Reserve, Simpson Parade Reserve, Florence Street Park, North Unley Play Park, Morrie Harrell Playground, Boothby Court Park and Soldiers Memorial Gardens providing formal landscape locations and opportunities. There have also been landscape and streetscape treatments alongside the Mike Turtur bikeway and Charles Walk.

Many of the streets within the suburbs have only limited street lighting resulting in locations which can be very dark and creating difficulties with narrow footpaths and potential obstructions. Some of the streets associated with the Mike Turtur bikeway have provided some upgrades to street lighting, creating improved conditions compared to many other streets.

The study area has a large number of street trees, with many of the local streets having a well-defined tree corridor, providing shade, shelter and amenity. There are issues with some tree locations however where they create narrow or damaged footpaths and impact on the effectiveness of the street lighting that is available. Pruning of trees and other landscaping should ensure that they do not encroach on footpaths and roadways.

The use of street furniture of various functions can also add to the streetscape value of a street and local area. There is currently little in the way of incidental street furniture within the study area, with the tram stops and reserves providing the main opportunities, related to their primary transport or recreation functions.

3.3 Road Network

In May 2015, the section of Greenhill Road adjoining the study area was upgraded with works resulting in alterations to the design and location of median openings, which in turn resulted in changes to access into and out of the study area. City of Unley has collected additional traffic data from a number of streets within the study area flowing the completion of these works. While the initial issues assessment was undertaken based on responses by residents before the Greenhill Road upgrade, the final options reflect the traffic data collected and observations undertaken after the Greenhill Road upgrade was completed.

3.3.1 Traffic Volumes

This City of Unley has recent traffic data available on much of its local street network and this is shown in Figure 3.1 and Figure 3.2. The study area is split into two figures showing the west side of King William Road and the east side of King William Road respectively. The figures reflect the most recent data available for each street.

Figure 3.1: Traffic Volumes in the Study Area – West of King William Road

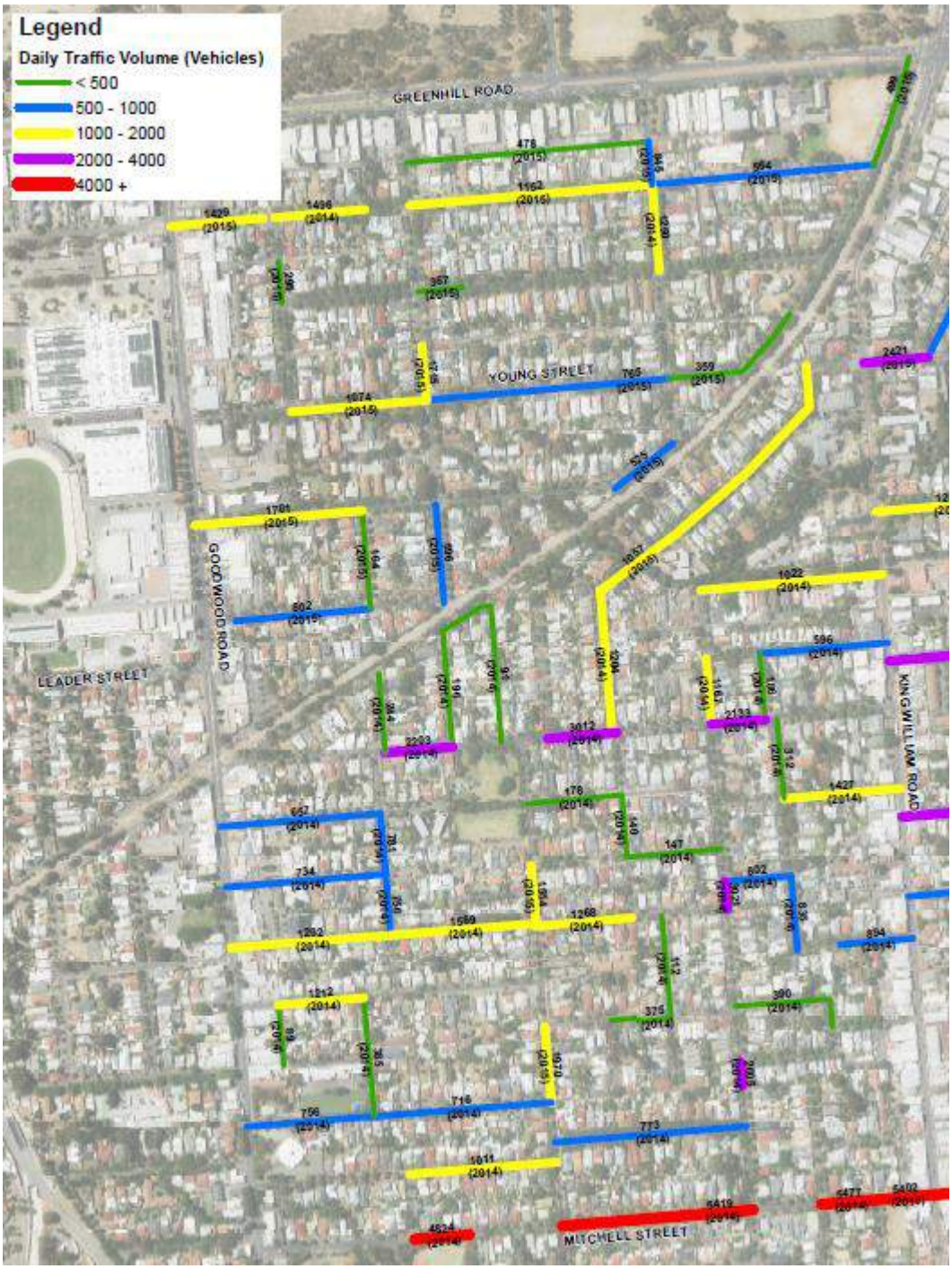


Figure 3.2: Traffic Volumes in the Study Area – East of King William Road

The Unley Integrated Transport Strategy (ITS) categorises roads as L1 to L3 as noted:

- L1 – 3,000 to 8,000 vehicles per day and a speed range of 40-60 km/h;
- L2 – 2,000 to 3,000 vehicles per day and a maximum speed of 40 km/h; and
- L3 – 1,500 to 2,000 vehicles per day and a maximum speed of 40 km/h.

The existing data confirms that Arthur Street, Mitchell Street and Park Street are the three busiest roads, falling in the L1 road category ranges. Arthur Street carries up to 5,200 vehicles per day west of Unley Road, Mitchell Street carries up to 5,500 vehicles per day (between Hardy Street and Weller Street), and Park Street carries up to 5,500 vehicles per day east of King William Road.

The use of Mitchell Street and Park Street as part of a through route from east to west results in high volumes of through traffic at certain times of the day, which then transfers on to other local streets. Mitchell Street also attracts through traffic between Goodwood Road, King William Road and Unley Road as well as access traffic to the commercial properties fronting it.

Speed humps have been in place on Mitchell Street and Park Street for a number of years to mitigate the volume and speed of traffic. This has had some success in achieving these objectives, but is not wholly supported by residents in the local area as the best solution as it has also resulted in transfer of traffic to other local streets. Only 3 out of 10 respondents who specifically commented on the preference for keeping or removing the speed humps wanted them to remain on Mitchell Street. Traffic volume was reported as a major problem by 1and a minor problem by 5 out of 7 respondents on Mitchell Street, even with the speed humps in place. Traffic volume was reported as a major problem by 9 and a minor problem by 3 out of 15 respondents on Park Street, even with the speed humps in place.

Similarly, the use of Arthur Street as part of a through route from east to west results in high volumes of through traffic at certain times of the day, which then transfers on to other local streets. Arthur Street also attracts through traffic between King William Road and Unley Road as well as access traffic to the commercial properties fronting it, particularly Unley Shopping Centre where the primary car parking areas both access off Arthur Street which will therefore be used as the primary access route to the centre by traffic from the west. Traffic volume was reported as a major problem by 7 out of 8 respondents on Arthur Street.

Albert Street and Weller Street (between Albert Street and Mitchell Street) both fall into the L2 road category ranges. Albert Street (between Foundry Street and John Street) and Weller Street (between Ophir Street and Dollman Street) both carry up to 3,000 vehicles per day.

Weller Street provides a north to south route between Albert Street and Mitchell Street, parallel to King William Road. 12 out of 15 respondents reported traffic volumes as a major problem on Weller Street.

Albert Street acts as an east to west link between Goodwood Road and King William Road, although access to/from Goodwood Road is restricted to left in / left out only. Speed humps have also been in place on Albert Street for a number of years to mitigate the volume and speed of traffic. 19 out of 24 respondents reported traffic volumes as a major problem on Albert Street.

Several streets fall into the L3 category with traffic volumes generally between 1,500 and 2,000 vehicles per day. These streets are Mary Street and Young Street in Unley, Hardy Street in Goodwood and Joslin Street (between Davenport Terrace and Young Street) in Wayville. The section of Young Street between King William Road and Miller Street carries some 2,400 vehicles per day but volumes to the east drop under 2,000 vehicles per day.

All other roads within the study area were categorised as local streets, with traffic volumes below the L3 category of 1,500 vehicles per day. While under 1,000 vehicles per day is generally

considered appropriate for local streets, volumes up to around 1,500 vehicles per day could be expected in an Inner Metro area such as the study area. Depending on the nature of the street and the speed on the traffic, volumes up to 1,500 may not create a significant impact. A number of the streets are likely to include vehicles driving in the area to park for public transport to the CBD as well as to access local shopping precincts.

Many other local streets were reported where traffic volume was more often reported as a major problem than a minor problem or no problem. Whilst there could be some localised issues on these streets in the peak hours, the overall recorded volumes do not indicate a persistent problem and generally more respondents reported minor or no problems.

3.3.2 Peak Hour Traffic Volumes

Typically, peak hour traffic is expected to be around 10% of the daily traffic volume. However, in many of the streets in Unley, Wayville and Goodwood the peak hour volume is a much higher percentage, indicating potential rat running through these streets. Where rat running was nominated as a concern by survey respondents the individual streets peak volume to daily volume ratio has been checked to confirm potential rat running routes. GTA notes the daily volumes available at the time of the peak to daily volume ratio analysis did not reflect the changes to Greenhill Road median openings and thus the most recent data from 2014 or earlier was used in the analysis presented in this section.

As well as the diversion of cars, increasing incidents of larger vehicles diverting on to Ophir Street, Boffa Street, Beech Avenue and Arthur Street (as through routes or for un/loading) were reported by residents.

Surveys have been undertaken to identify origin points of traffic within each suburb of the study area and their respective routes through the area. This is particularly relevant to investigate the impact on the peak hour traffic volumes also analysed with the recent changes to Greenhill Road.

An error of around 5% for each survey is present due to missed numberplates as well as vehicles not being matched within a reasonable time to be considered rat running (i.e. matched in excess of 8 minutes between survey locations). The majority of matched numberplates were between 0 to 4 minutes at the various survey locations.

The below analyses of the three suburbs surveys and peak period traffic volumes highlight the major routes for cut through traffic, as well as some routes with more minor volumes of matched through traffic. These lower volumes routes would have the potential to attract higher numbers if the more popular routes are treated to discourage rat running and this must be considered in any potential treatments. Generally, there are many possible routes for rat runners due to the permeability of the study area, in particular Goodwood.

Unley

The southern area of Unley shows very little volume related evidence of rat running in both AM and PM peaks and thus has been omitted from the figures and analysis below. Arthur Street is the only street in the southern area of Unley with particularly high volumes, carrying up to 5,300 vehicles per day in sections, with around 8% of that in the AM Peak Period, and 10% of that in the PM Peak. A high proportion of this traffic is likely to be vehicles using Arthur Street to access Unley Shopping Centre, State Swim and the Community Centre.

AM Peak Period

Six locations were surveyed in Unley on Thursday 11th June 2015 during the AM peak period (7:30am to 9:00am) to identify the origin points of traffic within the area and the routes that are subsequently taken through the study area.

Figure 3.3 and Figure 3.4 summarise the recorded routes for traffic through Unley in the AM peak period. Figure 3.3 shows the percentage of the daily volume recorded on the streets considered as potential rat running routes, as well as the survey locations used to identify the key routes through the areas. Figure 3.4 shows the routes that most matched vehicles used through the area.

Figure 3.3: Potential Traffic Routing through Unley (AM Peak)

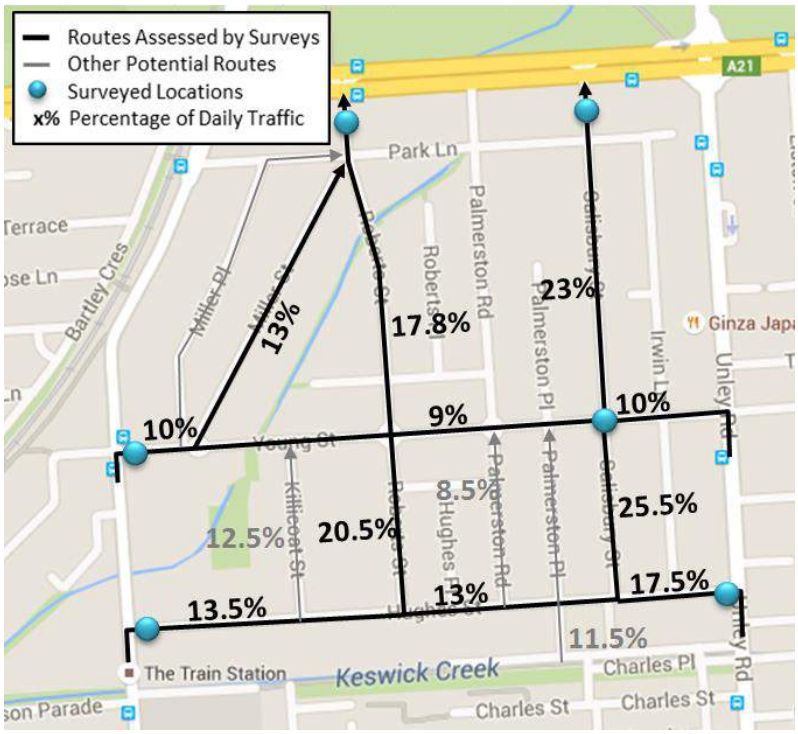
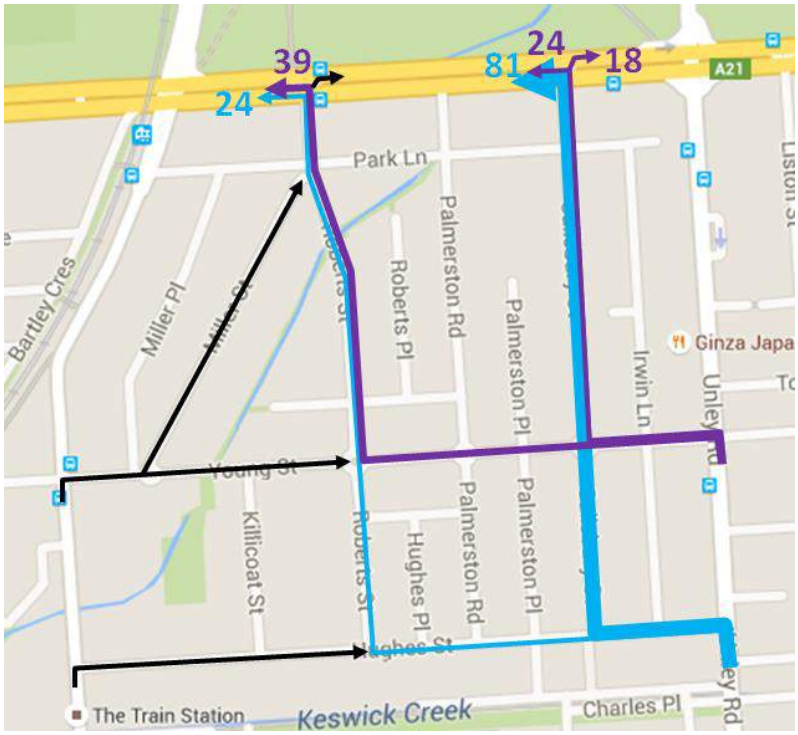


Figure 3.4: Major Routes of Traffic Matched Through Unley (AM Peak)



Of the 520 number plates recorded entering the area via Young Street (at King William Road and Unley Road) and Hughes Street (at King William Road and Unley Road), 204 were subsequently matched leaving the area via Roberts Street and Salisbury Street onto Greenhill Road. This makes for around 39% of the vehicles recorded entering the area subsequently recorded exiting the area.

Figure 3.5 shows the most significant routes and the identified volumes for rat running (i.e. vehicles recorded entering and subsequently exiting the area via these streets) during the AM Peak Period.

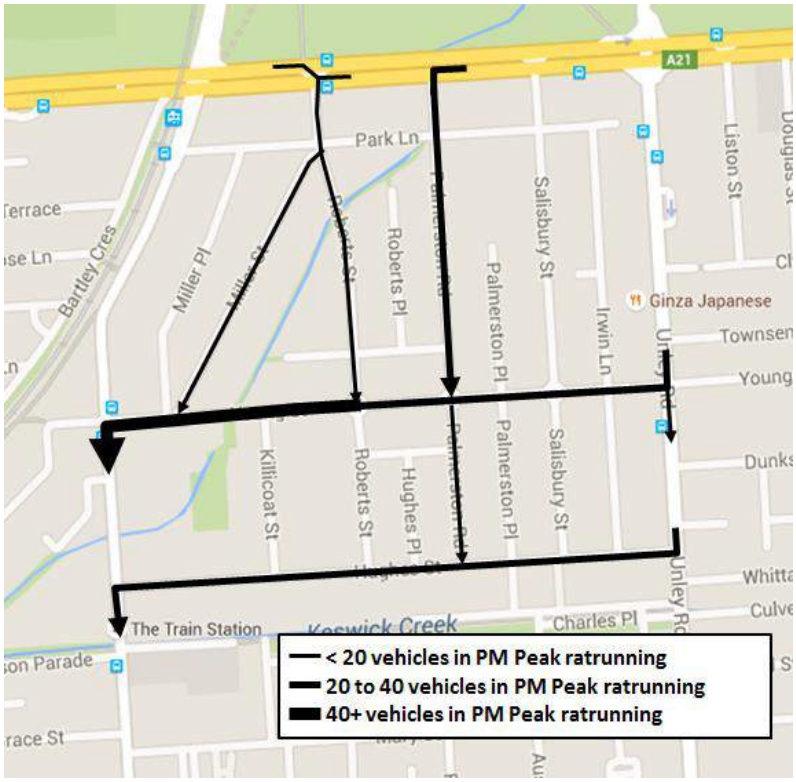
The majority of rat running vehicles accessed the area from Young Street and Hughes Street via Unley Road, and proceeded to turn left onto Greenhill Road. It is anticipated that a portion of these would then turn right onto Peacock Road. This is effectively vehicles avoiding the intersection of Unley Road and Greenhill Road.

We note that none of the 80 vehicles that were recorded eastbound on Young Street past Miller Street were matched at the intersections of Roberts Street or Salisbury Street and Greenhill Road. Some of these vehicles could have potentially been using Young Street to move between King William Road and Unley Road, instead of continuing on King William Road to Greenhill Road.

PM Peak Period

From the AM peak period survey results and the traffic volumes available in the area (recorded by Council and Greenhill Road intersection counts by DPTI) Figure 3.5 summarises the anticipated routes for traffic through Unley in the PM peak period. Specific origin and destination surveys were not completed for this time period as the route choice is more limited and can reasonably be derived from the AM peak surveys and the PM peak traffic counts.

Figure 3.5: Anticipated Traffic Routing through Unley (PM Peak)



Around 365 vehicles were recorded in the AM peak hour exiting the suburb at the intersections of Greenhill Road with Roberts Street and Salisbury Street (56% of these being matched entering the suburb). Counts at the intersections of Greenhill Road with Roberts Street and Salisbury Street indicate around 90 vehicles in the PM peak period enter the suburb via Roberts Street and Salisbury Street, of which 56% (50 vehicles) are likely to be rat running through the area.

Figure 3.5 above suggests that while some vehicles use Roberts Street to avoid the intersections of Greenhill Road and King William Road or Unley Road, the numbers of vehicles doing this will be fewer than 20 in the peak hour. Similarly fewer than 20 vehicles use Miller Street to avoid the intersection of Greenhill Road and King William Road.

More vehicles (in the order of 20 to 40 vehicles in the peak hour) are anticipated to be using Palmerston Road to avoid the intersection of Greenhill Road and King William Road, with most then using Young Street to access King William Road.

Some additional rat running from Unley Road to King William Road westbound on Young Street and Hughes Street is likely to be occurring, with drivers avoiding the intersection of Greenhill Road and King William Road. This is anticipated to be around 20 to 40 vehicles in the PM peak hour on each road based on volumes recorded on these roads by Council as well as the AM peak period surveys conducted by GTA Consultants.

Goodwood

AM Peak Period

Five locations were surveyed in Goodwood on Wednesday 10th June 2015 during the AM peak period (7:30am to 9:00am) to identify the origin points of traffic within the area and the routes that are subsequently taken through the study area.

Figure 3.6 and Figure 3.7 summarises the recorded routes for traffic through Goodwood in the AM peak period. Figure 3.6 shows the percentage of the daily volume recorded on the streets considered as potential rat running routes, as well as the survey locations used to identify the key routes through the areas. Figure 3.7 shows the routes, most matched vehicles use to cut through the area.

Figure 3.6: Potential Traffic Routing through Goodwood (AM Peak)

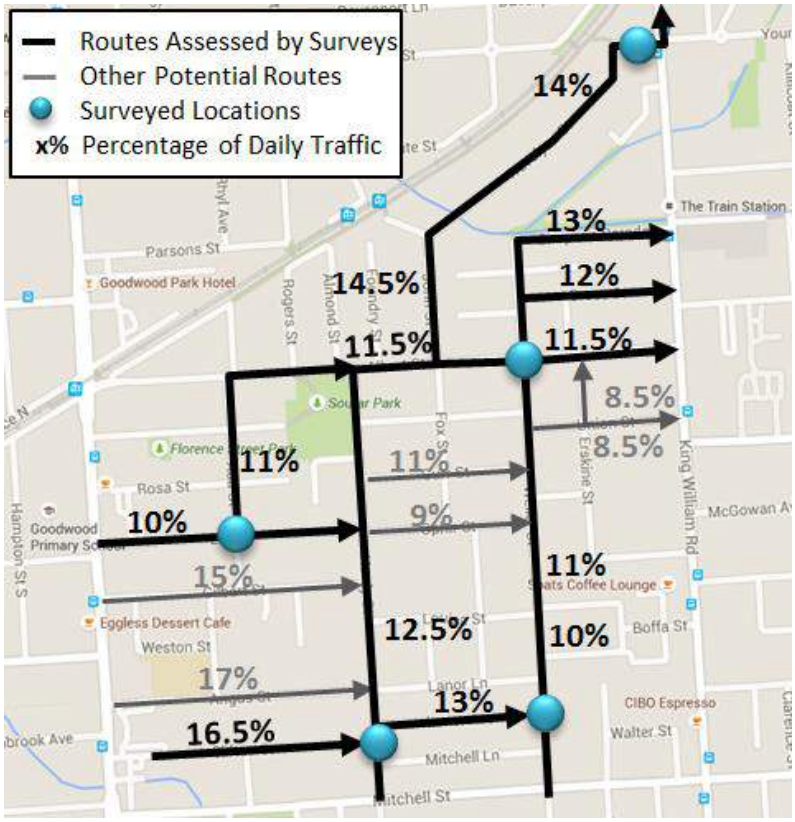


Figure 3.7: Major Routes of Traffic Matched Through Goodwood (AM Peak)

Angus Street and Gilbert Street were omitted from the surveys due to the proximity to St Thomas School (and Goodwood Primary School in the case of Gilbert Street) having a likely effect on the volume of traffic using those roads in the AM peak period. Some traffic may use these streets to cut through the area; however more is anticipated to be associated with school drop off.

Of the 464 number plates recorded entering the area via Weller Street, Hardy Street, Clifton Street and Lily Street, 192 were subsequently matched leaving the area via Albert Street (recorded at the Weller Street intersection), Simpson Parade, Grace Street and Young Street. This makes for around 41% of the vehicles recorded entering the area subsequently recorded exiting the area. Some additional traffic was counted turning right onto Union Street to avoid the Weller Street / Albert Street intersection, which could potentially increase the rat running observed to around 50% of entering traffic subsequently observed exiting the area.

Figure 3.6 in particular highlights the permeability of Goodwood, with many options for entering and exiting the suburb available to potential rat runners. While many of these streets may have smaller numbers of rat runners they are potential routes to which traffic may transfer if treatments are applied to the more popular routes.

Figure 3.7 shows the routes with the highest volumes of identified rat running (i.e. vehicles recorded entering and subsequently exiting the area via these streets) during the AM Peak Period. Clifton Street notably has a considerable number of vehicles that were subsequently matched exiting the area. Notably vehicles used Clifton Street and then Lanor Avenue to travel from west to east, with some then being matched on Albert Street; however some may have dispersed through to King William Road.

GTA also notes that during the time of the survey on Wood Street (to the south of the Weller Street/Mitchell Street intersection) vehicles were being diverted to King William Road before

reaching Mitchell Street due to a burst water main. This may have reduced the number of vehicles coming up Weller Street as no vehicles from Wood Street could continue up onto Weller Street.

Based on the PM peak survey, around 25 vehicles were matched routing through the area then using Weller Street to travel south onto Wood Street. Based on this a further 25 vehicles could be anticipated in the weekday morning peak had Wood Street being open to through traffic. GTA notes that a proportion of traffic using Wood Street in particular may be local traffic from the Millswood and Unley Park areas travelling north through the adjoining suburbs rather than making their way to Goodwood Road or King William Road more locally.

PM Peak Period

Six locations were surveyed in Goodwood on Tuesday 9th June 2015 during the PM peak period (4:00pm to 6:00pm).

Figure 3.8 and Figure 3.9 summarises the recorded routes for traffic through Goodwood in the PM peak period. Figure 3.8 shows the percentage of the daily volume recorded on the streets considered as potential rat running routes, as well as the survey locations used to identify the key routes through the areas. Figure 3.8 shows the routes the most matched vehicles use to travel through the area.

Figure 3.8: Potential Traffic Routing through Goodwood (PM Peak)

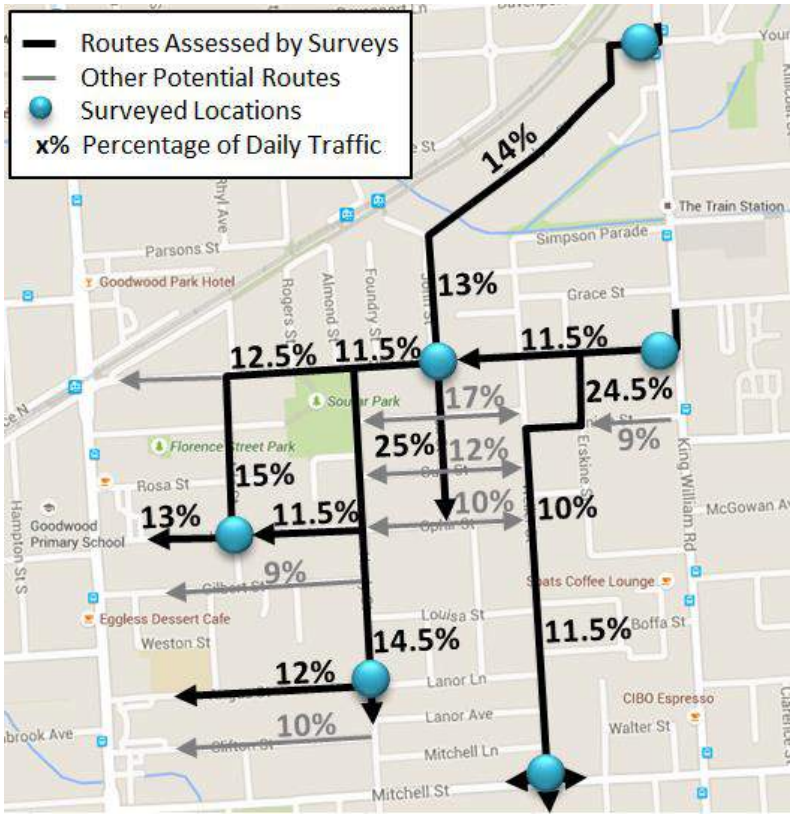
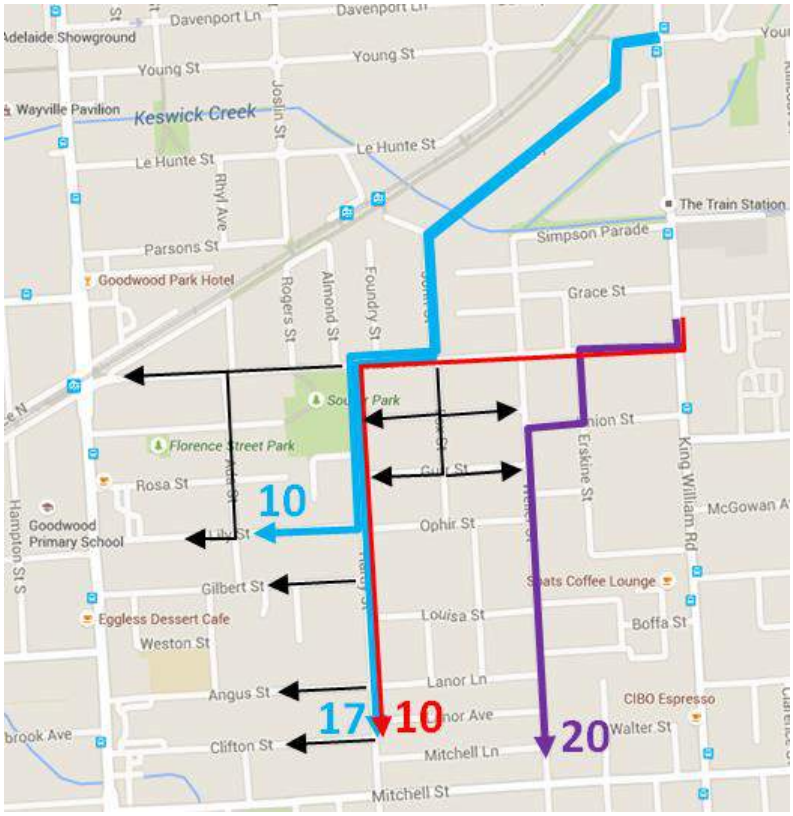


Figure 3.9: Major Routes of Traffic Matched Through Goodwood (PM Peak)



Of the 341 numberplates recorded entering the area via Young Street and Albert Street, 94 were subsequently matched leaving the area via Lily Street, Hardy Street, Angus Street and Weller Street. This makes for 28% of the vehicles recorded entering the area subsequently recorded exiting the area.

Figure 3.8 in particular highlights the permeability of Goodwood, with many options for entering and exiting the suburb available to potential rat runners. While many of these streets may have smaller numbers of rat runners they are potential routes to which traffic may transfer if treatments are applied to the more popular routes. Simpson Parade was excluded as an origin survey due to the PM peak right turn bans at this intersection, although it is known that a number of drivers do not adhere to the ban.

Of the vehicles matched entering the area at Young Street and then again at the intersection of Fox Street / John Street / Albert Street, 38 vehicles were not matched again on Lily Street, Hardy Street, Angus Street or Weller Street exiting the area. Some of these vehicles are likely to have been accessing local residences south of Albert Street; however all of these chose to use Young Street / Trevelyan Street / John Street as a shortcut to avoid King William Road. It is also likely that a portion of these vehicles (anticipated to be around 30% based on other survey sites) exited the area via Albert Street or Gilbert Street.

Of the vehicles matched entering the area via Albert Street, and matched again heading west through the intersection of Fox Street / John Street / Albert Street 61 vehicles were not matched again on Lily Street, Angus Street or Hardy Street exiting the area. Some of these vehicles are likely to have been accessing local residences in the western side of the suburb. It is also likely that a portion of these vehicles (anticipated to be around 30%) exited the area via Albert Street or Gilbert Street.

The addition of these potential rat runners is anticipated to bring the total percentage of rat running in the suburb in the PM peak to around 35% (around 120 vehicles).

Figure 3.9 shows that the routes with the highest volumes confirmed rat running (i.e. vehicles recorded entering and subsequently exiting the area via these streets) during the PM Peak Period. Generally, vehicles were dispersed across the suburb with Hardy Street generally carrying the most rat runners south to Mitchell Street. However, the overall volumes on any individual street are not considered excessive.

Wayville

AM Peak Period

Four locations were surveyed in Wayville on Thursday 4th June 2015 during the AM peak period (7:30am to 9:00am) to identify the origin points of traffic within the area and the routes that are subsequently taken through the study area.

Figure 3.10 and Figure 3.11 summarise the recorded routes for traffic through Wayville in the AM peak period. Figure 3.10 shows the percentage of the daily volume recorded on the streets considered as potential rat running routes, as well as the survey locations used to identify the key routes through the areas. Figure 3.11 shows the routes the most matched vehicles use to cut through the area.

Figure 3.10: Potential Traffic Routing through Wayville (AM Peak)

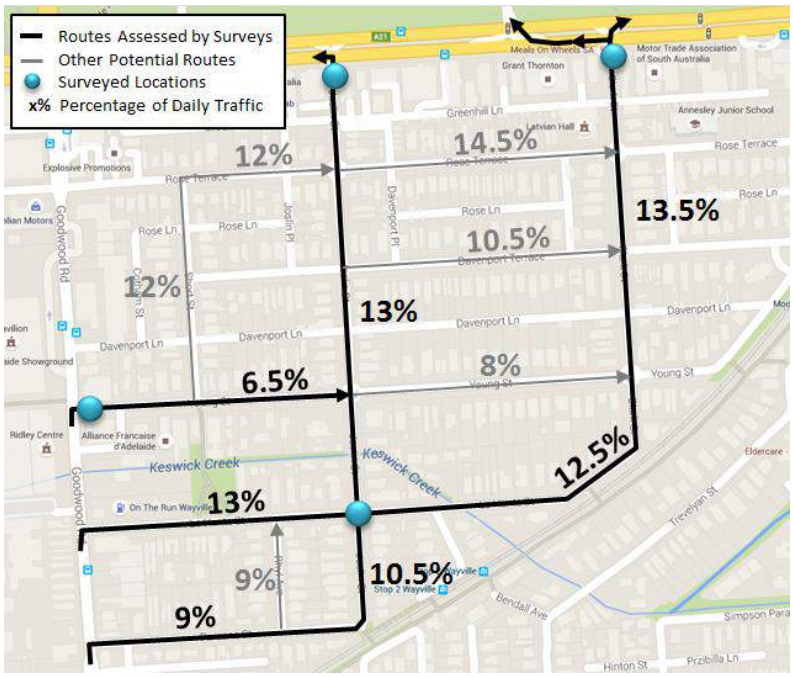
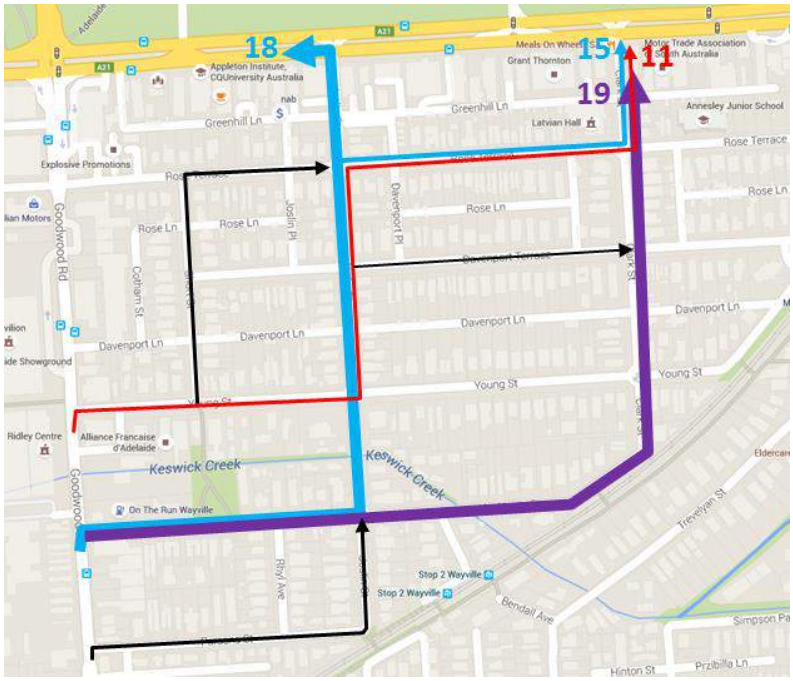


Figure 3.11: Major Routes of Traffic Matched Through Wayville (AM Peak)



Of the 331 numberplates recorded entering the area via Parsons Street, LeHunte Street and Young Street, 90 were subsequently matched leaving the area via Joslin Street and Clark Street. This makes for 27% of the vehicles recorded entering the area subsequently recorded exiting the area.

As shown on Figure 3.10 of the vehicles recorded leaving the area (after entering) the majority exited via Clark Street onto Greenhill Road. Around a third of vehicles exiting at Clark Street were noted as proceeding to turn right onto Sir Lewis Cohen Drive.

The above indicates that the majority of traffic passing through the suburb in the AM peak period is more localised traffic accessing residences as well as the businesses along Greenhill Road and Annesley College on Rose Terrace, with some rat running to avoid the traffic signals at Greenhill Road / Goodwood Road observed. We note that the recent changes to the configuration of Greenhill Road (in particular the closure of right turn access to/from Joslin Street) will have changed the nature of rat running through the area since the community consultation took place so the previous AM rat running problem may have previously been greater than the observed level.

PM Peak Period

Six locations were surveyed in Wayville on Wednesday 10th June 2015 during the PM peak period (4:00pm to 6:00pm) to identify the origin points of traffic within the area and the routes that are subsequently taken through the study area.

Figure 3.12 and Figure 3.13 summarises the recorded routes for traffic through Wayville in the PM peak period. Figure 3.12 shows the percentage of the daily volume recorded on the streets considered as potential rat running routes, as well as the survey locations used to identify the key routes through the areas. Figure 3.13 shows the routes the most matched vehicles use to cut through the area.

Figure 3.12: Potential Traffic Routing through Wayville (PM Peak)

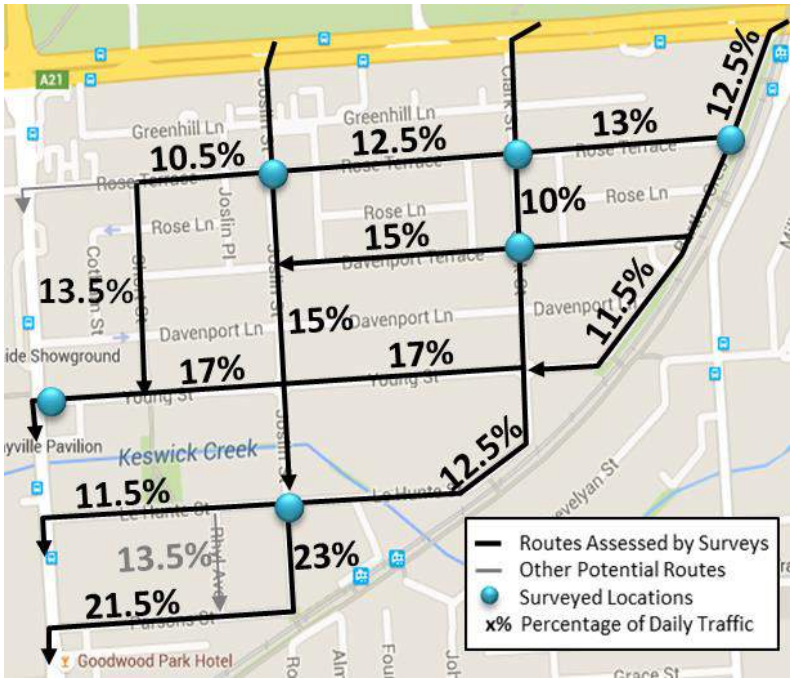
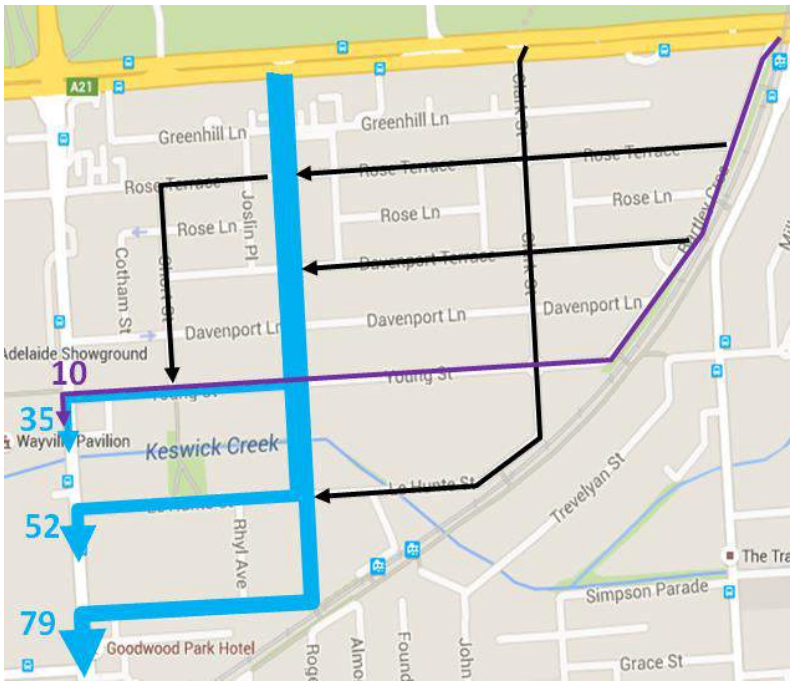


Figure 3.13: Major Routes of Traffic Matched Through Wayville (PM Peak)



Of the 680 numberplates recorded entering the area via Bartley Crescent, Clark Street and Joslin Street, 229 were subsequently matched leaving the area via Young Street, LeHunte Street or Parsons Street. This makes for 34% of the vehicles recorded entering the area subsequently recorded exiting the area.

Figure 312 shows that the routes with the highest volumes confirmed rat running (i.e. vehicles recorded entering and subsequently exiting the area via these streets) during the PM Peak Period.

Of the vehicles recorded entering and exiting the area the majority used Joslin Street to avoid the intersection of Greenhill Road and Goodwood Road. 173 of the 400 vehicles recorded coming into the suburb from Greenhill Road onto Joslin Street subsequently exited the suburb at Young Street, LeHunte Street or Parsons Street (43%).

Typically, the other streets (Bartley Crescent, Davenport Terrace, Clark Street and LeHunte Street and Young Street east of Joslin Street) had less than 20 vehicles using each street that were recorded both entering and exiting the area, with a total of 56 rat running vehicles dispersed between these streets to then exit via Young Street, LeHunte Street or Parsons Street. This shows the permeability of Wayville, and reinforces the notion that treatments on Joslin Street could cause transfer of rat running traffic to a variety of other routes.

3.3.3 Traffic Speed

All of the Council streets within the study area are subject to the City of Unley wide 40 km/h speed limit. However, the recorded vehicle speeds confirm that there are a number of streets where there is a significant volume of traffic travelling above 40 km/h. Figure 3.14 and Figure 3.15 summarise the recorded average and 85th percentile vehicle speeds, identifying them in four bands. The study area is split into two figures showing the west side of King William Road and the east side of King William Road respectively. The data presented is the most recent data available for each street, with the most recent 2015 data reflecting the data collected after the Greenhill Road Upgrade.

Figure 3.14: Traffic Speeds in the Study Area – West of King William Road

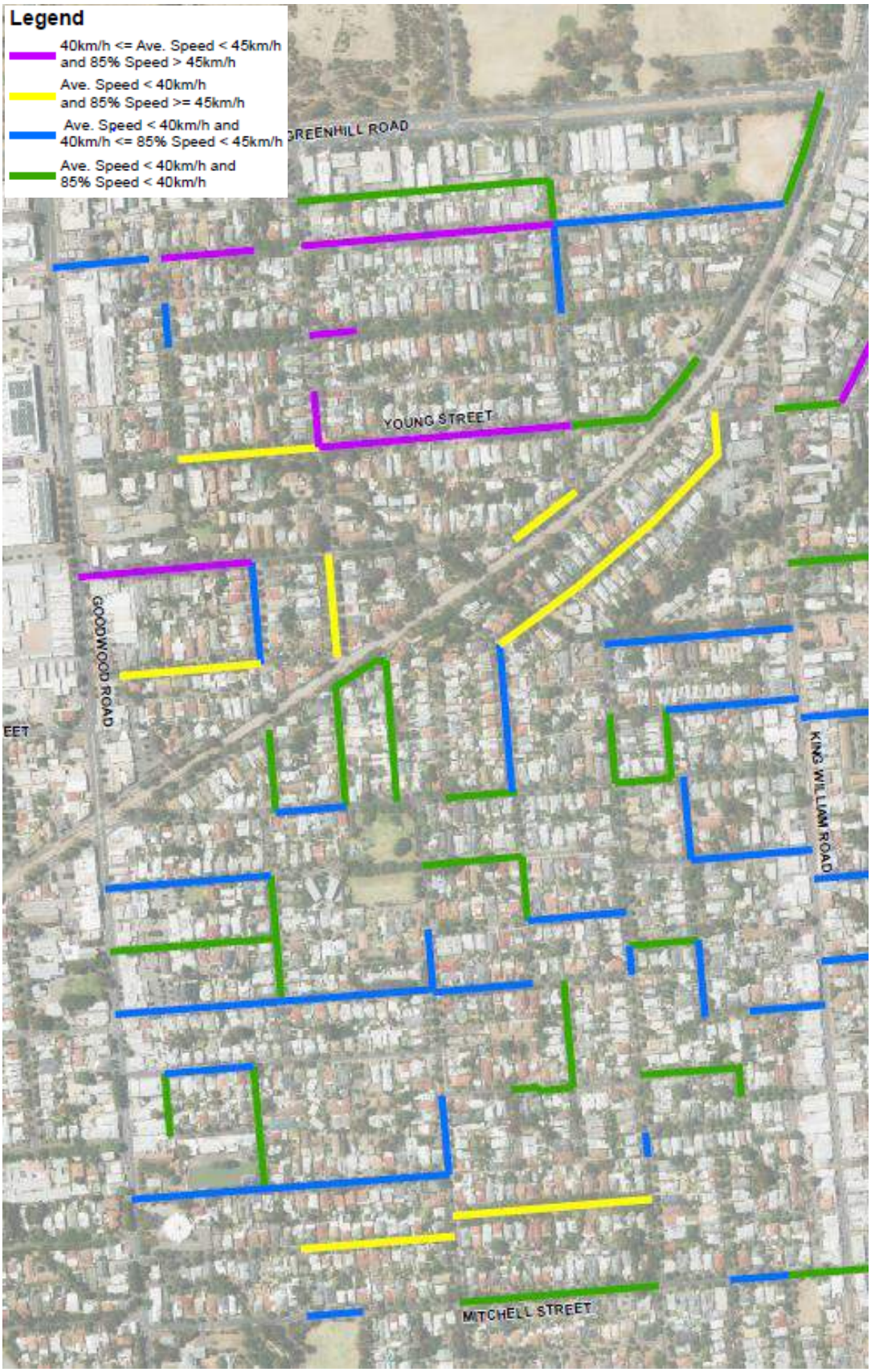
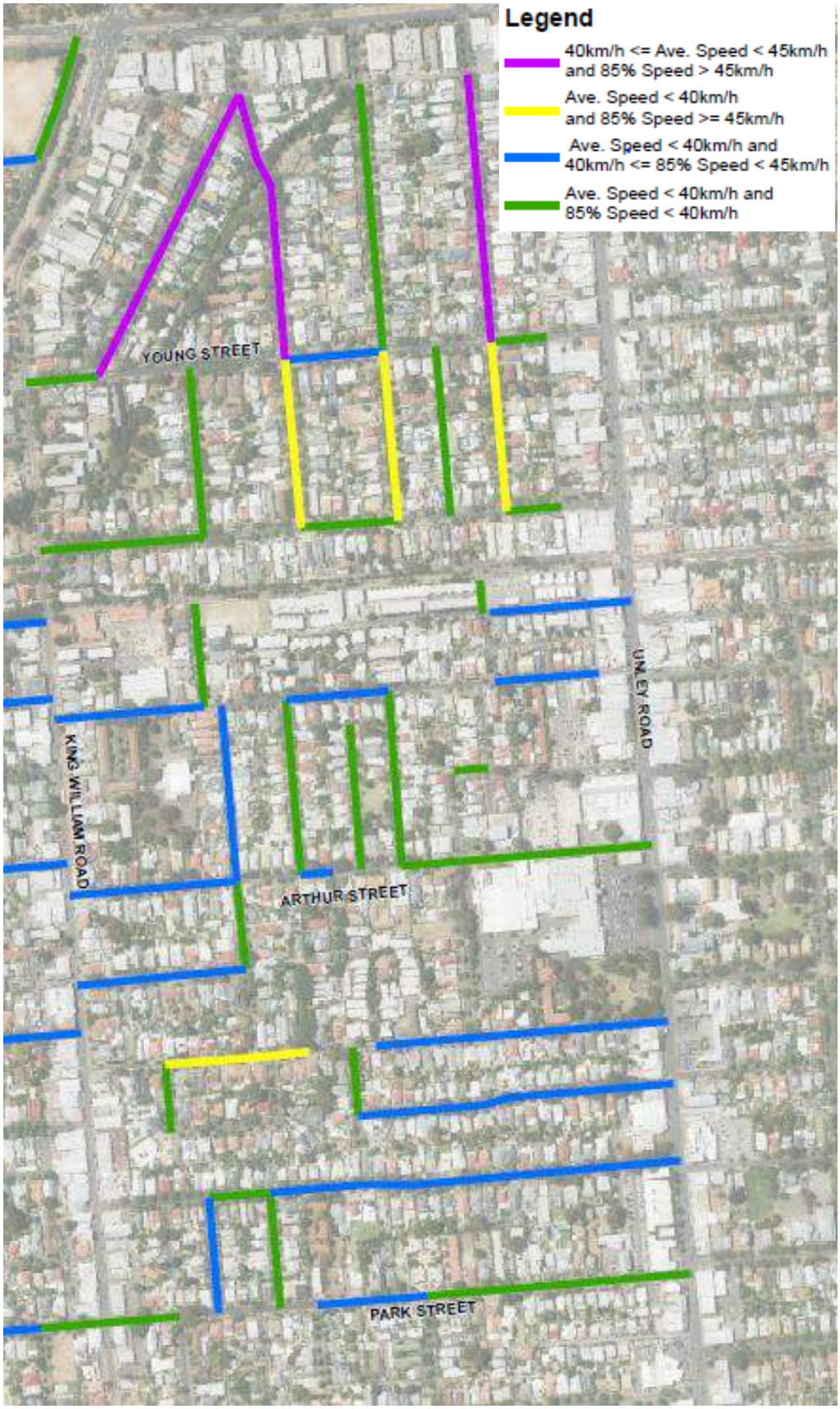


Figure 3.15: Traffic Speeds in the Study Area – East of King William Road



The recorded data confirms that there are several streets or sections of streets where speeds may be of concern. Streets with a high difference between average speed and 85th percentile speed may be of concern indicating that a limited number of vehicles are travelling considerably higher than the speed limit. Streets with an average speed and 85th percentile speed over 40 km/h indicate consistent speeding may be an issue.

The streets in Table 3.1 have sections with an average speed of 40 to 45 km/h and an 85th percentile speed over 45 km/h. Table 3.1 also includes information on the community consultation concerns in relation to speeding on these streets.

Table 3.1: Streets with Average Speed of 40 to 45 km/h and an 85th Percentile Speed over 45 km/h

Street	Section	Average Speed	85th Percentile Speed	Respondents			Daily Volume
				No Problem	Minor Problem	Major Problem	
LeHunte Street	Goodwood to Rhyl	41.6 km/h	48.2 km/h	1	1	2	1,701 vpd
Joslin Street	Davenport to Young	41.7 km/h	47.7 km/h	2	3	10	1,870 vpd
Rose Terrace	Short to Joslin	40.2 km/h	48.1 km/h	4	8	5	1,436 vpd
	Joslin to Clark	41.2 km/h	46.4 km/h				1,715 vpd
Salisbury Street	Park to Young	40.4 km/h	48.6 km/h	3	6	4	758 vpd
Roberts Street	Miller to Young	40.9 km/h	48.1 km/h	5	2	4	852 vpd
Miller Street	Roberts to Young	40.5 km/h	48.4 km/h	4	7	2	728 vpd
Davenport Terrace	Joslin to Clark	41.8 km/h	49.7 km/h	9	9	3	367 vpd
Young Street	Joslin to Clark	41.2 km/h	48.2 km/h	8	9	3	765 vpd

The observed speeds generally accord with the community responses where LeHunte Street, Joslin Street, Rose Terrace, Salisbury Street, Roberts Street, Miller Street, Davenport Terrace and Young Street had the majority of respondents identifying traffic speed as a minor or major problem. Of the above, Joslin Street, LeHunte Street, Rose Terrace, Salisbury Street and Young Street have at least one roundabout intersection which may help to reduce traffic speed. Despite this, speeds through the roundabouts on Joslin Street were noted as a concern to a few residents during the community consultation.

Table 3.2 summarises the streets with a high speed differential, with average speed below 40 km/h and an 85th percentile speed over 45 km/h.

Table 3.2: Streets with Average Speed of less than 40 km/h and 85th Percentile Speed over 45 km/h

Street	Section	Average Speed	85th Percentile Speed	Respondents			Daily Volume
				No Problem	Minor Problem	Major Problem	
Young Street	Short to Joslin	38.4 km/h	45.0 km/h	8	9	3	1,074 vpd
Clifton Street	Hardy to Harvey	39.2 km/h	46.1 km/h	0	0	0	989 vpd
Lanor Avenue	Hardy to Weller	39.5 km/h	46.4 km/h	2	2	4	751 vpd
Roberts Street	Young to Hughes	38.7 km/h	46.1 km/h	5	2	4	437 vpd
Salisbury Street	Young to Hughes	38.9 km/h	47.5 km/h	3	6	4	524 vpd
Palmerston Road	Park to Young	39.7 km/h	48.1 km/h	4	8	1	467 vpd
	Young to Hughes	38 km/h	46.3 km/h				327 vpd
Thomas Street	Caithness to Allen	38.6 km/h	46.1 km/h	2	5	9	1,363 vpd
Parsons Street	Rhyl to Hoxton	39.8 km/h	47.2 km/h	0	5	0	802 vpd
Trevelyan Street	Bendall to bend	38.9 km/h	46.1 km/h	2	6	8	1,057 vpd
LeHunte Street	Clark to bend	39.7 km/h	45.7 km/h	1	1	2	525 vpd

These streets indicate that where vehicles are speeding they are doing so significantly above the speed limit (40 km/h).

There were several streets where the majority of respondents identified traffic speed as a major problem on that street. These are summarised in Table 3.3.

Table 3.3: Streets with more than half of Respondents Reporting Speed as a Major Problem

Street	Average Speed	85th Percentile Speed	Respondents			Daily Volume
			No Problem	Minor Problem	Major Problem	
Dollman Street	31.2 km/h	36 km/h	1	1	3	752 vpd
Grace Street	32.1 km/h	40.2 km/h	0	0	1	501 vpd
Hardy Street	36.4 – 38.3 km/h	36.6 – 43.9 km/h	1	2	5	1,554 – 1,970 vpd
John Street	35.6 km/h	41.6 km/h	1	1	4	1,178 vpd
Joslin Street	39.2 – 40.8 km/h	45.4 – 46.1 km/h	2	3	10	596 – 1,715 vpd
Lanor Avenue	45 km/h	39.3 km/h	2	2	4	728 vpd
LeHunte Street	40.4 – 42 km/h	46.1 – 48.2 km/h	1	1	2	471 – 1,701 vpd
Mary Street	41 – 45 km/h	32.2 – 37.8 km/h	2	4	8	1,721 – 2,098 vpd
O'Connell Street	33.3 km/h	27.9 km/h	1	0	1	152 vpd
Ophir Street	42.1 km/h	36.2 km/h	0	1	3	1,268 vpd
Russell Street	29.6 km/h	34.4 km/h	0	0	2	212 vpd
Thomas Street	45 – 47.2 km/h	36.3 – 38.6 km/h	2	5	9	1,285 – 1,363 vpd
Trevelyan Street	38.7 km/h	45.8 km/h	2	6	8	1,057 vpd
Union Street	42.1 km/h	35.5 km/h	1	0	1	1,413 vpd
Weller Street	22.9 – 37.9 km/h	28.1 – 44.6 km/h	1	0	14	978 – 3,021 vpd

Of the above, Grace Street, Hardy Street, John Street, Joslin Street, LeHunte Street, Trevelyan Street and Weller Street have sections with an 85th percentile speed over 40 km/h and these are highlighted in green on the above table.

The most recent data on the other streets indicate that the average speeds are below 40km/h with 85th percentile speeds generally below or just above 40 km/h, with the exception of Mary Street and Lanor Avenue. While the traffic data does not indicate a significant portion of vehicles exceeding the speed limit on these streets there may be a perceived or localised speed issue on these streets relative to the street design and activity. The volumes of some of these streets could increase the perceived speed, due to the number of vehicles using the streets. This is particularly likely for streets with volumes around or over 1,000 vehicles per day. These streets have their volumes highlighted in green on the above table.

There may also be the presence of single vehicles recurringly speeding or accelerating quickly (and/or loudly) that may also contribute to speed concerns on streets where the data does not indicate significant speeding. Furthermore, while vehicles may not be exceeding the speed limit they may be travelling at a speed inappropriate for the nature of the street. This could include narrow streets, significant presence of parked cars, cars manoeuvring for parking and frontage activity (e.g. school) where there should generally be a lower speed environment.

In many other cases traffic speed was reported to be a minor problem, or were generally perceived to have higher speeds than necessary. The majority of other streets in the study area for which speed data was available have an 85th percentile speed and average speed under 40 km/h.

Several streets have road humps in the area including Albert Street, Mitchell Street, Park Street and Opey Avenue. Despite the presence of road humps, traffic speed was still noted as a major or minor issue more often than no issue at all on these streets.

The data on Albert Street, Park Street, and Opey Avenue shows that generally both average speeds and 85th percentile speeds were recorded around or under 40km/h, although some sections recorded 85th percentile speeds between 40 and 45 km/h. This data suggests that while there is a perceived speed issue there are few vehicles disobeying the 40 km/h speed limit on these streets, with the road humps likely to be assisting this.

On Mitchell Street the majority of respondents reported speed as a minor problem. The average speed was recorded as under 40km/h with an 85th percentile speed of 40 to 45 km/h recorded. This suggests that while there are some vehicles disobeying the 40km/h speed limit, speed is not a significant issue on this street, likely due to the road humps.

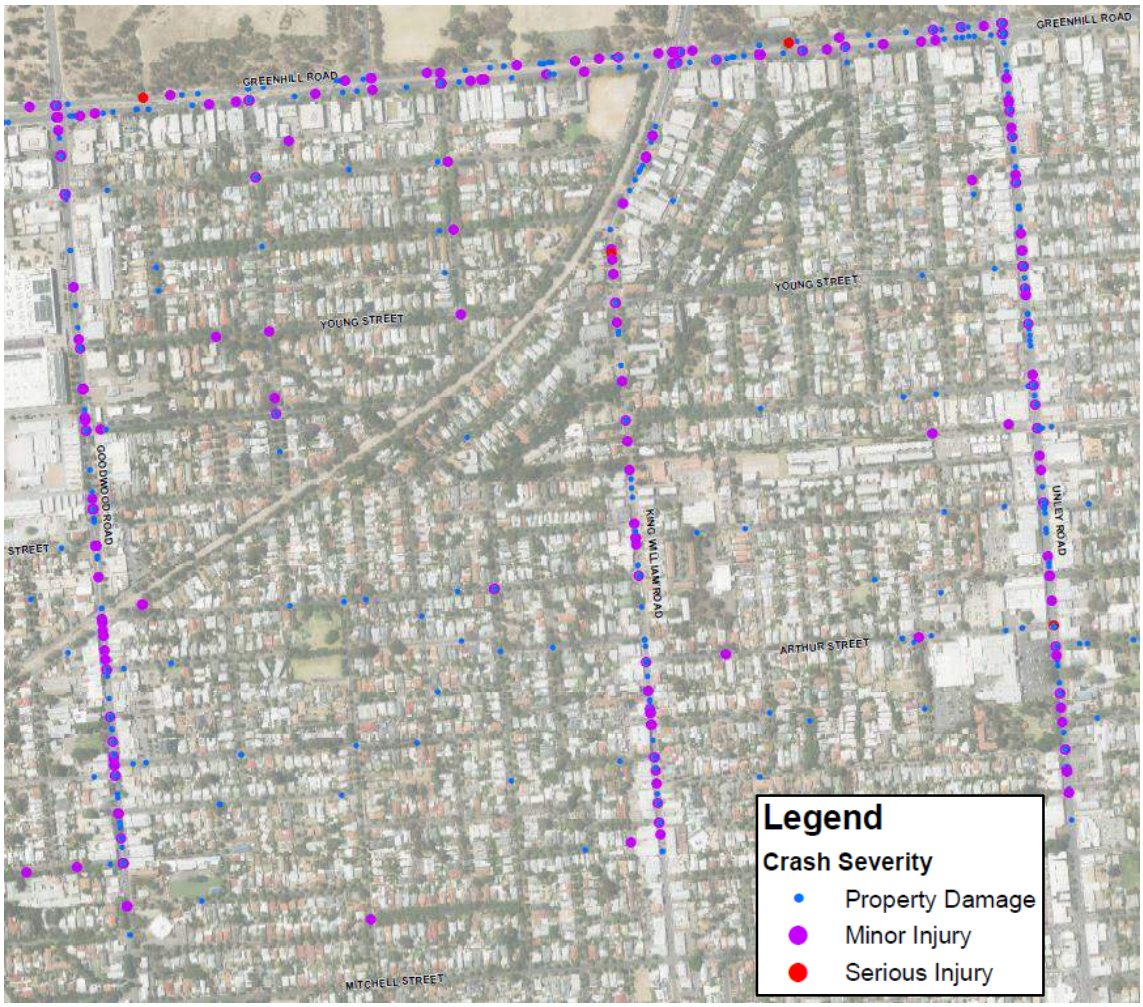
Several locations were noted by the community with regard to speed negotiating specific locations, most notably the 'dogleg' bend on Kneebone Street and the intersection of John Street / Trevelyan Street. Traffic speeds at these locations would typically be expected to be well below the posted speed limit due to the nature of the location, indicating that the current layout and signing should be reviewed. Specific speed data at these locations is not available.

3.3.4 Road Safety

Within the study area, Albert Street, Joslin Street and Arthur Street were the local roads with the most crashes recorded. Arthur Street and Albert Street in particular are high volume roads, which contribute to the likelihood of crashes occurring on these roads.

Figure 3.16 shows the location and severity of the recorded crashes between 2010 and 2014.

Figure 3.16: Crash Locations and Severity within the Study Area



As can be seen in Figure 3.16, the majority of crashes occurred on Goodwood Road, Greenhill Road, Unley Road and King William Road as the arterial roads bordering the study area. Several of the intersections with local roads had notably high numbers of crashes. Concentrations of crashes where local roads meet major roads at uncontrolled (i.e. unsignalised intersections) are typical. Nonetheless the locations with a more notable number of crashes recorded on the major roads are as follows;

- Goodwood Road / Parsons Street (28 crashes – including 12 x Right Angle, 10 x Rear End, 6 x Right Turn)
- Unley Road / Young Street (29 crashes – including 14 x Right Turn, 5 x Side Swipe, 4 x Right Angle, 4 x Rear End)
- Goodwood Road / Mitchell Street (19 crashes – including 8 x Right Angle, 8 x Rear End, 3 x Right Turn)
- Unley Road / Arthur Street (12 crashes – including 6 x Rear End, 4 x Right Angle)
- King William Road / Young Street (9 crashes – including 4 x Rear End, 3 x Right Angle)

Crashes on Greenhill Road, even at intersections with local roads, have not been considered due to the recent upgrades to the intersections of local streets with Greenhill Road changing the configuration at many of these locations.

Around 30% of crashes recorded inside the study area (on local streets) were Hit Parked Vehicle crashes, where a passing vehicle has hit a parked vehicle on the side of the road. This may be a result of narrow carriageways with parking on both sides of the streets, combined with driver error.

Several local street locations recorded three or more crashes in the last five years.

The intersection of Albert Street and Weller Street has six recorded crashes in the last five years. Of those, three were injury crashes and three were Property Damage Only (PDO). Five of the six crashes were right angle crashes while the remaining crash was a cyclist Roll Over crash. Of the right angle crashes three involved northbound vehicles hitting eastbound vehicles and two involved southbound vehicles hitting eastbound vehicles. The intersection is subject to Stop sign control on Weller Street due to poor sight distances along Albert Street which is likely to contribute to the crash record.

The intersection of Lily Street and Ada Street has recorded three crashes in the last five years, all Property Damage Only. All three were Right Angle crashes, with two involving westbound vehicles hitting northbound vehicles, and one involving an eastbound vehicle hitting a southbound vehicle.

The intersection of Mitchell Street, Hardy Street and Regent Street has recorded five crashes in the last five years. Of these two were injury crashes and three were Property Damage Only. All five crashes were Right Angle crashes. Four of these crashes involved southbound vehicles hitting east or westbound vehicles.

The intersections of Joslin Street with Rose Terrace and LeHunte Street also recorded three crashes in the last five years, however closer analysis shows more than one crash type recorded at both these locations.

Generally local road crashes are not concentrated in any one area, or suggest a pattern of crash locations and/or types other than previously mentioned.

In addition to the above, road safety concerns have been expressed by residents regarding several locations;

- Intersection of Ada Street and Lily Street
- Weller Street / Simpson Parade 90° intersection (vehicles travelling on wrong side of road through bend)
- No warning signage at the Clark Street / Rose Lane dip
- Speed of vehicles at dogleg on Kneebone Street
- Corner cutting at Dollman Street / Weller Street / Erskine Street
- Blind end of Mike Turtur Bikeway at Musgrave Street adjacent a driveway
- Narrow bend on Bloomsbury Street
- Rose Terrace adjacent Annesley School (speeds in school zone, parents and children crossing road without using crossing, vehicles u-turning)
- Sight lines at end of Mike Turtur Bikeway at Railway Terrace South.

Further to the above many residents expressed concern regarding vehicles parking close to intersections hindering intersection sight lines. 28 survey responses indicated that this was of concern with the following locations noted in particular by respondents:

- Arthur Street / Ash Avenue
- Boothby Court / Thomas Street
- Caithness Street / Thomas Street
- Salisbury Street (generally)
- Young Street / John Street
- King William Road / Thomas Street

- Florence Street / Goodwood Road
- King William Road (generally)
- Greenhill Road (generally)
- Foundry Street / Albert Street.

Cyclist and Pedestrian Safety

Generally, cyclist crashes occurred on the major roads within and bordering the study area (Goodwood Road, Greenhill Road, Unley Road and King William Road), with crashes at intersections with local roads being the most common occurrences. Generally, cyclist crashes result in an injury due to the vulnerability of cyclists.

The local streets with more than one cyclist crash recorded are Joslin Street and Rose Terrace. One crash was recorded on Joslin Street at the intersection with LeHunte Street and one crash at the intersection with Young Street, both involving southbound cyclists. The three crashes recorded on Rose Terrace were all different crash types and locations, with one midblock recorded east of Goodwood Road, one at the intersection with Clark Street and one at the intersection with Joslin Street.

Several cyclist related crashes have been recorded on Railway Terrace South, particularly at the intersection with Goodwood Road, which forms part of the Mike Turtur Bikeway. These were generally attributed to crossing cyclists disobeying the cyclist traffic signal. On Railway Terrace South the two recorded crashes both involved parking or stopped vehicles, one attributed to cyclist error and the other deemed a failure to give way by a parking car. The safety of cyclists, pedestrians and motorists was raised by residents of Railway Terrace South, given the use of the street as part of the Mike Turtur Bikeway.

The intersection of Hughes Street and Unley Road recorded four cyclist crashes in the last five years, with all four being Side Swipe crashes where a northbound cyclist has been hit by a left turning vehicle. The intersection of Young Street and Unley Road also recorded several cyclist crashes, with three in the last five years. These all involved a northbound cyclist being hit by a southbound vehicle turning right into Young Street.

King William Road has recorded 26 cyclist crashes in the last five years with a fairly even split between northbound and southbound cyclist crashes. Five of the 26 crashes were 'dooring' incidents where a cyclist was hit by someone opening a door, and three were hit while drivers were parking or unparking. 11 of the cyclist crashes were right angle or right turn crashes at intersections or driveways, generally attributed to drivers failing to give way.

Locations with significant numbers of cyclist crashes on Greenhill Road have not been examined closely. The recent upgrades to Greenhill Road, including several cyclist crossing points in conjunction to reconfiguring local road access would be expected to improve safety for cyclists.

Similarly, pedestrians are vulnerable in crashes, and crashes involving pedestrians often result in an injury. Generally, crashes involving pedestrians in the last five years have been recorded on the major roads bordering and through the study area (Goodwood Road, Greenhill Road, Unley Road and King William Road). Pedestrian crashes on King William Road in particular do not show an obvious pattern, with pedestrian crashes being a mix of pedestrians crossing without control, vehicles reversing without due care, pedestrians hit when alighting from vehicles, or vehicles failing to give way to pedestrians where required. It is noted that pedestrians generally cross King William Road 'without control' (i.e. without a formal crossing) due to the lack of formal crossing points along the main retail section of King William Road.

3.4 Parking

In addition to resident and visitor parking, parking associated with use of the public transport facilities, retail and commercial staff and customers, and events at Adelaide Showgrounds also takes place on local streets.

Generally, streets around the tram stops experience all day parking associated with 'park and ride' commuters that reportedly make it difficult for residents and their visitors to park near to their properties. On street angle parking is provided on the north side of Railway Terrace South for Goodwood Road Tram Stop. This parking is unmarked and residents reported that it fills up quickly in the morning resulting in all day commuter parking adjacent residents' properties occurring.

Limited tram parking is provided at the Wayville and Greenhill Road tram stops resulting in all day parking occurring on streets surrounding these tram stops. Similarly, residents suggest all day commuter and local business staff parking occurs on local streets near the major bus routes and shopping corridors. There is also likely to be some parking taking place close to the Mike Turtur bikeway, enabling commuters to cycle a relatively short distance in to the CBD.

On-street parking conditions in the north-west corner of the study area were also raised as a concern by some respondents. It is reported that staff from the businesses located on Greenhill Road occupy a number of the on-street parking spaces making it difficult for some residents and their visitors to park near to their properties. Many residents noted that where parking restrictions were in place staff appeared to disregard the time restriction or shift their cars throughout the day on the same street.

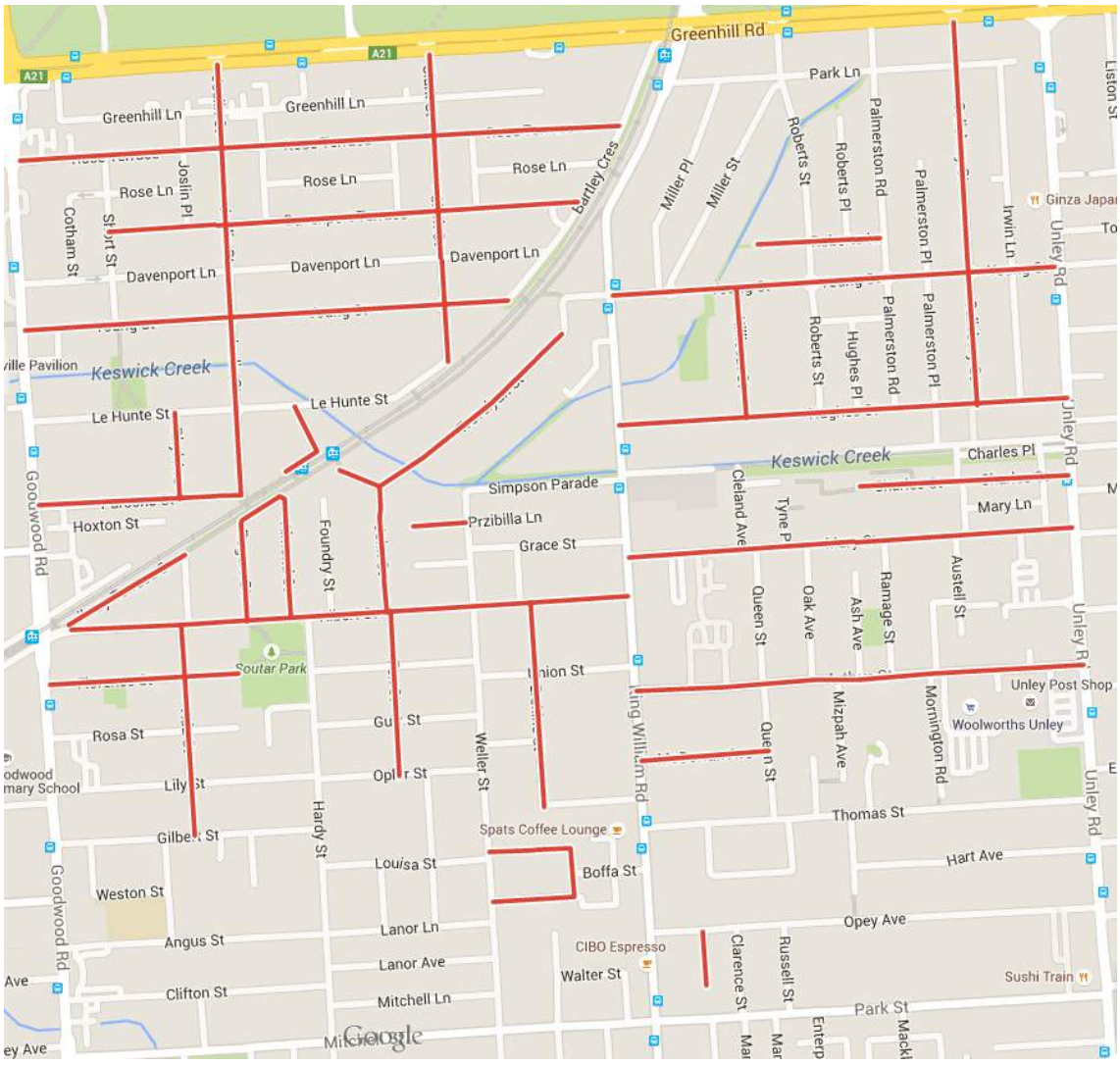
The following streets were identified through the community consultation for all day parking (for commuters or otherwise);

- Ada Street
- Albert Street
- Almond Street
- Arthur Street
- Bendall Avenue
- Charles Street
- Clark Street
- Davenport Terrace
- Erskine Street
- Florence Street
- Fox Street
- Harley Street
- Hinton Street
- Hughes Street
- John Street
- Joslin Street
- Killicoat Street
- Kneebone Street
- Mansfield Street
- Mary Street
- McGowan Avenue
- Moresby Street
- Parsons Street
- Railway Terrace South

- Rhyl Street
- Roberts Lane
- Rogers Street
- Rose Terrace
- Sailsbury Street
- Trevelyan Street
- Young Street (Unley)
- Young Street (Wayville)

These streets are shown in Figure 3.17, identifying the whole street even though in many cases only a section of the street will be affected.

Figure 3.17: Streets noted by residents with all day parking concerns



77 (of 546) respondents to the Questionnaire Survey suggested all day parking be further restricted to prevent all day commuter parking, although many noted the danger of shifting these parking problems to other unrestricted streets, which was noted to have occurred with recent restrictions. 14 respondents suggested parking restrictions be removed Council wide to allow all day parking on all streets. 29 respondents specifically suggested providing off street 'park and ride' or all day parking facilities for tram and bus services in Unley to free up on street parking for residents, visitors

and customers accessing King William Road and Unley Road shopping precincts. The existing public transport corridors to the south of the study area, notably the Belair train line, provide very limited park and ride capacity, which is also combined with a lower service frequency than is available on the tram and some bus routes.

The Adelaide Showgrounds are located immediately to the west of the study area. The annual Royal Adelaide Show generates heavy on-street parking demand throughout the study area (predominantly along the streets to the north and west of the study area). Temporary parking controls are installed and managed by Council during this period. Given the short term nature of the event and associated parking demand it should not be considered a major reason to permanently change parking controls.

Other events held at the Adelaide Showgrounds (such as the Sunday Farmers Markets) also generate on-street parking demand within the study area. However, the demand is generally isolated to the streets in the north-west corner of the study area.

3.5 Cycling

Overall the Mike Turtur shared path and bikeway has been very successful in contributing to increased levels of cycling in Adelaide, to the extent that it is now the busiest peak hour cycle route in Adelaide with over 300 cyclists recorded on the section approaching Goodwood Road in the AM peak period from 7am to 9am. The average weekday volume on the Mike Turtur Bikeway adjacent Young Street is around 620 cyclists per day.

There are also a number of other locations where there are noticeable cycling numbers. Figure 3.18 below provides details of observed cycling volumes in the AM peak period (Super Tuesday Bicycle Counts) and 12 hour total volumes from DPTI intersection counts.

Figure 3.18: Cycling Activity in Study Area

Porter Street cycle route provides a north to south local street cycling alternative route to Unley Road, utilising 40km/h local streets with advisory treatments. This route is to the east of the study area, but was noted by many community members as a good route that should provide better connections to east-west routes and that a similar route should be replicated on the western side of Unley Road (i.e. within the study area).

Charles Walk provides a shared use path in an east to west direction between King William Road and Fuller Street, where the route continues on local streets to the east to Fullarton Road. Connectivity to the west is currently via Simpson Parade. 2014 Super Tuesday counts indicate that around 30 cyclists in the AM peak period use Charles Walk between Unley Road and King William Road, with around 20 in the AM peak recorded to the east of Unley Road.

No direct link to the Mike Turtur Bikeway is currently available, as such a local street link via Weller Street, Albert Street, John Street and Bendall Avenue provides access to the Mike Turtur via an approximately 500 metre detour. GTA understands that the potential to connect Simpson Parade to Trevelyan Street (and then via Bendall Avenue to the Mike Turtur) is to be explored by Council in the future using the Keswick Creek alignment.

With the recent implementation of a formal shared path alongside Rogers Street, there is now a continuous off-road route within the study are with the exception of alongside the northern end of King William Road and the approach to Goodwood Road.

The intersection of the Mike Turtur bikeway and King William Road requires southwest bound cyclists to cross the southbound vehicle lane to access the cyclist right turn lane, before turning right onto the Mike Turtur. The shared path on the western side of King William Road continues the Mike Turtur alongside King William Road before requiring cyclists to dismount and continue as pedestrians (not signed to dismount but signed as shared path ending), or veer to the right onto King William Road into a designated bicycle lane that crosses the vehicle left turn lane.

To the east of Goodwood Road the Mike Turtur bikeway utilises Railway Terrace South between Musgrave Street and Goodwood Road. This section of Railway Terrace South provides on street parking (parallel kerbside to the south and unmarked angle parking to the north) adjacent the tramline and Goodwood Road Tram Stop and local resident access. The exit of the bikeway onto Railway Terrace South has been flagged by the community as potentially unsafe for cyclists and pedestrian with cyclists emerging from the bikeway from behind a solid fence onto a 90 degree angled intersection (Railway Terrace / Musgrave Street) of a two way street. Furthermore, cyclist speed on Railway Terrace South has been raised by the community as a concern for all road users and pedestrians.

Whilst many cyclists riding on the Mike Turtur were observed to be cycling in a considerate manner, a significant minority were reported to be aggressive and discourteous to other users. Cyclist speed and lack of bell usage to warn pedestrians and other cyclists of their approach was flagged by the community as a key issue with the bikeway.

The community comments noted particular problems for cyclists on Goodwood Road, Unley Road, King William Road and Greenhill Road, with a range of comments from both cyclists and non-cyclists. A lack of available on street bicycle lanes was one of the most notable issues raised, in particular cars being able to park in bicycle lanes causing safety concerns on these major roads.

More locally concerns for cyclist safety due to vehicle speed, volumes and parked cars were primary issues, from cyclists and non-cyclists. The provision of more bicycle paths and routes (as well as shared pedestrian and cyclist routes) was seen by many as a key to encouraging safe cycling on local streets. Weller Street, Hardy Street, Opey Avenue and Park Street were suggested as locations that should have better on street cycling facilities. Signage advising of bicycle routes, as well as links to existing bicycle routes (e.g. Porter Street Bikeway, Charles Walk etc.) were also raised by the community as potential improvements.

A number of these routes have been identified in the draft Walking and Cycling Plan 2016-2020.

3.6 Walking

The existing local street network provides a comprehensive but generally basic provision for pedestrians. All streets have some footpath provision on both sides. A number of streets have footpaths that appear to have been recently renewed with block paving and provide a good width and surface suitable to accommodate most pedestrian demands, including wheelchairs, pushchairs and gophers. However other local streets have narrow footpaths with poor quality surface.

However, in many instances the footpaths are of minimum width (1 to 1.2 metres) and in some locations adjoining street trees are lifting the footpath surface creating uneven surfaces and trip hazards. This would also present difficulties for wheelchairs, pushchairs and gophers.

The streets raised with footpath maintenance or width (i.e. narrowness) concerns were Mitchell Street, Ada Street, Almond Street, Arthur Street, Killicoat Street, Kneebone Street, Opey Avenue, Ophir Street, Palmerston Road, Park Street, Railway Terrace South, Rose Terrace, Russell Street,

Simpson Parade Thomas Street and Young Street (Wayville). Clark Street and Joslin Street were also raised as needing hedges trimmed to maintain appropriate footpath widths. Charles Place was raised as not having a footpath, which was seen by at least one community member as a concern.

Street lighting within the study area is limited and has been identified as a minor or major problem by many residents. Most notably the following streets had the majority of respondents on that street nominate street lighting as a major problem;

- Avenue Street
- Bartley Crescent
- Bendall Avenue
- Bloomsbury Street
- Boffa Street
- Erskine Street
- Hughes Street
- Killicoat Street
- Mornington Road
- Rose Terrace
- Union Street
- Walter Street
- Weller Lane

The extensive street trees in the area, whilst adding to the amenity during the daytime, further limit the available night time lighting where they are in close proximity to street lights. Further to the above, street lighting was nominated as an issue by the community on the following streets, often with particular reference to trees obstructing the installed street lights;

- Arthur Street
- Charles Street
- Davenport Terrace
- Hart Avenue
- Hinton Street – trees obstructing lights
- Irwin Lane (between Young Street and Hughes Street)
- Mary Street – trees obstructing lights
- McGowan Avenue
- Opey Avenue
- Palmerston Road – trees obstructing lights
- Roberts Street
- Rosa Street
- Royal Avenue
- Sailsbury Street
- Short Street
- Trevelyan Street
- Young Street (Wayville)

The quality of street lighting was partly linked to general problems of pedestrian safety and security in the community consultation responses. Several residents commented that they carried torches when walking in the evening as they had previously tripped over lifting pavers and tree roots in the dark.

After poor lighting, pedestrian difficulty in crossing King William Road due to the lack of crossing facilities was the most common problem facing pedestrians in the study area that was identified by the community.

The public transport corridors within the study area have been used to provide pedestrian as well as bike route opportunities and the Mike Turtur and Charles Walk routes are well used by pedestrians. However, outside the available directions of these routes, the public transport corridors themselves create barriers for certain routes, which can impact on local access for all travel modes. The tram line can increase route distances for local walking and cycling trips as permeability through the tram corridor is restricted to the stop locations.

The draft Walking and Cycling Plan 2016-2020 indicates streets with high pedestrian demand footpaths, with King William Road, Goodwood Road and Unley Road all being identified as having high pedestrian demand. Joslin Street, Young Street, Arthur Street, Mitchell Street, Park Street and Greenhill Road are noted as 'average pedestrian demand' footpaths. The Plan indicates a signalised pedestrian crossing should be considered at the intersection of Young Street and Unley Road, and median crossings at the King William / Simpson Parade intersection, Weller Street / Mitchell Street / Wood Street intersection, and the Park Street / Russell Street intersection.

3.7 Public Transport

The study area is very well served by public transport, although the quality of the services and the facilities at the various stops varies considerably. It should however be noted that, other than sections of the access routes on local streets and reserves, the responsibility for the provision of this infrastructure lies with the State Government through DPTI and not the City of Unley.

The three tram stops within the study area are generally built to modern design standards, are easily accessible from the local streets and footpaths, well-lit and provide crossing points via pedestrian mazes at each of the stops. However, they provide little in the way of park and ride facility. Goodwood Road provides the most facility for park and ride patrons, with 62 car parking spaces available adjacent the tram stop (according to AdelaideMetro's '*Park 'n' Ride'* guide, dated May 2014). Ticketing machines are available on the trams.

The service frequencies are also at an attractive level throughout the operating hours of the tram, with the frequency every 10 minutes in peak periods and remaining at 15-20 minutes during the evenings and weekends.

Figure 3.19 below summarises the patronage levels at the tram stops and indicates the access mode. Stop 1 (Greenhill Road) reports around 2% park and ride, Stop 2 (Wayville) reports around 4% and Stop 3 (Goodwood Road) reports around 6% park and ride. This equates to around 13, 18 and 49 park and riders for each stop respectively.

Around 95% of tram patrons walk to the tram stops within the study area. 2% of patrons at Stop 1 (Greenhill Road) were reported as transferring from bus services. This equates to around 13 transfer passengers.

Patronage figures were reported in the 2002 ITS and it is noticeable that patronage at the tram stops has generally doubled, with Stop 2 (Wayville) nearly tripling in patronage. At Stop 2 in particular this indicates a greater number of patrons walking from the local area to use the tram line.

Figure 3.19: Tram Daily Patronage Levels

The bus services are concentrated along three primary corridors; Goodwood Road, King William Road and Unley Road, with limited school services on Greenhill Road.

The bus stop facilities along Goodwood Road are generally minimal, with seating and timetable details generally provided, and small, older style shelters on some of the CBD bound stops. This provision is partly a function of the available width, with the footpaths and verges generally narrow and constrained. The stops from the CBD provide few facilities but are generally used only for alighting as noted in Figure 3.22 to Figure 3.24 below.

Unley Road bus stop facilities are generally good, particularly in the CBD bound direction, with modern bus shelters, providing seating and timetable information. The more southern stops on Unley Road have less provision and no specific bus shelters. The stops from the CBD provide few facilities but are generally used only for alighting as noted in Figure 3.22 to 3.24 below.

Examples of bus stop facilities on Goodwood Road and Unley Road are shown below.

Figure 3.20: Bus Stop Facilities Stop 3 Goodwood Road East (southbound)

Figure 3.21: Bus Stop Facilities Stop 4 Unley Road West (northbound)

The bus stop facilities on King William Road are generally minimal with seats and timetable information provided at all stops on the citybound side of the road. Stops 1 and 2 provide an older style shelter for citybound travellers, and Stop 1 provides an older style shelter on the other side of the road. Generally, the stops from the CBD provide few facilities but are mostly used only for alighting as noted in Figure 3.22 and Figure 3.24 below, with CBD bound stops generally recording the most boardings.

The bus stops on Greenhill Road are simple and minimal, and are only serviced by two buses each day primarily used as school access for Annesley College, although services may suit some employees of businesses on Greenhill Road.

Figure 3.22 to 3.24 show the bus stop patronage data available for the study area for weekdays and Figures 3.25 to 3.27 show the bus stop patronage data available for weekends.

Figure 3.22: Bus Stop Patronage in Study Area – Goodwood Road Weekday

Figure 3.23: Bus Stop Patronage in Study Area – King William Road Weekday

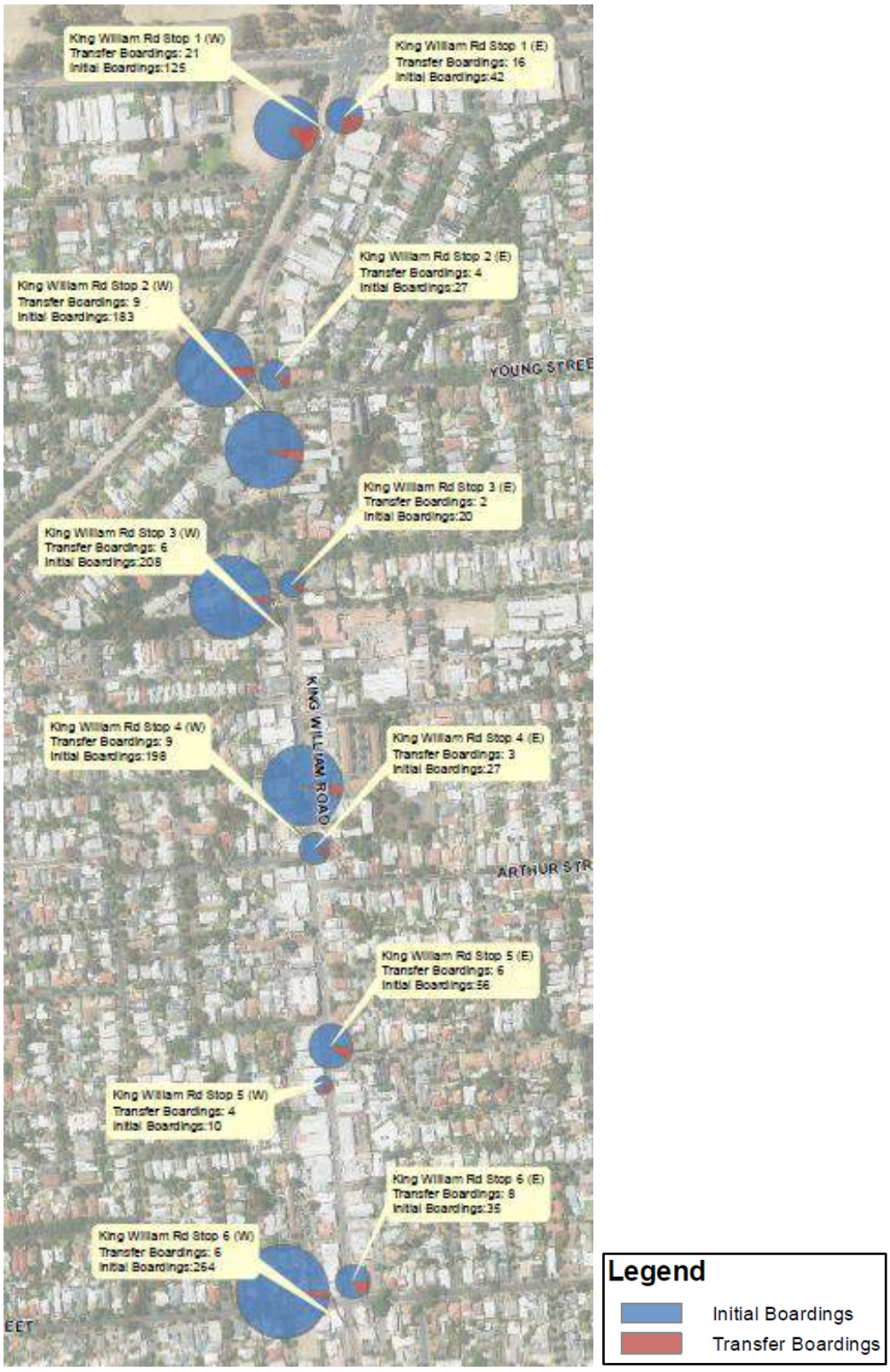


Figure 3.24: Bus Stop Patronage in Study Area – Unley Road Weekday

Of the bus routes in the study area the citybound bus stops (western side of road) recorded the most boardings, as expected due to the proximity to the city. Goodwood Road generally has the most transfer boardings, particularly Stop 4 east side (near Goodwood Road tram stop) with 70% transfer boardings (101 of 148). This is likely to be due to patrons transferring between the tram and bus services at Stop 4 Goodwood Road. Most other stops on Goodwood Road recorded less than a quarter transfer boardings. The stops on Unley Road and King William Road also generally recorded less than 25% transfer boardings, with onward or return journeys within two hours being the likely reason for transfers at stops on these roads. Given that most buses on these routes are north to south routes this contributes to the limited numbers of transfer boardings.

Figure 3.25: Bus Stop Patronage in Study Area – Goodwood Road Weekend

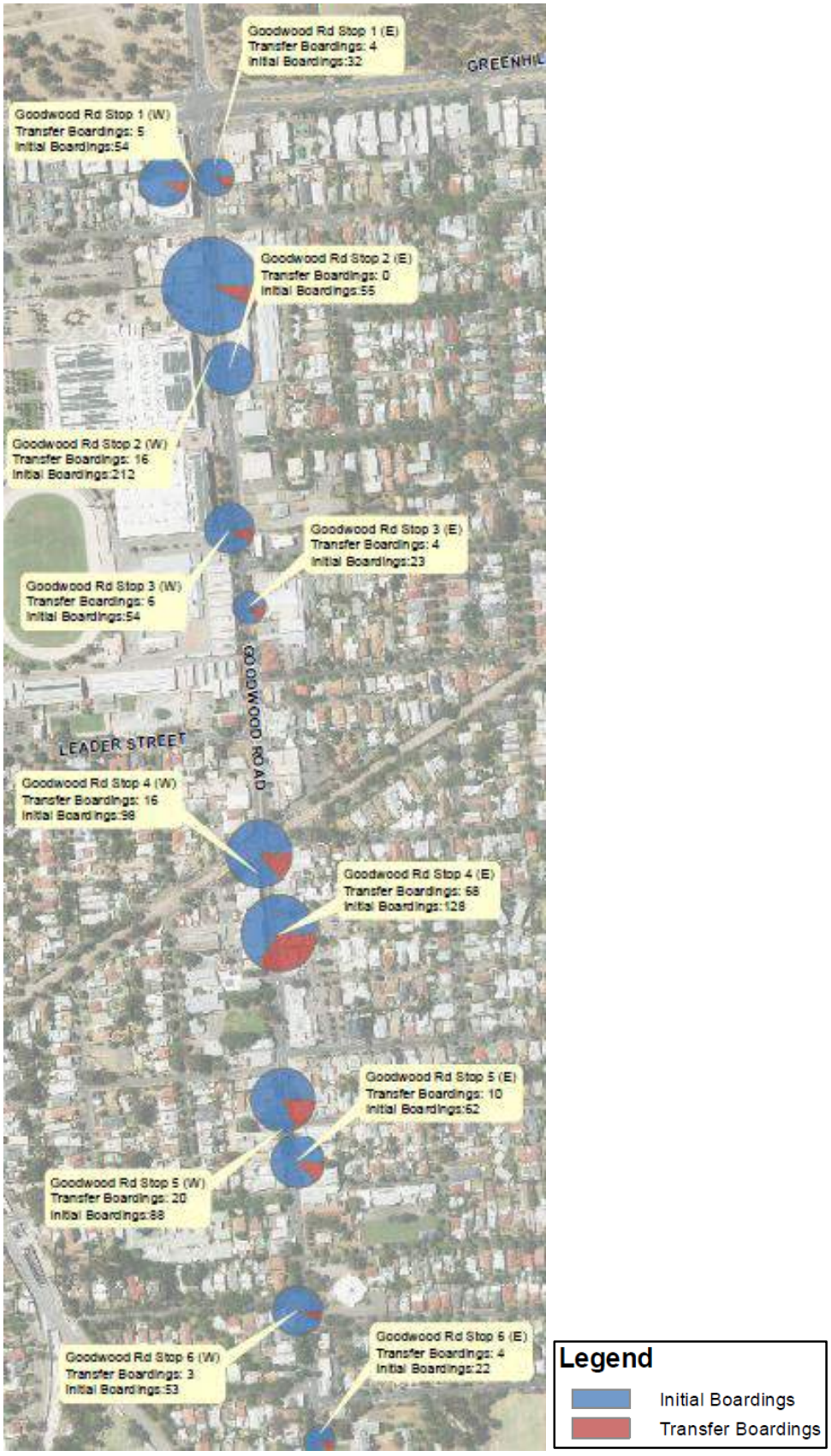


Figure 3.26: Bus Stop Patronage in Study Area – King William Road Weekend

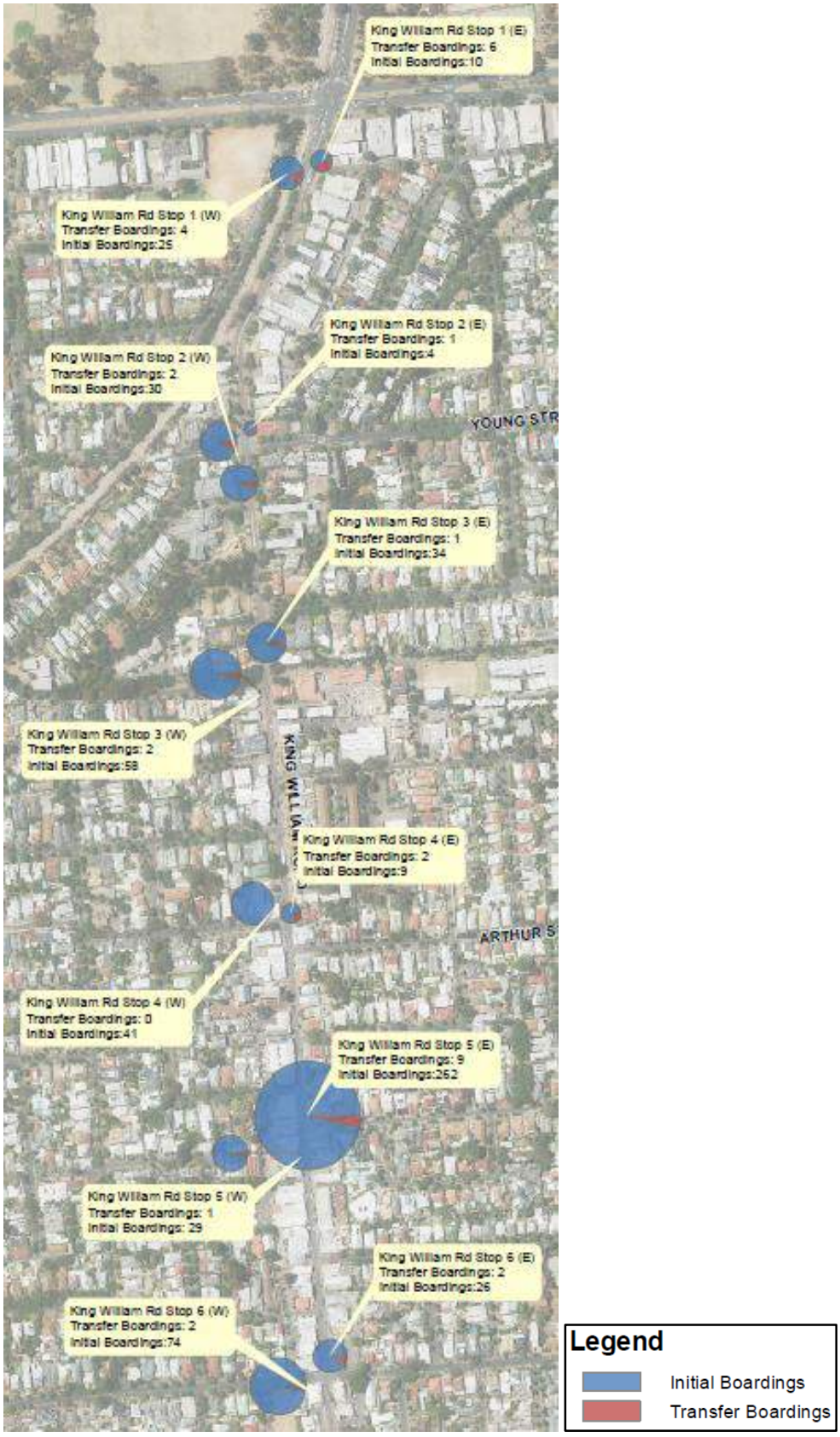
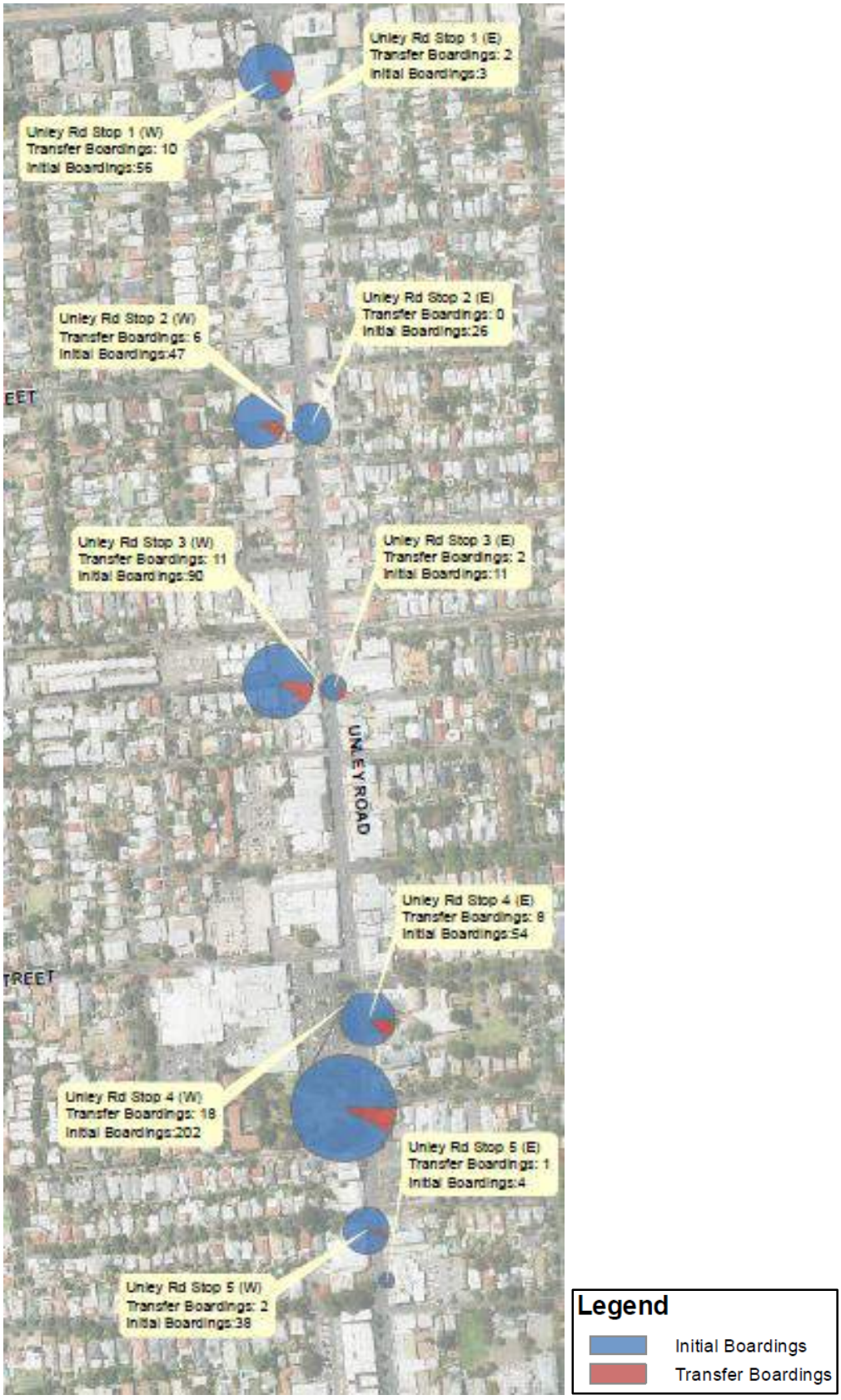


Figure 3.27: Bus Stop Patronage in Study Area – Unley Road Weekend



Weekend patronage is generally significantly less than the average weekday patronage recorded, with less transfer boardings also recorded. Goodwood Road recorded the busiest bus stops, with Stop 2 west side and Stop 4 east side two of the highest recorded, with 212 and 128 respectively. Unley Road Stop 4 west side recorded 202 boardings, being the busiest stop on Unley Road, and one of the busiest on weekends in the study area.

4. Opportunities

4.1 Introduction

It is unrealistic to expect that private motor vehicles can be relied on to adequately, sustainably or equitably respond to the future travel task of the study area without significant impacts to quality of life and the City of Unley 4 Year Plan recognises this. It is therefore recommended that the opportunities available through the study ensure balanced provision for future travel through walking, cycling and public transport modes.

This section considers the opportunities that are available for all transport modes both in terms of responding to and resolving existing issues and as a means of developing an improved local streetscape and transport environment over time.

4.2 Link and Place Assessment

Current best practice widely recognises that urban streets generally have two core activity functions being a Link function (i.e. the essential need to follow a continuous linear path through the street network with minimal disruption and seamless connection) and a Place function (i.e. the street is a destination and activities occur on or adjacent to the street)[2].

A review of the study area has identified a number of Link status streets as well as a number of existing (or opportunistic) Place status streets. Some streets share a Link and Place function and the differing needs of these streets must therefore be carefully considered.

A review of the study area has identified the following key Link and Place status classifications and opportunities:

Link Status

- King William Road
- Mitchell Street and Park Street
- Arthur Street
- Albert Street
- Weller Street
- Mike Turtur Bikeway as a pedestrian and cyclist route
- Railway Terrace South as a pedestrian and cyclist link (as part of the Mike Turtur Bikeway)
- Charles Walk as a pedestrian and cyclist link

Place Status

- Sections of King William Road (notably between Arthur Street and Mitchell Street)
- Sections of Unley Road (particularly adjacent Unley Shopping Centre)
- Sections of Goodwood Road (notably between tram line and Victoria Street)
- Sections of streets surrounding Soutar Park (Albert Street, Arunga Close, Hardy Street, Florence Street)
- Sections of streets surrounding Florence Street Park (Florence Street)
- Sections of streets surrounding Wayville Reserve (LeHunte Street)
- Sections of streets surrounding North Unley Play Park (Young Street, Killicoat Street)
- Sections of streets surrounding Soldiers Memorial Gardens (Unley Road, Thomas Street)

[2] Streets for People - Compendium for South Australian Practice (2012)

- Sections of streets surrounding Morrie Harrell Playground (Ramage Street, Ash Avenue, Arthur Street)
- Sections of streets surrounding Boothby Court Park (Boothby Court)
- Simpson Parade Reserve as a linear reserve (and the adjacent Simpson Parade)
- Charles Walk as a linear reserve

4.3 Urban Design

There are a number of urban design improvements that could be considered within the study area and the following have been identified as potential opportunities:

- Improve lighting along major pedestrian links to public transport.
- Consider additional street furniture and rest areas along walking and cycling links.
- Incorporate landscaping into traffic control treatments where possible (e.g. driveway links).
- Consider reallocation of road space to improve walking and cycling modes where roadway space is well beyond the required capacity when road assets reach the end of their useful life.
- Continue the use of 'Parklets' to create social and dining spaces in car parks on King William Road beyond the initial Parklet Program
- Investigate footpath improvements, particularly to sections with raised pavers due to tree roots
- Improve visibility of speed cushions on Opey Avenue, Mitchell Street, Park Street and Albert Street with repainting.
- Improve footpath width by maintaining overgrowing vegetation, particularly on Clark Street and Joslin Street.
- Repaint faded no standing lines on local streets, particularly Gilbert Street and Arunga Close.
- Provide a sign at Young Street at the tramline to indicate that Young Street continues on the other side of the tramline.
- Review ongoing need for right turn AM peak ban from Albert Street onto Weller Street (turning to the north).

4.4 Traffic Network

4.4.1 Traffic Volumes

- Maintain speed cushions on Albert Street and Opey Avenue
- Consider removal of speed cushions on Mitchell Street and Park Street to discourage displacement of traffic to other local streets
- Consider landscaped kerb build outs and/or driveway links on Roberts Street and Salisbury Street between Park Lane and Young Street at intermediate intersections or appropriate locations to create visual narrowing or realignment of the roadway
- Consider kerb build outs, driveway link or localised road narrowing on Young Street adjacent North Unley Play Park / creek alignment
- Consider single lane slow points, speed cushions/speed humps in series along Palmerston Road
- Consider landscaped kerb build outs at intersections with side roads to create visual narrowing or realignment of the roadway on Weller Street and Hardy Street

- Consider a driveway link, kerb build outs or localised road narrowing on Hardy Street adjacent Soutar Park
- Review parking controls on Clifton Street and consider staggering 'no parking' parking controls onto either side of the street
- Consider driveway link adjacent Wayville Reserve
- Consider driveway links or kerb build outs on Parsons Street and Young Street between Goodwood Road and Joslin Street
- Consider landscaped kerb build outs on Joslin Street at intersections with Davenport Lane and Terrace to create visual narrowing or realignment of the roadway
- Investigate planted central median treatment along the length of Rose Terrace (with appropriate gaps for driveway access and U-turns where required).

4.4.2 Traffic Speeds

- Retain speed cushions on Mitchell Street, Park Street, Albert Street and Opey Avenue as a continued measure to manage speeds
- Consider traffic controls in series (such as single lane slow points or speed cushions/speed humps) on Miller Street
- Consider single lane slow points or speed cushions/speed humps in series along Palmerston Road
- Consider a driveway link or more substantial kerb buildouts on Hardy Street adjacent Soutar Park
- Review parking controls on Clifton Street and consider staggering 'no parking' parking controls onto either side of the street
- Consider further midblock speed data collection on Trevelyan Street / confirm location of existing speed data to confirm residents concern regarding speed
- In the long term with the completion of the Simpson Parade Shared Path on the Keswick Creek alignment investigate a prioritised shared use crossing of Trevelyan Street
- Consider driveway link adjacent Wayville Reserve
- Consider driveway links or kerb build outs on Parsons Street and Young Street between Goodwood Road and Joslin Street
- Consider landscaped kerb build outs on Joslin Street at intersections with Davenport Lane and Terrace to create visual narrowing or realignment of the roadway
- Consider vehicle speed management as part of any upgrade of the Charles Walk crossings of King William Road
- Investigate planted median treatments on the length of Rose Terrace (with appropriate gaps for driveway access/U-turns where appropriate and required)
- Monitor speeds on Young Street between Joslin Street and Clark Street with the implementation of other calming measures on Joslin and Young Street west

4.5 Road Safety

- Consider upgrade of lighting on the noted streets/footpaths where limited lighting was indicated by residents as a key concern (Section 3.6)
- Liaise with DPTI to seek a 'Keep Clear' zone adjacent Young Street intersection on Unley Road
- Consider right turn bans onto Parsons Street from Goodwood Road
- Investigate planted central median treatment along the length of Rose Terrace (with appropriate gaps for driveway access and U-turns where required). This will control U-turn locations near Annesley College

- Improve school zone signage visibility adjacent Annesley College. Consider the potential to upgrade school crossing to increase visibility (e.g. raised crossing and/or flashing lights)

4.6 Parking

- Consider locations to remove parking from and/or install short term or resident parking
- Consider locations for possible time limits on parking to prevent all-day parking
- Review parking in proximity to intersections where sight distance and safety issues identified (refer Section 3.3.4)
- Consider increased enforcement of on-street parking controls, particularly those streets close to Greenhill Road, King William Road, the tram stops and Unley Road
- Investigate replacing parallel parking with 45, 60 or 90-degree parking on Bartley Crescent. This could potentially increase available parking by 25 to 50 + spaces depending on arrangement, with more parking potentially being able to be achieved with the removal/relocation of trees. This would also require the kerb to be realigned, and could potentially include a footpath along the western boundary of the tramline
- Investigate restricting parking on Rose Terrace adjacent Annesley College to be 15 minute short term parking in school pickup and drop off times
- Implement planned paid parking trials on Bartley Crescent and Railway Terrace South
- Investigate improvements to parking areas behind King William Road frontages for publically available car parking, in alignment with the King William Road Master Plan

4.7 Cycling

- Consider cyclist safety and accessibility in any traffic control treatment of local roads
- Explore options to extend Charles Walk / Simpson Parade route through to the Mike Turtur Bikeway as part of the Simpson Parade Shared Path study, including priority crossing of Trevelyan Street
- Upgrade Charles Walk crossings of King William Road as part of the Simpson Parade Shared Path
- Liaise with DPTI to provide green painted cycle lanes on Unley Road at each of the side road intersections
- Liaise with DPTI to investigate improving cycle lanes on Unley Road, particularly continuity through missing sections and time period availability
- Consider upgrades of Weller Street to improve pedestrian and cyclist safety and the designation of the street as a 'bikeway' as identified in the 2015 draft Walking and Cycling Plan
- Investigate treatment options at the intersection of Railway Terrace South / Musgrave Street / Mike Turtur Bikeway to slow cyclists, provide better sight distance and reduce pedestrian/cycle/vehicle conflicts at the intersection
- In conjunction with DPTI seek to develop a continuous shared path adjacent to the tram line between Musgrave Street and Goodwood Road
- Any upgrades to speed cushions (on Mitchell Street / Park Street in particular) to provide bypass for cyclists
- Consider bicycle advisory treatments on Joslin Street to improve designation of the street as a 'bikeway' as identified in the 2015 draft Walking and Cycling Plan

4.8 Walking

- Consider provision of build-outs and median refuges along King William Road to assist pedestrian permeability of the shopping precinct
- Consider widening of existing footpaths along known pedestrian routes or to replace sub-standard footpaths, reallocating road space on lower volume streets
- Explore options to extend Charles Walk / Simpson Parade route through to the Mike Turtur Bikeway as part of the Simpson Parade Shared Path, including priority crossing Trevelyan Street
- Upgrade Charles Walk crossings of King William Road as part of the Simpson Parade Shared Path
- Investigate and liaise with DPTI to provide a pedestrian maze tram line crossing near Goodwood Road Tram Stop for people that park further north east to provide better access to the available parking

Given the recent changes to legislation that permit cycling on footpaths for cyclists of all ages (unless signposted otherwise), footpaths where high levels of pedestrian and cyclist activity are expected should be upgraded to a width more suitable to shared pedestrian and cyclist use. This is particularly important on footpaths that are near schools, parks, aged care facilities and neighbourhood centres (shops etc.) as higher footpath use and/or greater presence of cyclists (or the elderly) is likely.

Cycling on footpaths should not be seen as an alternative to providing cyclist infrastructure. However, where bicycle lanes or paths suddenly terminate, there is a squeeze point or high vehicle speeds, the ability to cycle on the footpath will benefit less confident cyclists in particular. In locations where footpath cycling is anticipated regularly the footpath should ideally be widened to allow for the safety of pedestrians and cyclists. Signage or pavement stickers can be installed as recommended in the draft 2015 Walking and Cycling Plan to remind cyclists to be considerate and give pedestrians priority.

4.9 Public Transport

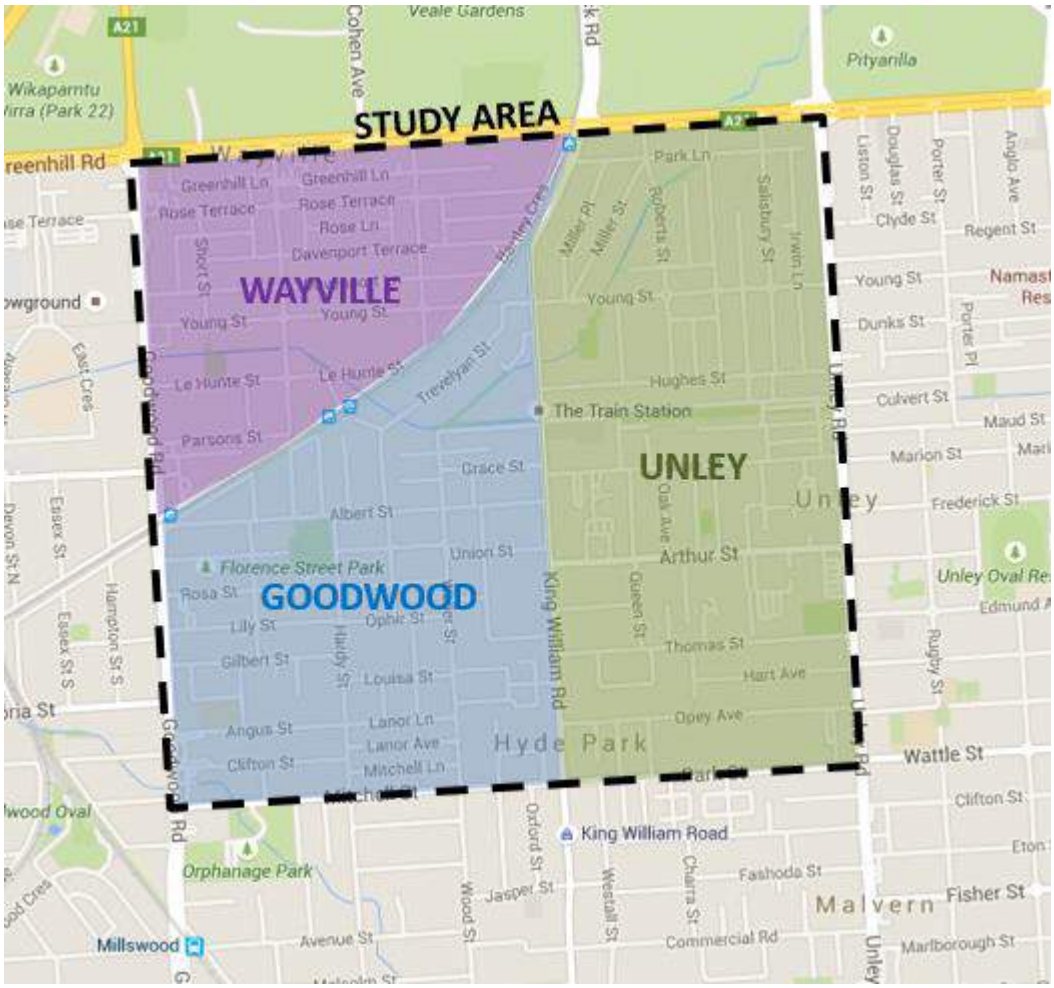
- Improve lighting along major pedestrian links to public transport
- Consider installation of bicycle parking at tram stops.
- Investigate increasing parking through revised arrangement along Bartley Crescent for use by public transport commuters using the Greenhill Road Tram Stop
- Investigate and liaise with DPTI to provide a pedestrian maze tram line crossing near Goodwood Road Tram Stop for people that park further north east to provide better access to the available parking
- Advocate to DPTI for increased frequencies and park and ride provision on existing public transport to the south of the study area to reduce the attractiveness of local on-street park and ride for the tram in comparison to other services.
- Advocate to and work with DPTI to provide pedestrian access improvements to existing bus stops on Greenhill Road, King William Road, Goodwood Road and Unley Road.
- Advocate to AdelaideMetro for increased promotion of '2 section' tram tickets (can be used from Forestville Tram Stop to/from city (without transfers))

5. Option Assessment

5.1 Introduction

Using the identified opportunities as a framework and taking account of initial comments from the Community Reference Group (CRG), the following sections (6, 7 and 8) present the assessment completed for each potential option. The study area is broken down into 3 suburb areas, as defined in Figure 5.1 below. The options for each area of the study, Unley, Goodwood and Wayville, are presented in their respective sections of this report (Sections 6, 7 and 8).

Figure 5.1: Study Area Breakdown



The options have been considered within the same general headings as the opportunities, other than a consideration of the traffic volumes and speed as an overall traffic management assessment. Within this heading, each street has been considered in terms of the potential options and the likely outcomes from those options as well as the extent to which the option would meet the Council's strategic goals using a simple assessment matrix.

For each of the streets, the identified options have largely been identified on an individual street basis and the ability to resolve the specific issues on that street. However, these treatments will not be considered in isolation for the final package as some treatments will be mutually/partially

exclusive to others whilst other treatments will need complementary or precedent treatments in place.

Within the assessment matrix, the three objectives set out within the Council's 4 Year Plan for "Moving our Path to an Accessible City" are:

- Equitable Parking throughout the City
- An integrated, accessible and pedestrian friendly City
- Alternative travel options

In order to reflect the impact on traffic access and connectivity, the integrated, accessible and pedestrian friendly city objective has been categorised in two aspects, namely integrated and connected and accessible and pedestrian friendly. The accessible and pedestrian friendly objective has also been assessed as seeking to reduce or mitigate adverse traffic impacts in local streets. Thus the four objectives against which to assess options are:

- Equitable Parking throughout the City
- An integrated and connected city
- An accessible and pedestrian friendly City
- Alternative travel options

Each of the potential options has been assessed under each of these objectives and their respective sub-objectives and strategies to identify the extent to which the option would meet the objective. A five point scale has been used to indicate the outcome as noted below.

- Moderate to high benefit (✓✓)
- Small to moderate benefit (✓)
- Neutral outcome (N)
- Small to moderate impact (×)
- Moderate to high impact (××)

For each road or topic discussed below and in the following sections, the options are summarised in an assessment matrix.

5.2 Link and Place Assessment

Current best practice widely recognises that urban streets generally have two core activity functions being a Link function (i.e. the essential need to follow a continuous linear path through the street network with minimal disruption and seamless connection) and a Place function (i.e. the street is a destination and activities occur on or adjacent to the street)[3].

A review of the study area has identified a number of Link status streets as well as a number of existing (or opportunistic) Place status streets. Some streets share a Link and Place function and the differing needs of these streets must therefore be carefully considered.

These Link and Place streets are listed in each study area in Sections 6.2, 7.2 and 8.2 respectively.

5.3 Urban Design

There are a number of urban design improvements that could be considered within the study area and the following have been identified as potential opportunities across the whole of the study area:

- Improve lighting along major pedestrian links to public transport.

[3] Streets for People - Compendium for South Australian Practice (2012)

- Consider additional street furniture and rest areas along walking and cycling links.
- Incorporate landscaping into traffic control treatments where possible (e.g. driveway links).
- Consider reallocation of road space to improve walking and cycling modes where roadway space is well beyond the required capacity when road assets reach the end of their useful life.
- Investigate footpath improvements, particularly to sections with raised pavers due to tree roots
- Improve footpath width by maintaining overgrowing vegetation
- Repaint faded no standing lines on local streets

There are a number of urban design improvements specific to the sections of the study area (Unley, Goodwood and Wayville), and these are listed in each area in Sections 6.3, 7.3 and 8.3 respectively.

5.4 Traffic Network

This section considers the traffic management options appropriate for each of the streets within the study area. Whilst before traffic volumes and speeds were considered independently, in the option assessment each Street has been considered for potential options, potential impacts on that street and adjoining streets and the likely outcomes. An assessment for each street is set out in the respective section (Unley, Goodwood and Wayville), and these are listed in each area in Sections 6.4, 7.4 and 8.4 respectively.

5.5 Walking

A number of the options considered in conjunction with individual streets set out in the analysis in Sections 6.4, 7.4 and 8.4 will provide benefits to pedestrians and the general walking environment within the study area. Street specific measures are covered in Sections 6.5, 7.5 and 8.5 for each area within the study area respectively.

5.6 Cycling

As with walking options, there are a number of options identified on individual streets that would be of benefit to cyclists, as noted in Sections 6.4, 7.4 and 8.4 for the respective areas.

In addition to the street specific measures, there are also a number of other general options identified for improving the cycling environment and specific projects as noted in Sections 6.6, 7.6 and 8.6 for each area within the study area respectively.

5.7 Public Transport

Although much of the public transport network is the responsibility of DPTI, the City of Unley should be working with and advocating to DPTI for improvements, particularly as evidence suggests there have been reductions in patronage over recent years. Improvements will support existing travel demand and encourage modal shift and ensure that as additional development is implemented through the Inner Metro DPA, enhanced public transport options and capacity are available to avoid further pressure from increased traffic demand.

A number of public transport options have been identified that would be led by Unley and these are set out in Sections 6.7, 7.7 and 8.7 respectively.

5.8 Parking

There are a number of general options identified relating to parking covered in Sections 6.8, 7.8 and 8.8 for each area within the study area respectively.

6. Option Assessment – Unley

6.1 Introduction

The Unley section of the study area is bounded by Greenhill Road to the north, Unley Road to the east, Park Street to the south and King William Road to the west as shown on Figure 5.1 (in Section 5 above).

6.2 Link and Place Assessment

The assessment of the study area identified a number of existing or potential link and place status streets and locations within the study area.

6.2.1 Link Assessment

A review of the Unley section of the study area has identified the following key Link status classifications and opportunities:

- Unley Road
- King William Road
- Park Street
- Charles Walk as a pedestrian and cyclist link

6.2.2 Place Assessment

A review of the Unley section of the study area has identified the following key Place status classifications and opportunities:

- Sections of King William Road (notably between Arthur Street and Mitchell Street)
- Sections of Unley Road (particularly adjacent Unley Shopping Centre)
- Sections of streets surrounding North Unley Play Park (Young Street, Killicoat Street)
- Sections of streets surrounding Soldiers Memorial Gardens (Unley Road, Thomas Street)
- Sections of streets surrounding Morrie Harrell Playground (Ramage Street, Ash Avenue, Arthur Street)
- Sections of streets surrounding Boothby Court Park (Boothby Court)
- Charles Walk as a linear reserve

6.3 Urban Design

In addition to the areas around the identified places noted above, there are a number of urban design improvements that could be considered within the study area and the following have been identified as potential opportunities:

- Continue the use of 'Parklets' to create social and dining spaces in car parks on King William Road beyond the initial Parklet Program.
- Improve visibility of speed cushions on Opey Avenue and Park Street with repainting.

6.4 Traffic Network

This section considers the traffic management options appropriate for each of the streets within the study area. Whilst before traffic volumes and speeds were considered independently, in the option assessment each street has been considered for potential options, potential impacts on that street and adjoining streets and the likely outcomes. An assessment for each street is set out below.

6.4.1 Hughes Street

The options developed for Hughes Street relate to managing the speed and volume of traffic. Hughes Street is frequently used by drivers travelling between King William Road and Unley Road, as well as to and from Greenhill Road to the north. The identified options for Hughes Street are:

- Kerb build outs at Roberts Street and Palmerston Road and Salisbury Street intersection

The addition of traffic calming measures such as kerb build outs would change the visual perception of the wide straight street and help reduce vehicle speed. Traffic calming measures may discourage the use of Hughes Street as part of a cut through.

Table 6.1 provides the option assessment matrix for the above options.

Table 6.1: Hughes Street Option Assessment Matrix

Option / Objective	Kerb build-outs
Equitable Parking	N
Integrated & Connected	N
Accessible & Pedestrian Friendly	✓
Alternative Travel	✓

6.4.2 Young Street

The options developed for Young Street relate to managing the speed and volume of traffic. Young Street is frequently used by drivers travelling between King William Road and Unley Road, as well as to and from Greenhill Road to the north. The identified options for Young Street are:

- Convert roundabout at Roberts Street to lower speed "radial" roundabout as part of bike route upgrade.
- Investigate options with DPTI to install traffic signals at intersection with Unley Road to include pedestrian phases to replace adjacent PAC.

Converting the existing roundabout at the intersection with Roberts Street to a lower speed "radial" roundabout would be expected to lower the speeds of vehicles on Young Street.

Amalgamating the existing PAC with signals at the intersection of Young Street and Unley Road would enable safer right turns (significant history of crashes involving right turn vehicles) while still providing a good pedestrian crossing route on Unley Road. A previous concept design has been prepared for this intersection and this is likely to remain the most appropriate scheme, although it would have some impact on the existing Unley Road footpaths.

Table 6.2 provides the option assessment matrix for the above options.

Table 6.2: Young Street Option Assessment Matrix

Option / Objective	Lower speed "radial" roundabout	Traffic Signals at intersection with Unley Road
Equitable Parking	N	N
Integrated & Connected	N	✓✓
Accessible & Pedestrian Friendly	N	✓
Alternative Travel	✓	✓

6.4.3 Roberts Street

The options developed for Roberts Street relate to managing the speed and volume of traffic. Roberts Street is frequently used by drivers travelling between King William Road and Unley Road to and from Greenhill Road to the north. The identified options for Roberts Street are:

- Kerb buildouts at Hughes Street intersection

The addition of traffic calming measures such as kerb build outs would change the visual perception of the wide straight street and help reduce vehicle speed. Traffic calming measures may discourage the use of Roberts Street as part of a cut through.

Table 6.3 provides the option assessment matrix for the above options.

Table 6.3: Roberts Street Option Assessment Matrix

Option / Objective	Kerb build-outs
Equitable Parking	N
Integrated & Connected	N
Accessible & Pedestrian Friendly	✓
Alternative Travel	✓

6.4.4 Palmerston Road

The options developed for Palmerston Road relate to managing the speed and volume of traffic. Palmerston Road is frequently used by drivers travelling from Greenhill Road to King William Road. The identified options for Palmerston Road are:

- Kerb buildouts at Hughes Street intersection
- Raised Table at existing one-way restriction
- Provision of angle parking on the section between Park Lane and Greenhill Road

The addition of traffic calming measures such as kerb build outs would change the visual perception of the wide straight street and help reduce vehicle speed. Traffic calming measures may discourage the use of Palmerston Road as part of a cut through.

The introduction of a raised table, which would be likely to include distinctive pavement treatment would enhance the profile of the restriction and potentially reduce the illegal northbound movements. It would also reduce traffic speeds.

The introduction of angle parking on the section of Palmerston Road north of Park Lane would provide an opportunity to increase the parking provision for the local businesses and potentially reduce the impact of overspill parking in to the residential areas further south. Additional design assessments will be required to examine the need for modifications to existing kerb lines, impact on trees and impact on crossover accesses.

Table 6.4 provides the option assessment matrix for the above options.

Table 6.4: Palmerston Road Option Assessment Matrix

Option / Objective	Kerb build-outs	Raised table at part road closure	Angle parking north of Park Lane
Equitable Parking	N	N	✓
Integrated & Connected	N	N	N
Accessible & Pedestrian Friendly	✓	✓	N
Alternative Travel	✓	✓	N

6.4.5 Salisbury Street

The options developed for Salisbury Street relate to managing the speed and volume of traffic. The identified options for Salisbury Street are:

- Kerb buildouts at Hughes Street intersection
- Raised Table at existing one-way restriction
- Provision of angle parking on the section between Park Lane and Greenhill Road

The addition of traffic calming measures such as kerb build outs would change the visual perception of the wide straight street and help reduce vehicle speed. Traffic calming measures may discourage the use of Salisbury Street part of a cut through.

As with Palmerston Road, the introduction of a raised table with distinctive pavement treatment would enhance the profile of the restriction, potentially reduce the illegal southbound movements and reduce traffic speeds.

Similarly, the introduction of angle parking on the section of Salisbury Street north of Park Lane would provide the same opportunities to increase parking provision as Palmerston Road and will require similar additional design assessments.

Table 6.5 provides the option assessment matrix for the above options.

Table 6.5: Salisbury Street Option Assessment Matrix

Option / Objective	Kerb build-outs	Raised table at part road closure	Angle parking north of Park Lane
Equitable Parking	N	N	✓
Integrated & Connected	N	N	N
Accessible & Pedestrian Friendly	✓	✓	N
Alternative Travel	✓	✓	N

6.4.6 Thomas Street

The options developed for Thomas Street relate to managing the speed and volume of traffic. Thomas Street is frequently used by drivers travelling from King William Road to/from Unley Road. The identified options for Thomas Street are:

- Stagger parking between north and south sides of Thomas Street
- Install raised intersection at Thomas Street / Mornington Road intersection

Currently no parking dashed yellow lines and signage are provided on the northern side of the carriageway in a large section where the road is quite narrow. Staggering parking controls along

either side of the street would assist in slowing vehicle speeds along the street by visually meandering the carriageway with the use of parked vehicles.

The raised table adjacent to the connecting path to Mornington Road would assist with speed management and enhance the presence of the existing signed cycle route. The raised table could be design to enable parking to continue on the south side of the street at this location.

Table 6.6 provides the option assessment matrix for the above option.

Table 6.6: Clifton Street Option Assessment Matrix

Option / Objective	Staggered Parking Controls	Raised table at Mornington Road connecting path
Equitable Parking	✓	N
Integrated & Connected	N	✓
Accessible & Pedestrian Friendly	✓	✓✓
Alternative Travel	✓	✓✓

6.4.7 Little Charles Street and Palmerston Place

The options developed for Little Charles Street and Palmerston Place relate to managing the speed and volume of traffic and improvement of the streets as bicycle routes. The identified options for Little Charles Street and Palmerston Place are:

- Investigate driveway link or shared street options and street lighting upgrades on Little Charles Street and Palmerston Place between Palmerston Road and Charles Street

Parking is not currently permitted on the section of Little Charles Street between Charles Street and Palmerston Road and thus there wold be no parking impact from any of the options. The route is seen as an important connection for local access but is also used by some rat-running traffic. Changing the nature of the street will retain the local connectivity and may deter some of the through traffic.

An option for a pedestrian and cyclist crossing at Charles Walk, providing priority for pedestrian and cyclists is considered as an option in the walking and cycling section and has also been identified in the 2015 Draft Walking and Cycling strategy. This would be likely to act as a further deterrent to through traffic.

Table 6.7 provides the option assessment matrix for the above options.

Table 6.7: Little Charles Street / Palmerston Place Option Assessment Matrix

Option / Objective	Driveway Links	Shared Street	Street Lighting Upgrades
Equitable Parking	N	N	N
Integrated & Connected	N	N	N
Accessible & Pedestrian Friendly	✓	✓✓	✓
Alternative Travel	✓	✓✓	N

6.4.8 Beech Avenue

The identified options for Beech Avenue are:

- Investigate pedestrian/cyclist lighting provision as per Pitchers Lane
- Consider local traffic management options to improve safety for all road users around the bend

Table 6.8 provides the option assessment matrix for the above option.

Table 6.8: Beech Avenue Option Assessment Matrix

Option / Objective	Pedestrian/cyclist lighting provision	Localised Traffic Management
Equitable Parking	N	N
Integrated & Connected	N	N
Accessible & Pedestrian Friendly	✓	✓
Alternative Travel	✓	N

6.4.9 Opey Avenue

The identified options for Opey Avenue relate to supporting the bike route with monitoring vehicle speeds and potential future upgrades to further calm traffic speeds. The options identified for Opey Avenue are:

- Continue to monitor vehicle speeds in Opey Ave
- Raised intersection tables at Pitchers Lane and Russell Street to support existing bike route

As with the proposed raised table on Thomas Street, the design could continue to support parking on at least one side of the road, as well as maintaining access to properties.

Table 6.9 provides the option assessment matrix for the above option.

Table 6.9: Opey Avenue Option Assessment Matrix

Option / Objective	Raised intersection tables at Pitchers Lane and Russell Street
Equitable Parking	N
Integrated & Connected	N
Accessible & Pedestrian Friendly	✓
Alternative Travel	✓

6.4.10 Hart Avenue

Work with future developers on the proposed Cremorne Plaza site to develop traffic, transport and parking management plan to minimise local traffic impact on Hart Avenue should redevelopment of this site proceed in the future.

6.4.11 King William Road

Implement priority measures from previous masterplan:

- Relocation/addition of bike parking
- Parking improvements
- Reallocation of space at Park Street/Mitchell Street signals
- Footpath improvements
- Kerb buildouts where parking is restricted

6.4.12 Unley Road

The options identified for Unley Road are:

- Investigate opportunities to replace on-street parking on Unley Road with improved off-street parking provision, capacity and signage.
- Work with Unley Central developers to improve movement and access around shopping centre

6.5 Walking

A number of the options considered in conjunction with individual streets set out in the analysis in Section 6.4 will provide benefits to pedestrians and the general walking environment within the study area. This includes:

- Investigate formal pedestrian/cyclist crossing opportunities at Charles Walk/Little Charles Street.
- Investigate driveway link or shared street options and street lighting upgrades on Little Charles Street and Palmerston Place between Palmerston Road and Charles Street.
- Investigate options with DPTI to include pedestrian phases to replace adjacent PAC at intersection of Young Street with Unley Road.
- Investigate pedestrian/cyclist lighting provision on Beech Avenue as per Pitchers Lane, as well as localised traffic management at the bend to assist safety for all road users.
- Reduction of traffic speeds and potentially volumes with traffic calming treatments.

In addition to the street specific measures, there are also a number of other general options identified for improving the pedestrian environment and specific projects:

- Ensure there is a strategy for future upgrade and maintenance of footpaths.
- Where residual verge width is below 0.6/1.0m and around transport facilities (bus stops) use full width paving and tree pits where the verge is not managed/landscaped.
- Upgrade footpath widths to a minimum of 1.5m, with additional width based on use requirements as part of planned renewal.
- Where street trees limit or damage footpaths, seek to implement footpaths around the trees as build-outs for indented parking or road narrowings.
- Ensure there is a strategy for future upgrade and improvement to street lighting.
- Consider provision of build-outs and median refuges along King William Road to assist pedestrian permeability of the shopping precinct as per the King William Road Masterplan.

Table 6.10 provides the option assessment matrix for the above walking related options.

Table 6.10: Walking Option Assessment

Option / Objective	Upgrade & Maintenance Strategy	Full width paving	Minimum width (1.5m) footpath	Footpaths around trees	Street Lighting Strategy	Build outs and refuges on King William Rd
Equitable Parking	N	N	N	×	N	N/×
Integrated & Connected	✓	N	✓	✓	N	N
Accessible & Pedestrian Friendly	✓	✓✓	✓✓	✓✓	✓✓	✓✓
Alternative Travel	✓	✓	✓	✓	✓	✓

6.6 Cycling

As with walking options, there are a number of options identified on individual streets that would be of benefit to cyclists, as noted below:

- Consider raised intersection tables at intersections of Opey Avenue with Pitchers Lane and Russell St to support bike route.
- Investigate formal pedestrian/cyclist crossing opportunities at Charles Walk/Little Charles Street.
- Upgrade and extend the existing signed bicycle route between Park Street and Charles Street to continue via Roberts Street to connect to existing routes in to the Parklands in accordance with the 2015 draft Walking and Cycling Plan.
- Investigate driveway link or shared street options and street lighting upgrades on Little Charles Street and Palmerston Place between Palmerston Road and Charles Street.
- Investigate pedestrian/cyclist lighting provision on Beech Avenue as per Pitchers Lane, as well as localised traffic management at the bend to assist safety for all road users.
- Young Street lower speed radial roundabout at Roberts Street as part of bike route.
- Reduction of traffic speeds and potentially volumes with traffic calming treatments.

In addition to the above options, the following options have also been identified that would be specifically for cyclists, and in some cases also providing benefits for pedestrians and assisting with reducing the impact of traffic.

- Review designation and implement upgrades of local bike direct network in accordance with the 2015 draft Walking and Cycling plan.
- Consider the potential for formal bike parking at tram stops.
- Investigate ongoing cycling route connections through to Northgate Street and Heywood Park in accordance with the 2015 draft Walking and Cycling Plan.

Table 6.11 provides the option assessment matrix for the above cycling related options.

Table 6.11: Cycling Option Assessment

Option Objective	Review and upgrade Local Bike Direct Network	Formal Bike Parking at Tram stops	Strengthening connections through to Northgate Street and Heywood Park
Equitable Parking	N	N	N
Integrated & Connected	✓✓	✓✓	✓
Accessible & Pedestrian Friendly	✓✓	✓	N
Alternative Travel	✓✓	✓✓	✓✓

6.7 Public Transport

Although much of the public transport network is the responsibility of DPTI, the City of Unley should be working with and advocating to DPTI for improvements, particularly in light of the significant recent reductions in patronage. Improvements will support existing travel demand and encourage modal shift and ensure that as additional development is implemented through the Inner Metro DPA, enhanced public transport options and capacity are available to avoid further pressure from increased traffic demand. A number of public transport options have been identified that would be led by Unley, including:

- Improve pedestrian link lighting
- Consider installation of bicycle parking at tram stops
- Advocate to AdelaideMetro for increased promotion of '2 section' tram tickets

Table 6.12 provides the option assessment matrix for the above options that would be led by Unley Council.

Table 6.12: Public Transport Option Assessment for City of Unley

Option / Objective	Review and upgrade access lighting	Formal Tram Bike Parking	Advocate to AdelaideMetro for 2 Section Tram Ticket Promotion
Equitable Parking	N	N	N
Integrated & Connected	N	N	N
Accessible & Pedestrian Friendly	✓✓	✓	N
Alternative Travel	✓✓	✓✓	✓

Options that would require delivery through advocating to and working with DPTI are:

- increased frequencies of existing public transport;
- Review bus stop locations in relation to safe crossing provision for stops 1, 2 and 3 on Unley Road and stops 2, 3, 5 and 6 on Goodwood Road;
- pedestrian access improvements to existing bus stops on King William Road and Unley Road;
- Improvements to bus stop facilities;
- Improved Park and Ride options further south to reduce on street park and ride demand.

Table 6.13 provides the option assessment matrix for the above public transport related options that would require DPTI to lead.

Table 6.13: Public Transport Option Assessment in Conjunction with DPTI

Option / Objective	Train & tram capacity & frequency	Bus stop routes, locations, facility & frequency	Park & Ride improvements south
Equitable Parking	N	N	✓
Integrated & Connected	✓	✓	✓✓
Accessible & Pedestrian Friendly	✓✓	✓	✓
Alternative Travel	✓✓	✓✓	✓

6.8 Parking

Concerns over long term parking, particularly relating to commuters and associated with staff and customers of businesses on Unley Road and King William Road, were raised, as well as concerns relating to the lack of enforcement of existing parking restrictions. Furthermore, concerns were raised regarding vehicles being parked too close to intersections.

A limited number of options and actions have therefore been identified:

- Seek to engage with Unley Road and King William businesses to understand their staff parking provision and arrangements and assist with managing on-street demands. Recommendations of the King William Road masterplan relating to consolidating and improving (quality, quantity and visibility) of rear parking provision should be implemented and also considered for Unley Road.
- Monitor on-street parking locations for possible extension of the zones covered by existing time limited parking to prevent all-day parking.
- Review parking restriction enforcement regularity, particularly on streets closest to the tramline, Unley Road and King William Road.
- Review all signage and line marking in proximity to intersections to ensure that it is adequately and visibly marked to maintain sight distance and safe parking distances.

7. Option Assessment – Goodwood

7.1 Introduction

The Goodwood section of the study area is bounded by Glenelg Tram Line to the north, King William Road to the east, Mitchell Street to the south, and Goodwood Road to the west as shown on Figure 5.1 (in Section 5 above).

7.2 Link and Place Assessment

The assessment of the study area and consultation with the CRG identified and confirmed a number of existing or potential link and place status streets and locations within the study area.

7.2.1 Link Assessment

A review of the Goodwood section of the study area has identified the following key Link status classifications and opportunities:

- King William Road
- Goodwood Road (arterial)
- Mitchell Street
- Albert Street
- Mike Turtur Bikeway (incorporating Railway Terrace South)
- Lane between Bendall Avenue/Foundry Street
- Weller Street (as a Bicycle Boulevard)
- Simpson Parade (as part of the Bicycle Network)

7.2.2 Place Assessment

A review of the Goodwood section of the study area has identified the following key Place status classifications and opportunities:

- Sections of King William Road (notably between Arthur Street and Mitchell Street)
- Sections of Goodwood Road (notably between tram line and Victoria Street)
- Sections of streets surrounding Soutar Park (Albert Street, Arunga Close, Hardy Street, Florence Street)
- Section of Florence Street adjacent Florence Street Park
- Simpson Parade Reserve as a linear reserve (adjacent Simpson Parade)

7.3 Urban Design

In addition to the areas around the identified places noted above, there are a number of other urban design improvements that could be considered within the study area and the following have been identified as potential opportunities:

- Continue the use of 'Parklets' to create social and dining spaces in car parks on King William Road beyond the initial Parklet Program.
- Improve visibility of speed cushions on Mitchell Street and Albert Street with repainting.
- Upgrade the Young Street approaches to the tramline to indicate that Young Street continues on the other side of the tramline.

7.4 Traffic Network

This section considers the traffic management options appropriate for each of the streets within the study area. Whilst before traffic volumes and speeds were considered independently, in the option assessment each Street has been considered for potential options, potential impacts on that street and adjoining streets and the likely outcomes. An assessment for each street has been set out.

7.4.1 Albert Street

The options developed for Albert Street relate to managing the speed and volume of traffic. Albert Street is frequently used as part of a rat running route by drivers travelling between Goodwood Road and King William Road, in conjunction with other local streets. The identified options for Albert Street are:

- Intersection kerb buildouts at Weller Street and Hardy Street
- Raised intersections at Weller Street and Hardy Street
- Retain speed humps
- Pedestrian refuge adjacent Soutar Park
- Remove parking from one side of the street and stagger parking areas along street
- Review ongoing need for right turn AM peak ban from Albert Street onto Weller Street (turning to the north)
- Pavement bars at King William Road intersection

The addition of traffic calming measures such as kerb build outs and raised intersections would change the visual perception of the street and help reduce vehicle speed. Additional traffic calming measures may discourage the use of Albert Street as part of a rat run for vehicles between Goodwood Road (via local street network) and King William Street.

Overall the benefits from reduced traffic speed and some deterrence to using the route that arise from the presence of speed humps result in a preferred option for them to be retained with the addition of kerb build-outs around the intersections of Weller Street and Hardy Street and a pedestrian refuge at Soutar Park.

Staggered parking controls along the street would assist in slowing vehicle speeds along the street, as well as allowing for two vehicles to pass one another more frequently than currently occurs (as parking on both sides often restricts sections of Albert Street to effectively one-way width). The parking could either be restricted to one side only throughout the street or limited to one side only at certain locations to assist passing vehicles.

Reviewing the ongoing need for the right turn AM peak ban from Albert Street onto Weller Street (turning to the north) is seen as appropriate as this turn does not seem desirable to rat runners, and may be inconvenient to residents.

Pavement bars at the King William Road intersection will help define the carriageway and discourage corner cutting at this location. Discouraging corner cutting may also help reduce the speed of right turns into Albert Street.

Table 7.1 provides the option assessment matrix for the above options.

Table 7.1: Albert Street Option Assessment Matrix

Option / Objective	Kerb build-outs	Raised intersection	Retain Speed Humps	Stagger Parking	Pedestrian Refuge	Removal of Right Turn Ban	Pavement bars
Equitable Parking	N	N	N	x	x	N	N
Integrated & Connected	N	N	N	✓	✓	✓	N
Accessible & Pedestrian Friendly	✓	✓	N	N	✓	N	N
Alternative Travel	✓	✓	N	N	✓	N	N

7.4.2 Weller Street

The options developed for Weller Street relate to managing the speed and volume of traffic. Weller Street is frequently used by drivers rat running through the area. The identified options for Weller Street are:

- Intersection kerb buildouts at Albert Street
- Raised intersection with Albert Street
- Full road closure immediately north of Ophir Street
- Install angled slow points, driveway links or road humps as an alternative to road closure

The addition of traffic calming measures such as kerb build outs and raised intersections would change the visual perception of the wide straight street and help reduce vehicle speed. Traffic calming measures may discourage the use of Weller Street as part of a rat run for vehicles. It would also support the designation of the street as a key route within the local cycling network.

Full road closure of Weller Street immediately north of Ophir Street would likely discourage (or potentially shift) rat running from Weller Street. There would be connectivity and residential access issues associated with a full closure, and although this option was generally well supported by the Goodwood CRG, it would need to be investigated further. Alternative options to full road closure would be extensive traffic management treatments such as angled, single lane slow points, driveway links and road humps.

The advantage of a road closure over other measures is that it could be cost effectively trialled for an initial period (typically 6 months) through the installation of 2 bollards. If the closure is supported following the trial a more permanent design can then be developed to integrate with the street environment.

Table 7.2 provides the option assessment matrix for the above options.

Table 7.2: Weller Street Option Assessment Matrix

Option / Objective	Kerb build-outs	Raised intersection	Road Closure	Traffic Management Measures
Equitable Parking	N	N	N	×
Integrated & Connected	N	N	×	×
Accessible & Pedestrian Friendly	✓	N	✓✓	✓
Alternative Travel	✓	✓	✓✓	✓

7.4.3 Hardy Street

The options developed for Hardy Street relate to managing the speed and volume of traffic. Hardy Street is frequently used by driver's rat running through the area. The identified options for Hardy Street are:

- Intersection kerb buildouts at Albert Street
- Raised intersection with Albert Street
- Full road closure immediately north of Ophir Street
- Install angled slow points, driveway links or road humps as an alternative to road closure
- Driveway link, kerb build outs or localised road narrowing on Hardy Street adjacent Soutar Park.

The addition of traffic calming measures such as kerb build outs, driveway links, localised road narrowing and raised intersections would change the visual perception of the wide straight street and help reduce vehicle speed. Traffic calming measures may discourage the use of Hardy Street as part of a rat run for vehicles. Providing a driveway link, kerb buildouts or road narrowing adjacent Soutar Park will also assist pedestrian crossing adjacent the park (with a narrower road width to cross) as well as assisting traffic calming.

Full road closure of Hardy Street immediately north of Ophir Street would likely discourage (or potentially shift) rat running on Hardy Street. There would be connectivity and residential access issues associated with a full closure, and although this option was generally well supported by the Goodwood CRG, it would need to be investigated further. Alternative options to full road closure would be extensive traffic management treatments such as angled, single lane slow points, driveway links and road humps.

As discussed above for Weller Street, the advantage of a road closure over other measures is that it could be cost effectively trialled for an initial period and a more permanent design implemented later if the permanent closure is supported.

Table 7.3 provides the option assessment matrix for the above options.

Table 7.3: Hardy Street Option Assessment Matrix

Option / Objective	Kerb build-outs	Raised intersection	Road Closure	Traffic Management Measures	Driveway Link	Localised Road Narrowing
Equitable Parking	N/×	N	N	×	×	×
Integrated & Connected	N	N	×	×	N	N
Accessible & Pedestrian Friendly	✓	N	✓	✓	✓	✓
Alternative Travel	✓	✓	✓	✓	✓	✓

7.4.4 Fox Street

The options developed for Fox Street relate to managing the speed and volume of traffic. The identified options for Fox Street are:

- Reverse give way priority at Owen Street and Gurr Street
- Slow points

Reversing give way priority at the intersection of Owen Street and Gurr Street would slow vehicles on Fox Street down as they would be required to give way to traffic on Owen and Gurr Streets

Slow points on Fox Street will provide traffic calming, encouraging lower speeds and discourage the use of Fox Street as part of a rat run for vehicles. This is likely to be of higher importance if the road closures on Weller Street and Hardy Street are implemented.

Table 7.4 provides the option assessment matrix for the above options.

Table 7.4: Fox Street Option Assessment Matrix

Option / Objective	Reverse Give Way Priority	Slow points
Equitable Parking	N	N
Integrated & Connected	N	N
Accessible & Pedestrian Friendly	N	✓
Alternative Travel	N	✓

7.4.5 Trevelyan Street

The options developed for Trevelyan Street relate to managing the speed and volume of traffic. Trevelyan Street is generally used by vehicles accessing the local area and by rat runners avoiding King William Road. The identified options for Trevelyan Street are:

- Introduction of raised single lane slow points with bicycle bypass
- Road humps / speed cushions

The introduction of traffic calming measures such as raised single lane slow points and road humps / speed cushions would change the visual perception of the wide straight street and help reduce vehicle speed. Traffic calming measures may discourage the use of Trevelyan Street as part of a rat run for vehicles. Providing bicycle bypasses to single lane slow points will assist cyclist safety through the traffic calming device and will not discourage cyclists from using Trevelyan Street. Road humps could be designed to taper to the existing kerb and gutter and therefore not result in any loss of on-street parking.

Table 7.5 provides the option assessment matrix for the above options.

Table 7.5: Trevelyan Street Option Assessment Matrix

Option / Objective	Raised single lane slow points with bicycle bypass	Road humps / speed cushions
Equitable Parking	×	N
Integrated & Connected	N	N
Accessible & Pedestrian Friendly	✓	✓
Alternative Travel	✓	✓

7.4.6 Ada Street / Lily Street Intersection

The options developed for the intersection of the Ada Street / Lily Street intersection relate to seeking to improve the safety of the intersection. The identified options for the intersection are:

- Intersection kerb buildouts
- Reverse Stop Sign priority
- Roundabout

Intersection kerb buildouts would help define the presence of the intersection, and direct drivers manoeuvring through the intersection. Reversing the stop sign priority would slow vehicles on Lily Street down as they would be required to give way to Ada Street.

The potential for a roundabout at the intersection should be considered, to reduce the risk of crashes at this intersection associated with right turns (with three crashes in the past 5 years recorded involving right turning vehicles). The roundabout would have to be designed to cater for residential rubbish collection vehicles and be small enough to reduce impact on adjacent properties and footpaths.

Table 7.6 provides the option assessment matrix for the above options.

Table 7.6: Ada Street / Lily Street Option Assessment Matrix

Option / Objective	Kerb buildouts	Reverse Stop Signs	Roundabout
Equitable Parking	N	N	N
Integrated & Connected	N	N	N
Accessible & Pedestrian Friendly	✓	✓	✓
Alternative Travel	✓	✓	✓

7.4.7 Clifton Street

The options developed for Clifton Street relate to managing the speed and volume of traffic by altering parking controls. Clifton Street is often used as a cut through as part of a rat running route. The identified options for Clifton Street are:

- Stagger 'no parking' parking controls onto either side of the street

Currently no standing lines and signage are provided on the southern side of the carriageway, as parking on both sides continuously would create a very narrow road environment. Staggering parking controls along alternate sides of the street would assist in slowing vehicle speeds along the street by visually meandering the carriageway with the use of parked vehicles.

Table 7.7 provides the option assessment matrix for the above option.

Table 7.7: Clifton Street Option Assessment Matrix

Option / Objective	Staggered Parking Controls
Equitable Parking	✓
Integrated & Connected	N
Accessible & Pedestrian Friendly	✓
Alternative Travel	✓

7.4.8 Kneebone Street / Boffa Street

The traffic conditions of Kneebone Street and Boffa Street should continue to be monitored following the implementation of other recommendations.

7.4.9 Simpson Parade

The options identified for Simpson Parade relate to the formal extension of the east-west bike route. This has been identified in the draft Walking and Cycling Plan 2015.

7.4.10 Mitchell Street

No changes are recommended for Mitchell Street. The existing speed humps and turning restrictions should be maintained as appropriate and traffic speeds and volumes should continue to be monitored with the implementation of other local traffic calming measures.

7.4.11 Other Local Streets

The following are general recommendations for other local streets in the Goodwood section of the study area:

- Introduction of yellow no standing line marking near intersections
- Implement planned paid parking trial on Railway Terrace South

No other specific measures have been recommended for other local streets.

Traffic conditions should continue to be monitored following implementation of other recommended treatments.

7.4.12 King William Road

Implement priority measures from previous masterplan

- Relocation/addition of bike parking
- Parking improvements
- Reallocation of space at Park Street/Mitchell Street signals
- Footpath improvements
- Kerb buildouts where parking is restricted
- Improved crossing facilities

7.4.13 Goodwood Road

Review and prioritise recommendations from pending masterplan

- Entry threshold treatments

7.5 Walking

A number of the options considered in conjunction with individual streets set out in the analysis in Section 7.4 will provide benefits to pedestrians and the general walking environment within the study area. This includes:

- Provision of kerb buildouts on Albert Street and Hardy Street
- Pedestrian refuge adjacent Soutar Park on Albert Street
- Reduction of traffic speeds and potentially volumes with traffic calming treatments.

In addition to the street specific measures, there are also a number of other general options identified for improving the pedestrian environment and specific projects:

- Ensure there is a strategy for future upgrade and maintenance of footpaths;
- Where residual verge width is below 0.6/1.0m & around transport facilities (bus stops) use full width paving and tree pits where the verge is not managed/landscaped;
- Upgrade footpath widths to a minimum of 1.5m, with additional width based on use requirements as part of planned renewal;
- Where street trees limit or damage footpaths, seek to implement footpaths around the trees as build-outs for indented parking or road narrowings;
- Ensure there is a strategy for future upgrade and improvement to street lighting;
- Consider provision of build-outs and median refuges along King William Road to assist pedestrian permeability of the shopping precinct as per the King William Road Masterplan;

Table 7.8 provides the option assessment matrix for the above walking related options.

Table 7.8: Walking Option Assessment

Option / Objective	Upgrade & Maintenance Strategy	Full width paving	Minimum width (1.5m) footpath	Footpaths around trees	Street Lighting Strategy	Build outs and refuges on King William Rd
Equitable Parking	N	N	N	×	N	N/×
Integrated & Connected	✓	N	✓	✓	N	N
Accessible & Pedestrian Friendly	✓	✓✓	✓✓	✓✓	✓✓	✓✓
Alternative Travel	✓	✓	✓	✓	✓	✓

7.6 Cycling

As with walking options, there are a number of options identified on individual streets that would be of benefit to cyclists, as noted:

- Bicycle bypasses as part of traffic calming measures (e.g. single lane slow points, speed cushions,
- Reduction of traffic speeds and potentially volumes with traffic calming treatments.

In addition to the above options, the following options have also been identified that would be specifically for cyclists, and in some cases also providing benefits for pedestrians and assisting with reducing the impact of traffic.

- Review designation of local bike direct network;
- Consider the potential for formal bike parking at tram stops;

- Development of Weller Street as a bicycle boulevard as identified in the 2015 draft Walking and Cycling Plan to link to the proposed improvements to the south via Wood Street which are to be implemented in 2016/7 as part of the Walking and Cycling Plan;
- Review designation and implement upgrades of local bike direct network in accordance with the 2015 draft Walking and Cycling plan;
- Investigate treatment options at the intersection of Railway Terrace South / Musgrave Street / Mike Turtur Bikeway to slow cyclists, provide better sight distance and reduce pedestrian/cycle/vehicle conflicts at intersection.

There are several options that could be considered to improve the intersection of Railway Terrace South / Musgrave Street and the ongoing continuity of the Mike Turtur Bikeway. With the proposed implementation of a pedestrian/bicycle overpass at Goodwood Railway Station, Railway Terrace South is considered likely to become the limiting factor in attracting additional cyclists to the overall route. These options should be considered in conjunction;

- Short term: improve Musgrave Street intersection with Bikeway with line marking and modification of landscaping to improve the transition of cyclists onto Railway Terrace South (north side), increase driver awareness of the likely location and presence of cyclists and improve the separation between the bikeway and adjoining residential crossover.
- Short to medium term: make Railway Terrace South one-way (northeast bound) to better access parking and remove the potential conflict between cyclists exiting the Mike Turtur Bikeway and vehicles travelling onto Railway Terrace South from Musgrave Street.
- Medium to long term: Extend shared path along south side of tramline between Musgrave Street and Goodwood Road. This would require further investigation of boundaries (particularly for the fence line adjacent the tramline) and existing trees. This would need to be implemented in conjunction with modifications to the parking on Railway Terrace South with the final parallel/angle format dependent on the final design solution and provision of one-way or two-way traffic flow.

Table 7.9 provides the option assessment matrix for the above cycling related options.

Table 7.9: Cycling Option Assessment

Option / Objective	Review Local Bike Direct Network	Formal Bike Parking at Tram stops	Strengthening connections to/from Weller Street	Pathway Treatments at Railway Tce Sth / Musgrave St
Equitable Parking	N	N	N	×
Integrated & Connected	✓	✓✓	✓	✓✓
Accessible & Pedestrian Friendly	✓	✓	N	✓✓
Alternative Travel	✓	✓✓	✓✓	✓✓

7.7 Public Transport

Although much of the public transport network is the responsibility of DPTI, the City of Unley should be working with and advocating to DPTI for improvements, particularly in light of the significant recent reductions in patronage. Improvements will support existing travel demand and encourage modal shift and ensure that as additional development is implemented through the Inner Metro DPA, enhanced public transport options and capacity are available to avoid further pressure from increased traffic demand. A number of public transport options have been identified that would be led by Unley, including:

- Improve pedestrian link lighting
- Consider installation of bicycle parking at tram stops
- Advocate to Adelaide Metro for increased promotion of '2 section' tram tickets

Table 7.10 provides the option assessment matrix for the above options that would be led by Unley Council.

Table 7.10: Public Transport Option Assessment for City of Unley

Option / Objective	Review and upgrade access lighting	Formal Tram Bike Parking	Advocate to AdelaideMetro for 2 Section Tram Ticket Promotion
Equitable Parking	N	N	N
Integrated & Connected	N	N	N
Accessible & Pedestrian Friendly	✓	✓	N
Alternative Travel	✓	✓✓	✓

Options that would require delivery through advocating to and working with DPTI are:

- a pedestrian maze tram line crossing near Goodwood Road Tram Stop for people that park further north east to provide better access to the available parking and to the tram stop in general.
- increased frequencies of existing public transport;
- pedestrian access improvements to existing bus stops on Goodwood Road and King William Road;
- Improvements to bus stop facilities.

Table 7.11 provides the option assessment matrix for the above public transport related options that would require DPTI to lead.

Table 7.11: Public Transport Option Assessment in Conjunction with DPTI

Option / Objective	Additional Pedestrian Maze	Train & tram capacity & frequency	Bus stop routes, locations, facility & frequency
Equitable Parking	✓	N	N
Integrated & Connected	✓	✓	✓
Accessible & Pedestrian Friendly	✓	✓✓	✓
Alternative Travel	✓	✓✓	✓✓

7.8 Parking

Concerns over long term parking, particularly relating to tram commuters and associated with staff and customers of businesses on Goodwood Road and King William Road, were raised, as well as concerns relating to the lack of enforcement of existing parking restrictions. Furthermore, concerns were raised regarding vehicles being parked too close to intersections.

A limited number of options and actions have therefore been identified:

- Seek to engage with Goodwood Road and King William businesses to understand their staff parking provision and arrangements and assist with managing on-street demands. Recommendations of the King William Road masterplan relating to consolidating and improving (quality, quantity and visibility) of rear parking provision should be implemented and also considered for Goodwood Road.
- Implement the paid parking trial on Railway Terrace South.

- Monitor on-street parking locations for possible extension of the zones covered by existing time limited parking to prevent all-day parking.
- Review parking restriction enforcement regularity, particularly on streets closest to the tramline, Goodwood Road and King William Road.
- Review all signage and line marking in proximity to intersections to ensure that it is adequately and visibly marked to maintain sight distance and safe parking distances.
- Repaint faded no standing lines on local streets, particularly Gilbert Street and Arunga Close
- Investigate parking changes associated with options on Railway Terrace South to create width for Mike Turtur Bikeway extension.

8. Option Assessment – Wayville

8.1 Introduction

The Wayville section of the study area is bounded by Greenhill Road to the north, Glenelg Tram Line to the east and south, and Goodwood Road to the west as shown on Figure 5.1 (in Section 5 above).

8.2 Link and Place Assessment

The assessment of the study area and consultation with the CRG identified and confirmed a number of existing or potential link and place status streets and locations within the study area.

8.2.1 Link Assessment

A review of the Wayville section of the study area has identified the following key Link status classifications and opportunities:

- Greenhill Road (arterial)
- Goodwood Road (arterial)
- Mike Turtur Bikeway
- Joslin Street
- Bike Direct streets that form a link parallel to Mike Turtur (Sections of Parsons Street, Joslin Street, LeHunte Street, Clark Street, Young Street, Bartley Crescent)

8.2.2 Place Assessment

A review of the Wayville section of the study area has identified the following key Place status classifications and opportunities:

- Sections of streets surrounding Wayville Reserve (LeHunte Street)
- Sections of Goodwood Road
- Goodwood Road Tram Stop
- Greenhill Road Tram Stop
- Adelaide Showgrounds (to west of study area)

8.3 Urban Design

There are a number of urban design improvements that could be considered within the study area and the following have been identified as potential opportunities:

- Improve footpath width by maintaining overgrowing vegetation, particularly on Clark Street and Joslin Street.
- Upgrade the Young Street approaches to the tramline to indicate that Young Street continues on the other side of the tramline.

8.4 Traffic Network

This section considers the traffic management options appropriate for each of the streets within the study area. Whilst before traffic volumes and speeds were considered independently, in the option assessment each Street has been considered for potential options, potential impacts on that street and adjoining streets and the likely outcomes. An assessment for each street is set out.

8.4.1 Young Street

The options developed for Young Street relate to managing the speed and volume of traffic. Young Street is frequently used by drivers trying to avoid the intersection of Greenhill Road / Goodwood Road. The identified options for Young Street are:

- Consider a driveway link or kerb build outs/slow points/road humps between Goodwood Road and Joslin Street initially.
- Monitor speeds on Young Street between Joslin Street and Clark Street with the implementation of other calming measures.
- Provide signage at the tramline to indicate that Young Street continues on the other side of the tramline.

The addition of traffic calming measures such as kerb build outs, slow points and road humps would change the visual perception of a wide straight street and help reduce vehicle speed. Traffic calming measure may discourage the use of Young Street as part of a rat run between Goodwood Road and Greenhill Road.

Table 8.1 provides the option assessment matrix for the above options.

Table 8.1: Young Street Option Assessment Matrix

Option / Objective	Kerb build-outs	Driveway links	Slow Points	Road Humps	Young St Continuation Signage
Equitable Parking	N/x	x	x	N	N
Integrated & Connected	N	N	N	N	N/✓
Accessible & Pedestrian Friendly	✓	✓	✓	✓	N
Alternative Travel	✓	✓	✓	✓	N

8.4.2 LeHunte Street

The options developed for LeHunte Street relate to managing the speed and volume of traffic. LeHunte Street is frequently used by drivers trying to avoid the intersection of Greenhill Road / Goodwood Road. The identified options for LeHunte Street are:

- Consider driveway link or kerb buildouts adjacent Wayville Reserve;
- Consider slow points/road humps between Goodwood Rd and Joslin Street initially;
- Monitor speeds on LeHunte Street between Joslin Street and Clark Street with the implementation of other calming measures.

The addition of traffic calming measures such as kerb build outs, driveway links, slow points and road humps would change the visual perception of a wide straight street and help reduce vehicle speed. Traffic calming measure may discourage the use of LeHunte Street as part of a rat run between Goodwood Road and Greenhill Road.

A driveway link or kerb buildouts adjacent Wayville Reserve will provide the opportunity to increase the visibility of Wayville Reserve. Narrowing the carriageway width adjacent the reserve will also assist pedestrians crossing LeHunte Street to access the reserve.

Table 8.2 provides the option assessment matrix for the above options.

Table 8.2: LeHunte Street Option Assessment Matrix

Option / Objective	Driveway Link	Kerb build-outs	Slow Points	Road Humps
Equitable Parking	x	N/x	x	N
Integrated & Connected	N	N	N	N
Accessible & Pedestrian Friendly	✓	✓	✓	✓
Alternative Travel	✓	✓	✓	✓

8.4.3 Joslin Street

The options developed for Joslin Street relate to managing the speed and volume of traffic. Joslin Street is frequently used by drivers trying to avoid the intersection of Greenhill Road / Goodwood Road. The identified options for Joslin Street are:

- Consider landscaped kerb build outs on Joslin Street at intersections with Davenport Lane and Terrace;
- Consider roundabout at Davenport Terrace;
- Reverse priority of controls at Davenport Terrace (likely to require additional controls on Davenport Terrace).

Landscaped kerb build outs at the intersection of Joslin Street with Davenport Terrace and Davenport Lane would change the visual perception of a wide straight street and help reduce vehicle speed. Furthermore, kerb buildouts would reduce the crossing distance for pedestrians looking to cross Joslin Street at this location.

A roundabout at the intersection with Davenport Terrace would reduce speeds on Joslin Street as a physical divergence from the straight wide carriageway. Whilst roundabouts are not generally seen to be of assistance to pedestrians and cyclists, the reduced vehicle speeds that they create will assist in making the street safer for pedestrians and cyclists. The introduction of a new roundabout (at Davenport Terrace) in conjunction with the existing roundabouts would provide traffic control measures with the recommended spacing to achieve appropriate speeds.

Reversing the priority of the Joslin Street / Davenport Terrace intersection would similarly result in a decrease in speeds on Joslin Street. However, this would open Davenport Terrace up with potential increase in speeds through this section by removing the requirement to give way.

Traffic calming measures may discourage the use of Joslin Street as part of a rat run between Goodwood Road and Greenhill Road.

Table 8.3 provides the option assessment matrix for the above options.

Table 8.3: Joslin Street Option Assessment Matrix

Option / Objective	Kerb build-outs	Roundabout	Reverse Traffic Controls
Equitable Parking	N/x	N	N
Integrated & Connected	N	N	N
Accessible & Pedestrian Friendly	✓	✓	✓
Alternative Travel	✓	✓	✓

8.4.4 Clark Street

The options developed for Clark Street relate to managing the speed and volume of traffic. Clark Street is frequently used by drivers trying to avoid the intersection of Greenhill Road / Goodwood Road. The identified options for Clark Street are:

- Consider roundabout at Davenport Terrace;
- Reverse priority of controls at Davenport Terrace (likely to require additional controls on Davenport Terrace);
- Monitor need for additional controls between Greenhill Road and Rose Terrace.

A roundabout at the intersection with Davenport Terrace would reduce speeds on Clark Street as a physical divergence from the straight wide carriageway. Whilst roundabouts are not generally seen to be of assistance to pedestrians and cyclists, the reduced vehicle speeds that they create will assist in making the street safer for pedestrians and cyclists. The introduction of a new roundabout (at Davenport Terrace) in conjunction with the existing roundabouts would provide traffic control measures with the recommended spacing to achieve appropriate speeds.

Reversing the priority of the Clark Street / Davenport Terrace intersection would similarly result in a decrease in speeds on Clark Street. However this would open Davenport Terrace up with potential increase in speeds through this section by removing the requirement to give way.

Table 8.4 provides the option assessment matrix for the above options.

Table 8.4: Clark Street Option Assessment Matrix

Option / Objective	Roundabout	Reverse Traffic Controls
Equitable Parking	N	N
Integrated & Connected	N	N
Accessible & Pedestrian Friendly	✓	✓
Alternative Travel	✓	✓

8.4.5 Rose Terrace

The options developed for Rose Terrace generally relate to improving the safety around Annesley College. Several of these options will have the benefit of assisting speed and volume management. The identified options for Rose Terrace are:

- Investigate planted central median treatment. Initially Goodwood Road to Joslin Street and Clark Street to Bartley Terrace sections. Monitor section between Joslin Street and Clark Street and extend if required.
- Investigate options for pedestrian refuge crossings to improve pedestrian safety and assist with vehicle speed management.

- Improve school zone and crossing signage visibility adjacent Annesley College. Consider the potential to upgrade school crossing to increase visibility (e.g. flashing lights).
- Investigate restricting parking adjacent Annesley College (north side) to be short term parking in school pickup and drop off times.

A planted central median treatment would provide the opportunity to restrict U-turns adjacent the school, as vehicles are frequently observed performing U-turns and 3 point turns adjacent the school causing a safety concern. Furthermore, a central median would give assistance to pedestrians crossing Rose Terrace, allowing a two stage crossing of the wide street. The pedestrian crossing assistance could also be achieved with some refuge crossings, although this may remove some parking subject to design considerations related to the overall width of the roadway.

Existing school zone and crossing signage visibility adjacent Annesley College is poor. Improving the visibility of the school zone and crossing may remind drivers to slow down through the area, particularly at school times.

Restricting parking adjacent Annesley College to shorter term parking in pickup and drop off times would increase parking turnover during school pickup and drop off times.

Table 8.5 provides the option assessment matrix for the above options.

Table 8.5: Rose Terrace Option Assessment Matrix

Option / Objective	Planted Central Median	Pedestrian Refuge Crossings	School Zone Signage Improvements	School Crossing Upgrade	Short Term Parking Restrictions
Equitable Parking	N	x	N	N	✓
Integrated & Connected	N/x	N	N	N	N
Accessible & Pedestrian Friendly	✓	✓	✓	✓	N
Alternative Travel	N/✓	✓	N/✓	✓	N

8.4.6 Parsons Street

The options developed for Parsons Street relate to managing the speed and volume of traffic. Parsons Street is frequently used by drivers trying to avoid the intersection of Greenhill Road / Goodwood Road. The identified options for Parsons Street are:

- Consider a driveway link, kerb build outs, slow points or road humps between Goodwood Road and Joslin Street.
- Consider right turn ban to/from Goodwood Road during peak periods.

The addition of traffic calming measures such as kerb build outs, driveway links, slow points and road humps would change the visual perception of a wide straight street and help reduce vehicle speed. Traffic calming measure may discourage the use of Parsons Street as part of a rat run between Goodwood Road and Greenhill Road.

Right turn bans during peak periods to/from Parsons Street will help alleviate the risk of crashes occurring at this intersection (with 12 right angle and 6 right turn crashes recorded in the last 5 year period) by restricting the number of vehicles turning right at this intersection in peak periods. Removing vehicles stopped to turn right onto Parsons Street from Goodwood Road may also assist reducing rear end crashes at this intersection, with the majority of the 10 rear end crashes in the last 5 years involved northbound vehicles.

Table 8.6 provides the option assessment matrix for the above options.

Table 8.6: Parsons Street Option Assessment Matrix

Option / Objective	Kerb build-outs	Driveway Link	Slow Points	Road Humps	Right Turn Ban
Equitable Parking	N/x	x	x	N	N
Integrated & Connected	N	N	N	N	x
Accessible & Pedestrian Friendly	✓	✓	✓	✓	N
Alternative Travel	✓	✓	✓	✓	N

8.4.7 Bartley Crescent

The options developed for Bartley Crescent relate to improving traffic circulation around Annesley College during school drop-off and pick-up periods and discouraging the use of Bartley Crescent as a cut-through route during peak periods. The identified options for Bartley Crescent are:

- Consider allowing left turn exit onto Greenhill Road in place of left turn entry;
- Implement planned paid parking trials on Bartley Crescent and Railway Terrace South.

Replacing left turn entry from Greenhill Road onto Bartley Crescent with left turn exit onto Greenhill Road will remove rat runners (south westbound) from the street and will make it easier for Annesley College parents to leave the area after school pickup and drop off. Currently Annesley College parents generally perform a U-turn or 3 point turn on Rose Terrace to exit the area, due to the lack of exit from Bartley Crescent onto Greenhill Road.

Table 8.7 provides the option assessment matrix for the above options.

Table 8.7: Bartley Crescent Option Assessment Matrix

Option / Objective	Left Turn to Greenhill Road	Paid Parking Scheme
Equitable Parking	N	✓
Integrated & Connected	✓	N
Accessible & Pedestrian Friendly	N	N
Alternative Travel	N	N

8.4.8 Moresby Street

The options developed for Bartley Crescent relate to improving the pedestrian access to Wayville Tram Stop. The identified options for Bartley Crescent are as:

- Investigate formal shared street treatment to improve pedestrian access to the Wayville Tram Stop.

Subject to support from residents, the City of Unley and DPTI, Moresby Street could be designated as a shared zone, using practices adopted in NSW where suitable local streets with low traffic volumes and speeds are designated as 10 km/h shared zones with only minor infrastructure changes. This would permit pedestrians to legally walk within the existing roadway area and provide pedestrians and cyclists with priority over vehicles. Given the existing low volumes and speeds on Moresby Street this would improve pedestrian access to the Wayville Tram Stop, particularly as Moresby Street currently has poor sub-standard width footpaths.

In the medium to longer term, Moresby Street could be redesigned as a single surface street, shared by all transport modes.

Table 8.8: Moresby Street Option Assessment Matrix

Option / Objective	Shared Street
Equitable Parking	N
Integrated & Connected	N
Accessible & Pedestrian Friendly	✓✓
Alternative Travel	✓✓

8.4.9 Other Local Streets

No specific measures have been recommended for other specific streets in the Wayville section of the study area as they already have treatments, do not suffer from through traffic or inappropriate traffic speeds or would potentially benefit from measures proposed on other streets.

General local street recommendations are as follows and apply to multiple streets in the area:

- Introduction of yellow no standing line marking near intersections;
- Implement planned paid parking trial;
- Consider increased enforcement of on-street parking controls, particularly those streets close to Greenhill Road and tram stops.

Traffic conditions should continue to be monitored following implementation of other recommended treatments.

8.5 Walking

A number of the options considered in conjunction with individual streets set out in the analysis in Section 8.4 will provide benefits to pedestrians and the general walking environment within the study area. This includes:

- Provision of kerb buildouts on Rose Terrace, LeHunte Street, Joslin Street, Parsons Street;
- Formal shared street treatment on Moresby Street;
- Reduction of traffic speeds and potentially volumes with traffic calming treatments.

In addition to the street specific measures, there are also a number of other general options identified for improving the pedestrian environment and specific projects:

- Ensure there is a strategy for future upgrade and maintenance of footpaths;
- Where residual verge width is below 0.6/1.0m & around transport facilities (bus stops) use full width paving and tree pits where the verge is not managed/landscaped;
- Upgrade footpath widths to a minimum of 1.5m, with additional width based on use requirements as part of planned renewal;
- Where street trees limit or damage footpaths, seek to implement footpaths around the trees as build-outs for indented parking or road narrowings;
- Ensure there is a strategy for future upgrade and improvement to street lighting;
- Advocate for ongoing path connections through Parklands to connect upgraded Greenhill Rd crossings.

Table 8.9 provides the option assessment matrix for the above walking related options.

Table 8.9: Walking Option Assessment

Option / Objective	Upgrade & Maintenance Strategy	Full width paving	Minimum width (1.5m) footpath	Footpaths around trees	Street Lighting Strategy	Parkland Connections North
Equitable Parking	N	N	N	×	N	N
Integrated & Connected	✓	N	✓	✓	N	✓✓
Accessible & Pedestrian Friendly	✓	✓✓	✓✓	✓✓	✓✓	✓✓
Alternative Travel	✓	✓	✓	✓	✓	✓✓

8.6 Cycling

As with walking options, there are a number of options identified on individual streets that would be of benefit to cyclists, as noted:

- Formal shared street treatment on Moresby Street
- Reduction of traffic speeds and potentially volumes with traffic calming treatments.

In addition to the above options, the following options have also been identified that would be specifically for cyclists, and in some cases also providing benefits for pedestrians and assisting with reducing the impact of traffic.

- Review designation and implement upgrades of local bike direct network in accordance with the 2015 draft Walking and Cycling plan.
- Consider the potential for formal bike parking at tram stops.
- Consider advisory treatments on the BikeDirect route parallel to the Mike Turtur/tramline (if deemed still appropriate in local bike direct network review).
- Consider bicycle advisory treatments on length of Joslin Street and Clark Street to connect to new Greenhill Road crossings (and Mike Turtur over the tramline to the south) in accordance with its designation as a low volume bikeway in the draft 2015 Walking and Cycling Plan.
- Advocate for ongoing path connections through Parklands to connect upgraded Greenhill Rd crossings.

Table 8.10 provides the option assessment matrix for the above cycling related options.

Table 8.10: Cycling Option Assessment

Option / Objective	Review Local Bike Direct Network	Formal Tram Bike Parking	Advisory Treatments	Parkland Connections North
Equitable Parking	N	N	N	N
Integrated & Connected	✓	✓✓	✓	✓✓
Accessible & Pedestrian Friendly	✓	✓	N	✓✓
Alternative Travel	✓	✓✓	✓	✓✓

8.7 Public Transport

Although much of the public transport network is the responsibility of DPTI, the City of Unley should be working with and advocating to DPTI for improvements, particularly in light of the significant recent reductions in patronage. Improvements will support existing travel demand and encourage modal shift and ensure that as additional development is implemented through the Inner Metro DPA, enhanced public transport options and capacity are available to avoid further pressure from increased traffic demand. A number of public transport options have been identified that would be led by Unley, including:

- Improve pedestrian link lighting
- Consider installation of bicycle parking at tram stops
- Improve pedestrian path link between Moresby Street/Wayville Tram Stop and Parsons/Joslin Street alongside tramline
- Advocate to Adelaide Metro for increased promotion of '2 section' tram tickets.

Table 8.11 provides the option assessment matrix for the above options that would be led by Unley Council.

Table 8.11: Public Transport Option Assessment for City of Unley

Option / Objective	Review and upgrade access lighting	Formal Tram Bike Parking	Pedestrian Path Improvements at Wayville Tram Stop	Advocate to AdelaideMetro for 2 Section Tram Ticket Promotion
Equitable Parking	N	N	N	N
Integrated & Connected	N	N	✓	N
Accessible & Pedestrian Friendly	✓	✓	✓✓	N
Alternative Travel	✓	✓✓	✓✓	✓

Options that would require delivery through advocating to and working with DPTI are:

- a pedestrian maze tram line crossing near Goodwood Road Tram Stop for people that park further north east to provide better access to the available parking and to the tram stop in general;
- increased frequencies of existing public transport, particularly Greenhill Road bus services;
- pedestrian access improvements to existing bus stops on Goodwood Road and Greenhill Road;
- Improvements to bus stop facilities;
- Improved Park and Ride options further south.

Table 8.12 provides the option assessment matrix for the above public transport related options that would require DPTI to lead.

Table 8.12: Public Transport Option Assessment in Conjunction with DPTI

Option / Objective	Additional Pedestrian Maze	Train & tram capacity & frequency	Bus stop routes, locations, facility & frequency	Park & Ride improvements south
Equitable Parking	✓	N	N	✓
Integrated & Connected	✓	✓	✓	N
Accessible & Pedestrian Friendly	✓	✓✓	✓	N
Alternative Travel	✓	✓✓	✓✓	✓

8.8 Parking

Much of the study area is already covered by time limited parking and those locations where there are not time limits were not observed with significant on-street parking that would not be related to residents. However, concerns over long term parking, particularly relating to tram commuters and staff of businesses on Greenhill Road, were raised, as well as concerns relating to the lack of enforcement of existing parking restrictions. Furthermore, concerns were raised regarding vehicles being parked too close to intersections. Residents generally expressed concerns of parking associated with increasing use of the showgrounds, including the Royal Adelaide Show (for which temporary parking restrictions are rolled out across Wayville).

A limited number of options and actions have therefore been identified:

- Seek to engage with Greenhill Road businesses to understand their staff parking provision and arrangements and assist with managing on-street demands.
- Monitor on-street parking locations for possible extension of the zones covered by existing time limited parking to prevent all-day parking.
- Review parking restriction enforcement regularity, particularly on streets closest to Greenhill Road and the tramline.
- Review all signage and line marking in proximity to intersections to ensure that it is adequately and visibly marked to maintain sight distance and safe parking distances.

9. Draft Recommendations

9.1 Local Network Infrastructure

Draft recommendations were developed for upgrades to the local street network infrastructure in each of the three suburbs within the study area based on the option assessment. The recommendations took into account the issues that each of the options would address, and within the recommendations a suggested priority timescale for implementation was identified, with highest priority generally given to those options that address safety concerns, and recognising that the overall package would have been delivered over a number of years.

The draft recommendations are summarised in tables 9.1 to 9.3 for each of the three suburbs.

Table 9.1: Draft Recommendations for Unley

Location	Recommendation	Priority
Hughes St/Palmerston Rd	Install kerb build-outs at intersection	Medium
Hughes St/Roberts St	Install kerb build-outs at intersection	Medium
Hughes St/Salisbury St	Install kerb build-outs at intersection	Medium
Thomas St/Mornington Rd	Install raised intersection table	Medium (subject to bike plan priorities)
Salisbury Street	Install raised table as part of no entry threshold	Medium to Low
Palmerston Road	Install raised table as part of no entry threshold	Medium to Low
Salisbury Street	Seek to install angle parking north of Park Terrace	Low
Palmerston Road	Seek to install angle parking north of Park Terrace	Low
Various	North-south bicycle route upgrade	Medium (subject to bike plan priorities)
Young Street	Investigate options for traffic signals at Unley Road intersection	Medium
Little Charles Street	Formalise as a shared/single surface street	Low or on asset renewal
Palmerston Place	Formalise as a shared/single surface street	Low or on asset renewal

Table 9.2: Draft Recommendations for Wayville

Location	Recommendation	Priority
Parsons Street	Restrict right turns from Goodwood Road in peak periods	High
LeHunte Street	Install driveway link adjacent Wayville Reserve	High
Young Street/Short Street	Install modified t-junction and driveway entry treatment at intersection	High
Rose Terrace/Short Street	Install modified t-junction and driveway entry treatment at intersection	High
Joslin St/Davenport Tce	Install roundabout at intersection	Medium
Clark St/Davenport Tce	Install roundabout at intersection	Medium
Rose Terrace	Raised median treatment between Clark St & Bartley Tce	Medium
Bartley Terrace	Reverse direction of travel to exit only to Greenhill Road	Medium
Joslin Street	Install bicycle advisory treatments	Medium to Low (subject to bike plan priorities)
Clark Street	Install bicycle advisory treatments	Medium to Low (subject to bike plan priorities)
Moresby Street	Formalise as a shared/single surface street	Low or on asset renewal

Table 9.3: Draft Recommendations for Goodwood

Location	Recommendation	Priority
Hardy Street	Road closure north of Ophir St	High
Weller Street	Road closure north of Ophir St	High
Fox Street	Driveway entry treatments at both ends	High
Albert Street	Install build outs at Hardy St & Weller St intersections	Medium
Ada Street	Reverse intersection priority at Florence St & Lily St intersections	Medium
Musgrave Street	Improve connection from Mike Turtur bikeway to Railway Tce South	High
Railway Terrace South	Investigate and implement continuing shared path adjacent the tram line	Medium to Low
Albert Street	Entry threshold treatment at Unley Road intersection	Medium
Various	Entry threshold treatments at local street intersections with Goodwood Road as part of masterplan	Medium (related to masterplan timing)
Weller Street	Bicycle Boulevard treatment	Medium to Low (subject to bike plan priorities)
Simpson Parade	Bicycle Boulevard or shared path treatment	Medium to Low (subject to bike plan priorities)
Albert Street	Pedestrian refuge adjacent Soutar Park	Medium to Low

9.2 Wider Recommendations

In addition to the suburb specific recommendations for the local street network, there are also wider recommendations that cover the whole study area and in some cases beyond. The recommendations are summarised in Table 9.4.

Table 9.4: Draft Walking, Cycling and Public Transport Recommendations

Mode	Recommended Measure
Walking	Footpath Upgrade & Maintenance Strategy
	Full width paving where narrow verges or with high pedestrian activity
	Minimum width footpath (1.5m)
	Footpaths around trees
Cycling	Review and upgrade bike direct designation in accordance with 2015 draft Walking and Cycling Plan
	Tram stop bike parking
	Musgrave St/Mike Turtur bikeway intersection upgrade
	Continuation of Mike Turtur bikeway between Musgrave Street and Goodwood Road
Public Transport	Bartley Terrace tram stop parking
	Review and upgrade bus stops for DDA
	Access lighting
DPTI Public Transport	Additional pedestrian maze at Goodwood Road
	Train & Tram capacity & frequency improvements
	Review of bus stop locations in relation to crossing opportunities
	Advocate for improved park and ride at stations/stops further south on tram/train lines to reduce local on-street park and ride demand

10. Community Consultation

10.1 Introduction

Following the endorsement of the Draft Concept Plan and recommendations, the City of Unley completed a community consultation on the draft document. A total of 460 responses were received to the consultation, with 217 respondents supporting the draft plan, 194 respondents opposed to the draft plan and 49 not indicating a preference to the draft plan. Many of those opposed to the plan were however likely to be opposed based on single or a limited number of issues, rather than the overall principle of the plan.

10.2 Road Closures

Prior to the community consultation, Council had endorsed a recommendation to trial 6 month road closures on Hardy Street and Weller Street. This recommendation was included as part of the consultation package. Whilst there was a high proportion of support for the closures amongst residents of Hardy Street (8 out of 11 respondents), along Weller Street and within the wider area, the majority of residents did not support the closures (108 opposed out of 189 respondents).

As a result of the community response, the recommendations for the road closures have been removed from the final plan. However, some form of traffic management treatment is recommended for future consideration on both streets and a number of potential options were identified as part of the option assessment in sections 7.4.2 and 7.4.3. For Weller Street, this is likely to be as part of the proposed bicycle boulevard, whilst Hardy Street would require complementary treatment to ensure and traffic displaced from Weller Street does not impact on Hardy Street.

10.3 Other Considerations

Within Unley there were 147 respondents, with 86 respondents supporting the plan, 41 respondents opposing the plan and 20 not expressing a preference. Respondents indicated strong support for the proposed parking controls on Mary Street. Residents of Beech Avenue raised concerns regarding traffic passing through the bend in the street, even though traffic volumes are very low (less than 100 daily). The recommendations for improved lighting in Beech Avenue could be complemented by some form of traffic management to improve road safety for all users of the street, and this is to be considered further by Council.

Within the Goodwood suburb, 207 responses were received, with 81 respondents supporting the plan, 108 opposing the plan and 18 not indicating a preference. Aside from the consideration of the road closures there was general support for the plan. Concern was however expressed over the impact of parking on the safety of Albert Street at the King William Road intersection and parking restrictions in this location are to be considered further by Council and have been added as a recommendation.

In Wayville, 79 responses were received, with 35 respondents supporting the plan, 35 respondents opposing the plan and 9 not indicating a preference. There were two main issues on which respondents who opposed the plan commented, which were converting Bartley Terrace to exit only and installing a median along Rose Terrace.

As a result of the comments, Bartley Terrace has been changed to a left-in and left-out recommendation on to Greenhill Road. This is anticipated to assist with removing some of the u-turns that take place within Rose Terrace, although it may result in some additional traffic in Rose Terrace, which may exacerbate the speed concerns. The pedestrian crossing safety issues would also remain. The recommendation for the median has therefore been changed to a recommendation to investigate options for pedestrian crossing refuges to assist pedestrians and vehicle speed management.

11. Final Recommendations

11.1 Local Network Infrastructure

The draft recommendations have been amended following the community consultation such that the upgrades to the local street network infrastructure in each of the three suburbs are based on the option assessment and community consultation responses. The final recommendations have taken account of the issues that each of the options would address and the community responses. The suggested priority timescale for implementation has been identified, with highest priority generally given to those options that address safety concerns.

The overall package of the local network improvements would be expected to take up to 10 years for full delivery, taking account of available budgets, external funding opportunities and competing demands across the whole of the City of Unley. Some of the projects, including the more significant long term projects that would involve DPTI could have a longer timescale related to the overall 30 year plan for Greater Adelaide. The proposed priority level and timescale for each of the measures will be reviewed further following the Community consultation on the Draft Concept Plan.

The final recommendations are summarised in tables and included in Appendix B for each of the three suburbs.

11.2 Wider Recommendations

In addition to the suburb specific recommendations for the local street network, there are also wider recommendations that cover the whole study area and in some cases beyond. The recommendations are summarised in Table 11.1.

Table 11.1: Walking, Cycling and Public Transport Options

Mode	Recommended Measure
Walking	Footpath Upgrade & Maintenance Strategy
	Full width paving where narrow verges and with high pedestrian activity
	Minimum width footpath (1.5m)
	Footpaths around trees
Cycling	Review and upgrade bike direct designation in accordance with 2015 draft Walking and Cycling Plan
	Tram stop bike parking
	Musgrave St/Mike Turtur bikeway intersection upgrade
	Continuation of Mike Turtur bikeway between Musgrave Street and Goodwood Road
Public Transport	Bartley Terrace tram stop parking
	Review and upgrade bus stops for DDA
	Access lighting
DPTI Public Transport	Additional pedestrian maze at Goodwood Road
	Train & Tram capacity & frequency improvements
	Review of bus stop locations in relation to crossing opportunities
	Advocate for improved park and ride at stations/stops further south to reduce local on-street park and ride demand

12. References

30 Year Plan for Greater Adelaide, 2010

AdelaideMetro's Park 'n' Ride Guide, May 2014

The City of Unley 4 Year Plan 2013-2016; A Community of Possibilities

City of Unley Draft Village Living and Desirable Neighbourhoods Development Plan Amendment (DPA), 2014

The City of Unley Pedestrian and Bicycle Plan, 2005

City of Unley Super Tuesday Bike Commuter Survey, May 2014

Healthy by Design SA, 2013

Inner Metro Rim Structure Plan, 2013

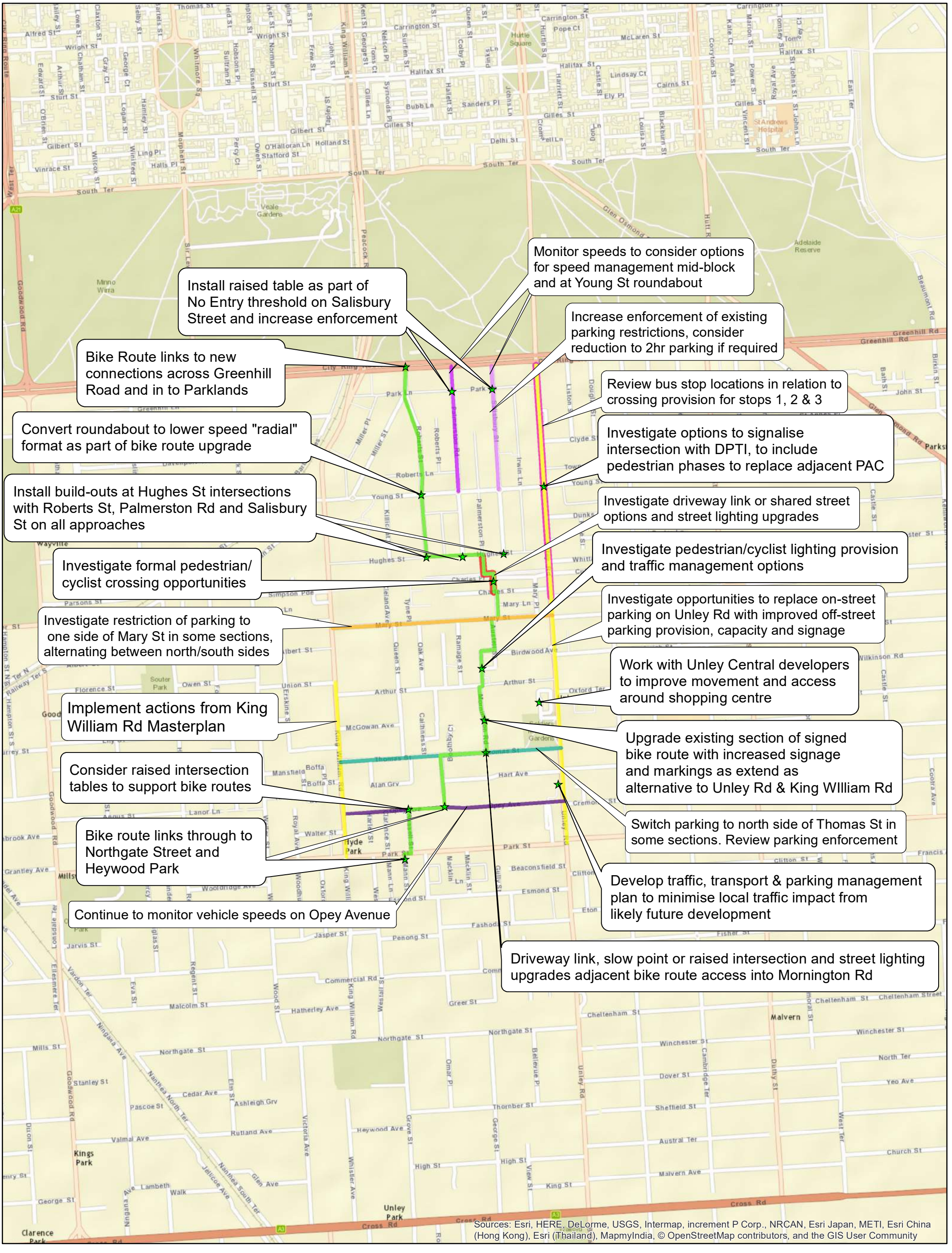
Streets for People: A Compendium for South Australian Practice, 2012

Unley Integrated Transport Strategy, 2002

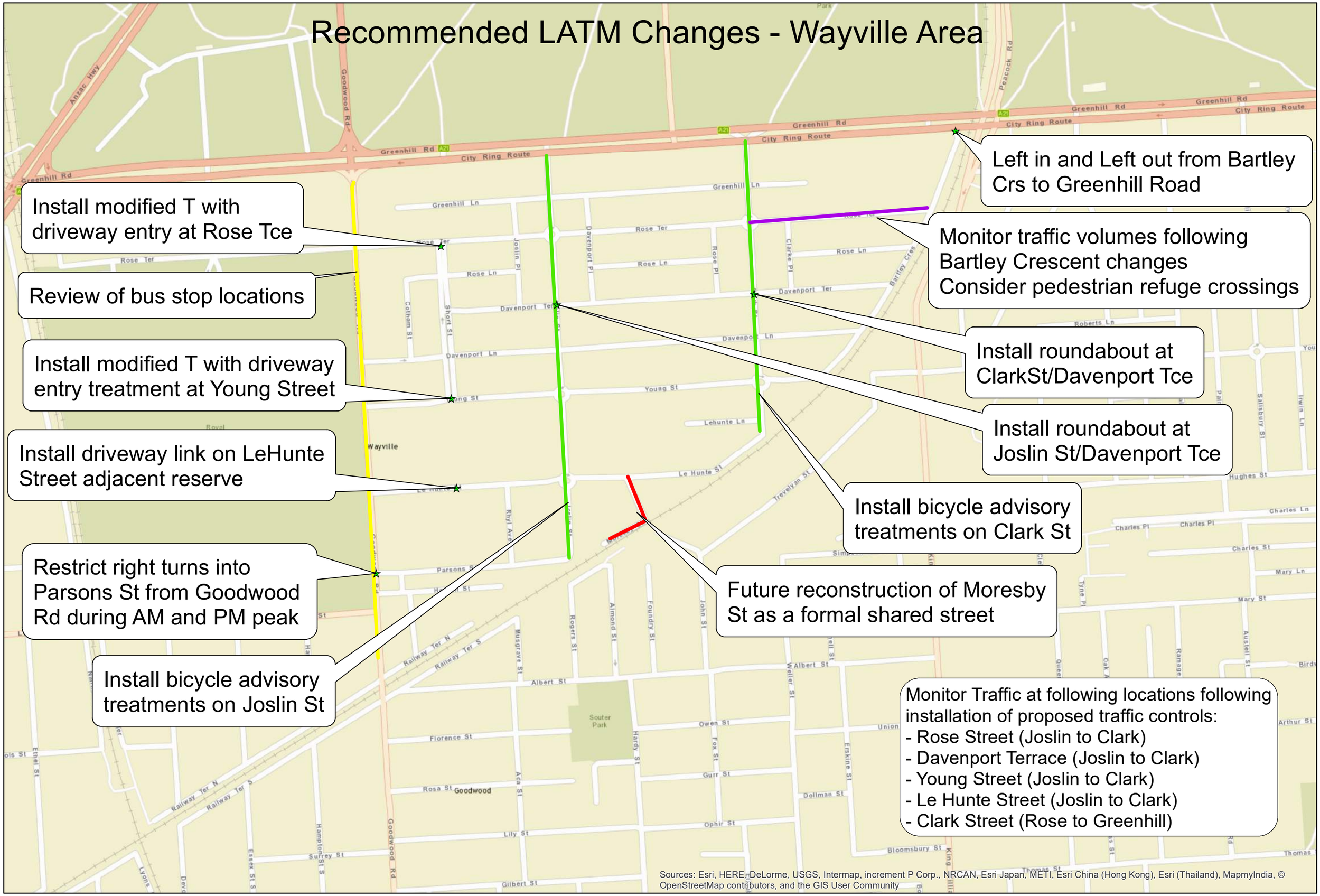
Appendix A

Precinct Upgrade Plans

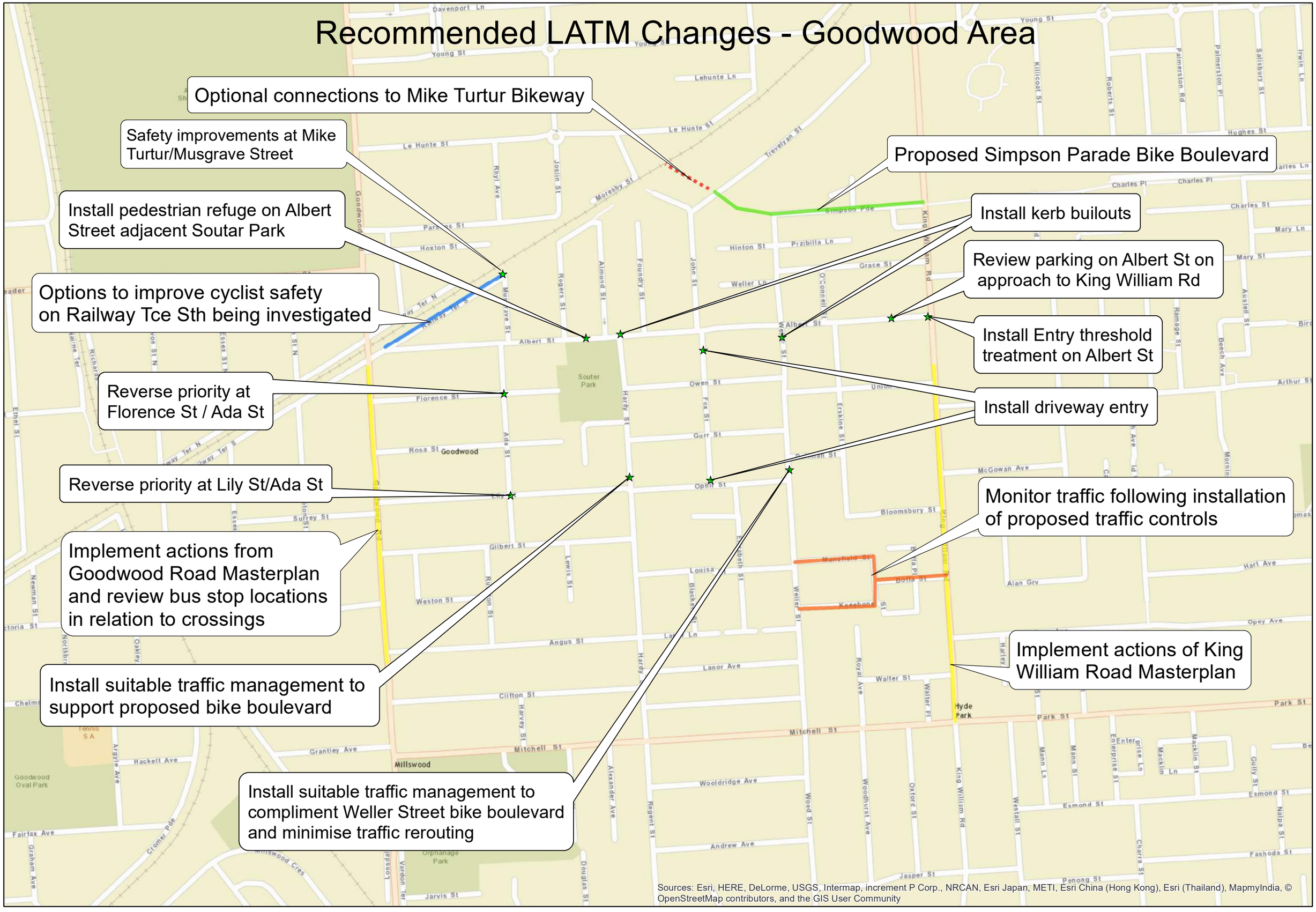
Recommended LATM Changes - Unley Area



Recommended LATM Changes - Wayville Area



Recommended LATM Changes - Goodwood Area



Appendix B

Precinct Summary Tables

Precinct - Unley (Show on the Map)					
Recommendation	Priority	Estimated Cost*	Justification / Advantages	Consequences	Alternative/s Treatments (if any)
Install kerb build outs at Hughes Street / Palmerston Road intersection	Medium (3-5 yrs)	Low	Control vehicle speeds Improve pedestrian safety	N/A	N/A
Install kerb build outs at Hughes Street / Roberts Street intersection	Medium (3-5 yrs)	Low	Control vehicle speeds Improve pedestrian safety	N/A	N/A
Install kerb build outs at Hughes Street / Salisbury Street intersection	Medium (3-5 yrs)	Low	Control vehicle speeds Improve pedestrian safety	N/A	N/A
Install raised intersection at Thomas Street / Mornington Road intersection	Medium (3-5 yrs) or in line with bicycle plan priorities	Medium to High	Control vehicle speeds near bike access to Mornington Road	N/A	Install driveway link instead of raised intersection
Install raised table as part of No Entry thresholds on Salisbury Street and Palmerston Road	Medium to Low (5-10 yrs)	Medium	Control vehicle speeds Increase awarensess of control measures	N/A	N/A
Install angled parking on Salisbury Street and Palmerston Road north of Park Terrace	Low (within 10 yrs) or as part of a road renewal project	Medium to High	Increase parking provision near Greenhill Road businesses	May require kerb and gutter relocation to achieve suitable design standards	N/A
North-South Bicycle Route Upgrade	Medium (3-5 yrs) or in line with bicycle plan priorities	Medium to High	Improve cyclist safety	N/A	N/A
Investigate traffic signals at Young Street / Unley Road intersection to incorporate existing pedestrian signals	Medium (3-5 yrs)	High	Provide safe controlled access to the precinct	Likely to result in a reduced footpath width and impact on width of on-street bicycle lanes.	N/A
Upgrade Little Charles Street and Palmerston Place to shared streets	Low (within 10 yrs) or as part of road renewal project. Crossing upgrade may form part of bicycle plan priorities	High	Provide safe access for pedestrians and cyclists	N/A	Install driveway link on Little Charles Street and Palmerston Place. Crossing upgrade for Keswick Creek shared path as per bicycle plan

*Low Cost < $25,000, Medium Cost $25,000-$75,000, High Cost > $75,000

Precinct - Wayville (Show on the Map)					
Recommendation	Priority	Estimated Cost*	Justification / Advantages	Consequences	Alternative/s Treatments (if any)
Restrict right turns into Parsons Street from Goodwood Road during the AM and PM peak.	High (1-2 yrs)	Low	Reduce crash risk at Goodwood Road / Parsons Street intersection Discourage rat running through precinct	Access to some properties and businesses in Parsons Street and Hoxton Street will be limited during peak periods	Install driveway link or angled slow points along Parsons Street
Install driveway link on LeHunte street adjacent Wayville Reserve	High (1-2yrs) In conjunction with right turn ban into Parsons Street	Medium to High	Discourage rat running through precinct Manage vehicle speeds	Loss of some on-street parking	Install angled slow points along LeHunte Street
Install modified T-junction with driveway entry treatment at Young Street / Short Street junction	High (1-2 yrs) In conjunction with recommendations above	Medium	Discourage rat running through precinct Manage vehicle speeds	Could result in the loss of some on-street parking	Install driveway link or angled slow points along Young Street
Install modified T-junction with driveway entry treatment at Rose Street / Short Street junction	High (1-2yrs) In conjunction with recommendations above	Medium	Discourage rat running through precinct Manage vehicle speeds	Could result in the loss of some on-street parking	Install driveway link / angled slow points or raised central median treatment between Goodwood Road and Joslin Street
Install roundabout at Joslin Street / Davenport Terrace intersection	Medium (within 5yrs)	Medium to High	Discourage rat running through precinct Manage vehicle speeds	N/A	
Install roundabout at Clark Street / Davenport Terrace intersection	Medium (within 5 yrs)	Medium to High	Discourage rat running through precinct Manage vehicle speeds	N/A	
Permit left turn entry and exit movements at the Bartley Cresent / Greenhill Road intersection	Medium (within 5 yrs)	Low	Improve circulation of traffic during school drop-off and pick-up times Reduce need for u-turns on Rose Terrace near school Discouarge rate running through the precint via Bartley Crescent	Could result in minor increase in traffic (primarily local access traffic)	Permit entry and exit movements at the Bartley Cresent / Greenhill Road intersection but install a part road closure at Rose Terrace to prevent southbound movements along Bartley Crescent.
Install bicycle advisory treatments on Joslin Street and Clark Street	Medium to low (5-10 yrs) or in accordance with bicycle plan priorities	Low	Improve awareness of cyclists on these routes Improve wayfinding for cyclists through the precinct	N/A	N/A
Formalise Moresby Street as a shared street	Low (within 10 yrs) or when road is due for renewal	High	Improve pedestrian safety near tram stop Encourage public transport use	N/A	N/A

*Low Cost < $25,000, Medium Cost $25,000-$75,000, High Cost > $75,000

Precinct - Goodwood (Show on the Map)					
Recommendation	Priority	Estimated Cost*	Justification / Advantages	Consequences	Alternative/s Treatments (if any)
Install suitable traffic management (angled slow points, driveway links or road humps) on Hardy Street and Weller Street	High (1-2 yrs) both road treatments to be installed concurrently	Low to Medium	Discourage rat running through precinct Manage vehicle speeds Facilitate Weller Street becoming a bike boulevard	Potenital loss of on-street parking depending on treatment	
Install driveway entry treatments at northern and southern ends of Fox Street	High (1-2 yrs) in conjunction with road closures	Medium	Prevent drivers using Fox Street to bypass proposed road closures	Some loss of on-street parking adjacent to driveway entry treatments	Install angled slow points, centrally located driveway link or road humps along Fox Street Install road closure at southern end of Fox Street
Install kerb buildouts at Hardy Street / Albert Street intersection and Weller Street / Albert Street intersection	Medium (within 5 yrs) subject to outcome of proposed road closures	Low to Medium	Improve sight distance at intersections Assist in preventing crashes Improve pedestrian crossing opportunities	N/A	Raised table intersection treatments subject to outcome of road closures
Reverse traffic control priority at Florence Street / Ada Street intersection and Lily Street / Ada Street intersection	Medium (within 5 yrs)	Low	Break up through movements along Lily Street and Ada Street at more appropriate locations Manage vehicle speeds along Lily Street and Ada Street Assist in discouraging rat running through precinct	N/A	Install slow points or road humps along Ada Street and Lily Street
Improve connection between Mike Turtur and Railway Terrace South across Musgrave Street	High (1-2 yrs)	Low	Improve cyclists safety and awareness	Possible loss of up to 2 on-street parking spaces subject to detailed design	N/A
Investigate and implement continung shared use path along Railway Tce South adjacent the tram line	Medium to Low (within 10yrs)	High	Improve cyclists safety and separate cyclist and vehicular traffic	Possible loss of on-street parking or change in traffic conditions subject to detailed design	N/A
Install entry threshold treatment at entrance to Albert Street from Unley Road	Medium (within 5yrs)	Low to Medium	Control vehicle speeds on entry to Albert Street and improve conditions for pedestrians	N/A	N/A
Install entry threshold treatments at local road entrances from Goodwood Road in accordance with Goodwood Road master plan	Medium to Low (within 10yrs) or in accordance with Goodwood Road master plan priorities	Medium to High (subject to final number of treatments)	Control vehicles speeds on entry to local roads and improve conditions for pedestrians	N/A	N/A
Implement bike boulevards on Weller Street and Simpson Parade	Medium to Low (within 10yrs) or in accordance with bicycle plan priorities	Medium to High (subject to detailed design)	Provide direct cycling connections through the precinct Better connect strategic cycling routes through the precinct Provide safe alternative north-south cycling route to King William Road	N/A	N/A
Install pedestrian refuge on Albert Street adjacent Soutar Park	Medium to Low (within 10 yrs)	Low	Improve pedestrian safety Improve connections to Soutar Park and Wayville Tram Stop	Possible loss of on-street parking subject to final location of refuge	N/A
Review bus stop locations on Goodwood Road in relation to existing and proposed future crossings	Low (within 10 yrs) unless completed as part of wider Goodwood Road or public transport review project	Low	Improve access to public transport and improve pedestrian safety	Possible need to alter on-street parking to accommodate new bus stop locations	N/A

*Low Cost < $25,000, Medium Cost $25,000-$75,000, High Cost > $75,000

Melbourne

A Level 25, 55 Collins Street
PO Box 24055
MELBOURNE VIC 3000
P +613 9851 9600
E melbourne@gta.com.au

Brisbane

A Level 4, 283 Elizabeth Street
BRISBANE QLD 4000
GPO Box 115
BRISBANE QLD 4001
P +617 3113 5000
E brisbane@gta.com.au

Adelaide

A Suite 4, Level 1, 136 The Parade
PO Box 3421
NORWOOD SA 5067
P +618 8334 3600
E adelaide@gta.com.au

Townsville

A Level 1, 25 Sturt Street
PO Box 1064
TOWNSVILLE QLD 4810
P +617 4722 2765
E townsville@gta.com.au

Sydney

A Level 6, 15 Help Street
CHATSWOOD NSW 2067
PO Box 5254
WEST CHATSWOOD NSW 1515
P +612 8448 1800
E sydney@gta.com.au

Canberra

A Tower A, Level 5,
7 London Circuit
Canberra ACT 2600
P +612 6243 4826
E canberra@gta.com.au

Gold Coast

A Level 9, Corporate Centre 2
Box 37, 1 Corporate Court
BUNDALL QLD 4217
P +617 5510 4800
F +617 5510 4814
E goldcoast@gta.com.au

Perth

A Level 27, 44 St Georges Terrace
PERTH WA 6000
P +618 6361 4634
E perth@gta.com.au